



## Carroll Township Municipal Stormwater Management Worksheet

50 Rambo Hill Road  
 Shermans Dale, PA 17090  
 717-582-8200

### Municipal Stormwater Management Worksheet

Property Owners Name: \_\_\_\_\_

Address of Property: \_\_\_\_\_

Parcel ID#: \_\_\_\_\_ Municipality: \_\_\_\_\_

Phone No. \_\_\_\_\_ New Impervious Area Associated with this Project: \_\_\_\_\_

Email: \_\_\_\_\_

Stormwater Project Type:  Exempt  Minor Plan  Project Requires Formal SWM Plan

**Acknowledgement-** I declare that I am the property owner, or representative of the owner, and that the information provided is accurate to the best of my knowledge. I understand that stormwater may not adversely affect adjacent properties or be directed onto another property without written permission. I also understand that false information may result in a stop work order or revocation of permits. Municipal representatives are also granted reasonable access to the property for review and/or inspection of this property if necessary.

Signature \_\_\_\_\_ Date \_\_\_\_\_

**Step 1:** Determine the amount of new impervious area created by the proposed project. This includes any new surface areas that prevent infiltration of stormwater into the ground. New stone and gravel areas are considered impervious. Impervious areas existing before July 13, 2021 are not included in this calculation. Use additional sheets if necessary.

*Calculate new impervious area by completing this table.*

Surface	Length (ft)	X	Width (ft)	=	Impervious Area (ft <sup>2</sup> )
Buildings		X		=	
Driveway		X		=	
Parking Areas		X		=	
Patios/walkways		X		=	
Other		X		=	
<b>Total Proposed Impervious Surface Area (Sum of all impervious areas)</b>					

\* If the total new impervious surface area is up to 1000 ft<sup>2</sup> the project is exempt from the requirement to submit a plan for approval. Sign Acknowledgement and file this sheet with the Municipality.

\*\* If the total impervious surface area is 1,001 ft<sup>2</sup> to 5,000 ft<sup>2</sup>, continue to Step 2.

-If project area can be entirely disconnected, sign Acknowledgement, demonstrate disconnection on the site plan per DIA example, and file worksheets with the Municipality.

-If project is between 1,000 ft<sup>2</sup> and 5,000 ft<sup>2</sup> and requires BMP's, complete Step 3.

-If project area is 5,000 ft<sup>2</sup> - 10,000 ft<sup>2</sup> and can't be disconnected, the project does not qualify for the Simplified Approach.

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**Step 2:** Determine Disconnected Impervious Area (DIA). All or parts of proposed impervious surfaces may qualify as Disconnected Impervious Area if runoff is directed to a pervious area that allows for infiltration, filtration and increased time of concentration. The volume of stormwater that needs to be managed could be reduced through DIA. Prepare a minor stormwater site plan (see C-4 for requirements).

**Criteria:**

- \* Overland flow path from the discharge area or impervious area has a positive slope of 8% or less.
- \* Contributing area to each rooftop discharge (downspout) is 500 ft<sup>2</sup> or less.
- \* Soils are not classified as hydrolic soil group "D".
- \* The receiving pervious area shall not include another person's property unless written permission has been obtained from the affected property owner.

Partial Rooftop Disconnection		
Length of Pervious Flow Path (ft) Lots < 5000 ft <sup>2</sup>	Length of Pervious Flow Path (ft)	DIA Credit Factor

**Paved Disconnection Criteria:** Paved surfaces (driveways, walkways, etc.) and gravel can be considered disconnected if it meets the criteria above and:

- \* Runoff does not flow over impervious area for more than 75 ft.
- \* The length of overland flow is greater than or equal to the contributing flow path.
- \* The slope of the contributing impervious area is 8% or less.
- \* If discharge is concentrated at one or more discrete points, no more than 1,000 ft<sup>2</sup> may discharge to any one point. In addition, a gravel strip or other spreading device is required for concentrated discharges. Non-concentrated discharges along the entire edge of paved surfaces must include provisions for the establishment of vegetation along the paved edge and temporary stabilization of the area until the vegetation is established.
- \* If these criteria can be met, the DIA credit = 0.

Using the calculations from **Step 1**, complete the table below. This will determine the impervious area that may be excluded from the area that needs to be managed through stormwater BMP's. If the total impervious area to be managed = 0, the area can be considered entirely disconnected.

Surface	Proposed Impervious Area	X	DIA Credits	=	Impervious Area (ft <sup>2</sup> ) to be managed
Buildings (area to each downspout)		X		=	
Driveway		X		=	
Parking Areas		X		=	
Patios/walkways					
Other		X		=	
Project Area: Total Proposed Impervious Surface Area to be managed (Sum of all impervious areas)					

If total surface area to be managed is greater than 0, continue to **Step 3**.

