

APPLICATION AND SCHEDULE OF FEES FOR STORMWATER MANAGEMENT FACILITIES REVIEW AND INSPECTION

Address or Location _____

Owner _____ Date _____

Contact _____ Phone _____ Nos. _____

Engineer _____

Filing Fees

Residential -	\$25.00	Amt. Paid _____
Non-Residential -	\$100.00	Amt. Paid _____

Review and Inspection Fees - Applicant shall pay the actual cost of any review and inspection by the Township consultant subject to the following minimum fees:

<u>Proposed Impervious Area</u>		
500 to 999 Sq. feet -	\$150.00 minimum	Amt. Paid _____
1,000 sq. feet and above -	\$500.00 minimum	Amt. Paid _____
<u>Proposed Earth Disturbance</u>		
500 to 4,999 sq. feet -	\$150.00 minimum	Amt. Paid _____
5,000 sq. feet to 1 acre -	\$500.00 minimum	Amt. Paid _____
Greater than 1 acre -	\$1,000.00 minimum	Amt. Paid _____

Stormwater Control Measure Fees - \$25.00 each minimum plus the actual cost of any fees associated with the Township's related use of consultants. Amt. Paid _____

Operation /On-Going Maintenance Fees and Enforcement of Agreements

Review, Inspection and Legal Fees - \$25.00 plus the actual cost of any fees associated with the Township's related use of consultants and legal counsel.
Amt. Paid _____

Approved for Processing By: _____

**NETHER PROVIDENCE TOWNSHIP
STORMWATER MANAGEMENT FACILITIES
PERMIT**

THIS AUTHORIZES THE INSTALLATION OF STORMWATER MANAGEMENT FACILITIES AND/OR IMPROVEMENT IN ACCORDANCE WITH THE ATTACHED APPLICATION. NO VARIANCE FROM THE APPLICATION SUBMISSION CAN BE MADE UNLESS APPROVED.

Address or Location _____

Owner(s) _____

Date _____

Contact Phone Nos. _____

Engineer/ Consultant (if applicable) _____

By: _____
Township Manager

The purpose of this is to help reduce stormwater runoff in the community, to maintain groundwater recharge, to prevent degradation of surface and groundwater quality, and to otherwise protect water resources and public safety.

What needs to be sent to the Municipality?

Even though a formal drainage plan is not required for individual lot owners, the Simplified Method worksheet found in Table B-4 and a simple sketch plan containing the features described in Step 5 of Section B.1 needs to be submitted to the Municipality, and if applicable, the contractor prior to construction. The Operation and Maintenance Agreement found in Section B.5 needs to be signed and submitted with the simple sketch plan to the Municipality for approval.

B.1 Determination of Simplified Approach Volume Requirements

All proposed impervious areas must be included in the determination of the amount of new impervious areas and the size of proposed BMPs needed to control stormwater. Proposed impervious areas on an individual residential lot include: roof area, pavement, sidewalks, driveways, patios, porches, permanent pools, or parking areas. Sidewalks, driveways, or patios that are constructed with gravel or pervious pavers that will not be converted to an impervious surface in the future need not be included in this calculation. Therefore, the amount of proposed impervious area can be reduced for proposed driveways, patios, and sidewalks through the use of gravel, pervious pavement, and turf pavers. All proposed impervious areas must be constructed so that runoff is conveyed to a BMP; no runoff can be directed to storm sewers, inlets, or other impervious areas (i.e., street).

In addition, the use of low impact development is recommended to further minimize the effect of the new construction on water, land, and air. Low impact development is a method of development that incorporates design techniques that include: minimizing the amount of land disturbance, reducing impervious cover, disconnecting gutters and directing runoff to vegetated areas to infiltrate, and redirecting the flow of runoff from impervious driveways to vegetated areas instead of to the street or gutter.

Below are the steps that must be undertaken to meet the Ordinance requirements. The results obtained for each step must be included in the Simplified Method Worksheet found in Table B-4:

STEP 1 – Determine the total area of all proposed impervious surfaces that will need to drain to one or more BMPs. Determine locations where BMPs need to be placed so that runoff from all of the proposed impervious surfaces can be captured. Select the BMPs to be used and determine the requirements of each from Section B.3. For instance, the back half of a garage may drain 200 square feet of roof to a rain barrel, and the front half of a garage may drain 200 square feet of roof and 540 square feet of driveway to a bioretention area. Then, obtain the required storage volume and surface area needed for each of the proposed BMPs from the appropriate heading below.

