

# Cumberland Township Simplified Design Approach Worksheet A

Property Owner's Name \_\_\_\_\_

Property Owner's Address  
and phone number \_\_\_\_\_  
\_\_\_\_\_

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

Tax Map Parcel ID # \_\_\_\_\_  
Parcel Size (approx) \_\_\_\_\_

A Sketch Plan must be included and show the following:

Total existing impervious area on the property \_\_\_\_\_  
New impervious area proposed \_\_\_\_\_  
Total impervious area on the property after  
project completion \_\_\_\_\_

Are there any known existing drainage problems or the potential for the proposed project to create drainage problems? (if yes, please explain)

*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 access to the property for review and / or inspection of this project if necessary.

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

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

My Commission expires \_\_\_\_\_

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**To be completed by authorized municipal official**

Type of Stormwater Management Required:

- Exempt from stormwater management plan preparation  
(Worksheet A and Sketch Plan) \_\_\_\_\_
- Minor stormwater management site plan preparation  
(Complete Worksheet B to determine necessary BMP's) \_\_\_\_\_
- Formal stormwater management plan preparation  
(Consult a professional) \_\_\_\_\_

Determined by: \_\_\_\_\_ Date: \_\_\_\_\_

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# Cumberland Township Simplified Design Approach Worksheet B

**Step 1:** Determine the amount of impervious area created by the proposed projects. This includes any new surface area that inhibits the infiltration of stormwater into the ground. New stone and gravel areas are considered impervious. Existing impervious areas are not included in this calculation.

**Table # 1**

Surface	Length	x	Width =	Total Impervious Area (SF)
Buildings				
Buildings				
Driveways				
Parking Areas				
Patios/Walkways				
Decks				
Other				
			<b>Total Proposed Impervious Area =</b>	

**Step 2:** Determine the Disconnect 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 Management Site Plan to determine DIA.

### Determining Status of DIA

- a) Determine contributing area of the roof/driveway to each disconnected discharge. If it's 500 ft<sup>2</sup> or less (for a roof) or 1,000 ft<sup>2</sup> or less (for a driveway), continue to "b". If it's greater than these amounts, the area does not qualify as a DIA.
- b) Determine the length of down slope pervious flow path available for each disconnected discharge.
- c) Determine the % slope of the pervious flow path, % slope = (rise/ run) x 100. Must be 5% or less.
- d) See the table on the next page to determine the percentage of the area that can be treated as disconnected. If the available length of the flow path is equal to or greater than 75 ft, the discharge qualifies as entirely disconnected.

Partial Disconnections		
Length of Pervious Flow Path* (ft) Lots 10,000 ft <sup>2</sup> and Under	Length of Pervious Flow Path* (ft) Lots >10,000 ft <sup>2</sup>	DIA Credit Factor
0 – 7.9	0 – 14	1.0
8 – 15.9	15 – 29	0.8
16 – 22.9	30 – 44	0.6
23 – 29.9	45 – 59	0.4
30 – 34.9	60 – 74	0.2
35 or more	75 or more	0

\*Pervious flow path must be at least 15 feet from any impervious surface and cannot include impervious surfaces.

Using step 2 calculations calculated from the minor stormwater site plan, complete the table below. This will determine the impervious area that may be excluded from the area that needs to be managed through stormwater management BMP's. If total impervious area to be managed is zero, the area can be considered entirely disconnected and further calculations are not needed.

**Table # 2**

Surface	Area (SF)	x	DIA Credit =	Impervious Area to be Managed (SF)
Buildings				
Buildings				
Buildings				
Buildings				
Buildings				
Driveways				
Driveways				
Parking Areas				

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

**Step 3:** Calculate the volume of stormwater runoff created by proposed impervious surfaces.

$$\begin{array}{rclcl}
 \text{Impervious Area (SF) to be} & \times & 2.8\text{in}/12\text{in} = 0.233 & = & \text{Volume of Stormwater} \\
 \text{Managed (Sum from Table 2)} & & \text{(from 24hr rainfall)} & & \text{to be Managed (CF)} \\
 \hline
 & \times & 0.233 & = & 
 \end{array}$$


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**Step 4:** Select BMP's and size according to the volume of stormwater that needs to be managed in Step 3.

**Table # 3 - BMP Sizing Table\***

BMP Type	Necessary Volume** (from Step 3 above)	Length	Width	Depth	Void Ratio	Volume ***
Infiltration Bed or Trench					0.4	
Infiltration Berm					1	
Rain Garden					0.4 in stone 1.0 above ground	
Rain Barrel or other usable storage		Use known volume of rain barrel, etc. 1 cubic foot is equal to 7.48 gallons.			1	
Other						

\* Chart should only be used when a formal SWM Site Plan is not required.

\*\* Should not include areas that were proven to be 100% disconnected