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**Step 3:** Calculate the volume of stormwater runoff created by proposed impervious surfaces or see Simple BMP Sizing in step 4.

Impervious Area (ft <sup>2</sup> ) to be Managed (Sum of Step 2)	X	3.0in./12in.=0.25 (3.0 in is 2 year, 24 hour rainfall amount)	=	Amount of Stormwater to be Managed (ft <sup>3</sup> )
	X	0.25	=	

Best Management Practices need to be used to manage the volume of stormwater created by the proposed impervious areas. The cubic feet of stormwater that need to be managed may also be further reduced by planting new trees. If the criteria below can be met, the amount of stormwater to be managed can be reduced per the following:

**Deciduous Trees = 6 ft<sup>3</sup> per tree**

**Evergreen Trees = 10 ft<sup>3</sup> per tree**

**Criteria:**

- \* Trees must be a PA native species (See PA Stormwater BMP Manual for list)
- \* Trees shall be a minimum 1" caliper tree and 3 feet tall shrub (min)
- \* Trees shall be adequately protected during construction
- \* No more than 25% of the required capture volume can be mitigated through the use of trees
- \* Dead trees shall be replaced by the property owner within 12 months
- \* Please consider the specifications for each tree species when determining location and spacing

Amount of Stormwater to be Managed (ft <sup>3</sup> ) (Sum of Step 3)	-	Tree Planting Credit (ft <sup>3</sup> )	=	Amount of Stormwater to be Managed (ft <sup>3</sup> )
	-		=	

**Step 4:** Select BMP and size according to the volume of stormwater that needs to be managed. The Guide to Choosing Stormwater BMP's, included in the Simplified Approach, includes sizing calculations for specific techniques.

**Simple BMP Sizing-** Sizing BMP's *may* be simplified through the use of this chart. Take sum of **Step 2** and match it to the "Amount of New Impervious to be Managed" in the white boxes in the table below (rounding up to the next value if between values). Then look in the light grey box to determine the cubic footage based on the type of BMP (bioretention or infiltration). For example, if a proposed 1,000 sq. foot impervious area must handle 240 cubic feet of stormwater in a bioretention system, a 13'x13'x1.5' rain garden or a 36'x2'x3.5' vegetated swale could be used. Show the location and size of the proposed BMP's on the minor stormwater site plan.

BMP Type		Simple BMP Sizing-Amount of New Impervious Area to be Managed (ft <sup>2</sup> )											
		250	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000
<b>Bioretention</b>	Ex. Rain garden, Vegetated swale	60 ft <sup>3</sup> or-	120 ft <sup>3</sup> or-	180 ft <sup>3</sup> or-	240 ft <sup>3</sup> or-	360 ft <sup>3</sup> or-	480 ft <sup>3</sup> or-	600 ft <sup>3</sup> or-	720 ft <sup>3</sup> or-	840 ft <sup>3</sup> or-	960 ft <sup>3</sup> or-	1,080ft <sup>3</sup> -or-	1,200ft <sup>3</sup> -or-
<b>Infiltration</b>	Ex. Dry well, Infiltration trench	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>	180 ft <sup>3</sup>

Bring the worksheets, plan Owner Acknowledgement, and BMP Facilities and Maintenance Agreement (if applicable) to your municipality. If an area greater than 5,000 square feet of earth is disturbed, an erosion and sedimentation (E&S) control plan must be prepared. The municipality may require that the E&S plan be submitted to, reviewed, and approved by the Perry County Conservation District.

## Municipal Stormwater Management Worksheet

The minor stormwater site plan and worksheets assist the owner/applicant in preparing the necessary information for the municipality to review and approve.

### OWNER ACKNOWLEDGEMENT

*(Municipality may decide if the Owner Acknowledgement should be notarized and/or recorded, based on municipal process)*

- \* Development Activities shall begin only after municipality approves the plan.
- \* The installed BMP's will not adversely affect any propoerty, septic systems, or drinking water wells on this or any other property.
- \* If a stormwater management alternative to the approved minor stormwater site plan is used, the applicant will submit a revised plan to the municipality for approval. If a site requires a more complex system or if problems arise, the applicant may need the assistance of a licensed professional.
- \* The applicant acknowledges that the proposed stormwater maagement BMP's will be a permanent fixture of the property that cannot be altered or removed without written approval by the Municipality.

I (we) \_\_\_\_\_, hereby acknowledge the above statements and agree to assume full responsibility for the implementation, construction, operation and maintenance of the proposed stormwater management facilities. Furthermore, I (we) also acknowledge that the steps, assumptions, and the guidelines provided in this simplified approach package [minor stormwater site plan & Municipal Stormwater Worksheet(s)] will be adhered to.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_