For Rain Barrels/Cisterns

STEP 2 – Select the proposed impervious area value in Column 1 of Table B-1 that is closest to, but not less than, the determined value.

STEP 3 – Determine the volume that needs to be provided in cubic feet and gallons to satisfy the volume requirements using Columns 2 and 3 in Table B-1.

Table B-1: Simplified Method - Calculating Rain Barrel/Cistern Storage Volume for 1" Rainfall¹

Column 1	Column 2	Column 3	
Proposed Impervious Area (square feet)	Volume of Rain Barrel/Cistern ² (cubic feet)	Volume of Rain Barrel/Cistern (gallons)	
<i>I</i>	V_{RBcf}	V_{RBgal}	
Sum of all Proposed Impervious Areas	$(1*(1/12)*I)/0.75=V_{RBcf}$	$VRBcf * 7.48=VRBgal$	
50	6	42	↑
100	11	83	
150	17	125	Rain Barrel
200	22	166	
250	28	208	X
300	33	249	
350	39	291	
400	44	332	
450	50	374	
500	56	416	
550	61	457	
600	67	499	Cistern
650	72	540	
700	78	582	
750	83	623	
800	89	665	
850	94	706	
900	100	748	
950	106	790	
999	111	830	

¹The typical volume of a rain barrel is between 50-200 gallons, so more than 1 rain barrel may be needed. Larger volumes may require a cistern.

²Assume that the rain barrel/cistern is 25% full

**TABLE 106.1
Ordinance Exemptions**

Ordinance Article or Section	Type of Project	Proposed Impervious Surface			Earth Disturbance		
		0-499 sq. ft.	500-999 sq. ft.	1,000+ sq. ft.	0-4,999 sq. ft. disturbance	5,000 sq. ft. - < 1 acre	≥ 1 acre
<u>Article IV</u> SWM Site Plan Requirements	Development Redevelopment	Exempt	Not Exempt Simplified Approach	Not Exempt	Exempt	Modified ¹	Not Exempt
<u>Section 304</u> Nonstructural Project Design	Development Redevelopment	Exempt	Not Exempt Simplified Approach	Not Exempt	Exempt	Not Exempt	Not Exempt
<u>Section 305</u> Infiltration Volume Requirements	Development Redevelopment	Exempt	Not Exempt Simplified Approach	Not Exempt	Exempt	Exempt	Not Exempt
<u>Section 306</u> Water Quality Requirements	Development Redevelopment	Exempt	Not Exempt Simplified Approach	Not Exempt	Modified ²	Modified ²	Not Exempt
<u>Section 307</u> Stream Bank Erosion Requirements	Development Redevelopment	Exempt	Not Exempt Simplified Approach	Not Exempt	Exempt	Exempt	Not Exempt
<u>Section 308</u> Stormwater Peak Rate Control and Management Districts	Development Redevelopment	Exempt	Exempt	Not Exempt	Exempt	Not Exempt	Not Exempt
Erosion and Sediment Pollution Control Requirements	Must comply with Title 25, Chapter 102 of the PA Code and other applicable state and municipal codes, including the Clean Streams Law.						Not Exempt

Legend:

- o "Proposed Impervious Surface" in Table 106.1 includes new, additional, or replacement impervious surface/cover as part of development or redevelopment.
- o Exempt - Exempt from required section provision only – SWM site plan submission may still be required if other section provisions are applicable.
- o Modified¹ - Modified SWM site plan need only consist of items in Sections 402.A.2 and 4; 402B.7, 8, 11, and 22; and 402.D.1 and 3 and related supportive material needed to determine compliance with Sections 304 and 308. Modified SWM site plan is required that includes all elements of Section 304, as applicable.
- o Modified² - Modified SWM site plan need only consist of items and related material needed to determine compliance with Section 306.C.
- o Simplified Approach – **Must comply with provisions of Appendix B of the Ordinance.**
- o Redevelopment – See Section 308.I for alternate stormwater peak rate control criteria.

A. Exemptions for Specific Activities

1. Use of land for gardening or home consumption.
2. Agriculture when operated in accordance with a conservation plan, nutrient management plan, or erosion and sedimentation control plan approved by the County Conservation District, including activities such as growing crops, rotating crops, tilling soil, and grazing animals. For agriculture with an approved conservation plan, installation of new or expansion of existing farmsteads, animal housing, waste

ORDINANCE APPENDIX B

Simplified Approach to Storm Water Management for Small Projects

Applicability: Stormwater management procedures for projects with between five hundred (500) square feet and (999) square feet of proposed impervious area.

SIMPLIFIED APPROACH TO STORMWATER MANAGEMENT FOR SMALL PROJECTS

Introduction

The following procedures have been developed to allow homeowners to comply with stormwater management criteria for new projects to meet the requirements of the Act 167 Stormwater Management Ordinance of the Municipality including sizing, designing, locating, and installing on-lot measures, referred to herein as “Best Management Practices” (BMPs). Pennsylvania Act 167 was authorized on October 4, 1978 (32 P.S., P.L. 864) and gave Pennsylvania municipalities the power to regulate activities that affect stormwater runoff and surface and groundwater quantity and quality.

Individual home construction projects on single-family lots which result in between 500 square feet and 999 square feet of impervious area (including the building footprint, driveway, sidewalks, and parking areas) are not required to submit formal drainage plans to the Municipality or County; however, they are still required to address water quality and infiltration goals as outlined in this Simplified Approach document. If the guidelines presented in this brochure are followed, the individual homeowner will not require professional services to comply with these water quality and infiltration goals.

Section B.1 describes requirements and a simplified method for designing a suitable BMP, and a description of what needs to be included on the simple sketch plan. Section B.2 presents definitions of key terms. Section B.3 presents options of BMPs that can be considered for on-lot stormwater management. An example of how to obtain the size and dimensions of a BMP is explained in Section B.4. Section B.5 describes the requirements to be met for the modified Operation, Maintenance, and Inspection Plan.

The Simplified Approach requires:

- The first 1” of rainfall runoff from new impervious surfaces to be captured (see definition in Section B.2).

Groundwater – Water beneath the earth's surface that supplies wells and springs and is often between saturated soil and rock.

Groundwater Recharge – The replenishment of existing natural underground water supplies from rain or overland flow.

HEC-HMS – The U.S. Army Corps of Engineers, Hydrologic Engineering Center (HEC) - Hydrologic Modeling System (HMS). This model was used to model the Darby-Cobbs and Crum Creek watersheds during the Act 167 plan development and was the basis for the standards and criteria of this Ordinance.

High Quality (HQ) Waters – Surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water by satisfying Pennsylvania Code Title 25 Environmental Protection, Chapter 93, Water Quality Standards, § 93.4b(a).

Hotspots – Areas where land use or activities generate highly contaminated runoff with concentrations of pollutants in excess of those typically found in stormwater.

Hydrograph – A graph representing the discharge of water versus time for a selected point in the drainage system.

Hydrologic Regime – The hydrologic cycle or balance that sustains quality and quantity of stormwater, baseflow, storage, and groundwater supplies under natural conditions.

Hydrologic Soil Group – A classification of soils by the Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service (SCS), into four runoff potential groups. The groups range from A soils, which are very permeable and produce little runoff, to D soils, which are not very permeable and produce much more runoff.

Impervious Surface – A surface that prevents the infiltration of water into the ground. Impervious surfaces include, but are not limited to, streets, sidewalks, pavements, driveway areas, or roofs. Any surface areas designed to be gravel or crushed stone shall be regarded as impervious surfaces.

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

Infill – Development that occurs on smaller parcels that remain undeveloped but are within or in very close proximity to urban or densely developed areas. Infill development usually relies on existing infrastructure and does not require an extension of water, sewer, or other public utilities.

Infiltration – Movement of surface water into the soil, where it is absorbed by plant roots, evaporated into the atmosphere, or percolated downward to recharge groundwater.

