APPENDIX 1.D.

STORM WATER MANAGEMENT SMALL PROJECT DESIGN/APPLICATION

Heidelberg Township, Lebanon County, Pennsylvania

This application pertains to projects that qualify as a Small Project (1,500 square feet of impervious area (cumulative per property)). If a formal Stormwater Management Plan is required in accordance with the Heidelberg Township Stormwater Management Ordinance, **please consult a qualified professional (ex. Engineer, Surveyor, Landscape Architect).**

Property Owner's Name _____

Address of Property _____

Parcel ID _____

Phone Number: Home:_____ Cell: _____

Email Address: _____

1000 SF Exemption Used since March 19, 2006: _____ No_____ Yes: how much:_____

New Impervious Area Associated with this Project _____

Lot Size (Sq. Ft.) _____

Existing Impervious Coverage (Sq. Ft.) _____

Total New Impervious Area since Adoption of SWM Ordinance_____

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 declare that the proposed construction is not within an existing easement or wetland area. I also understand that false information may result in a stop work order or revocation of permits. Township representatives are also granted reasonable access to the property for review and/or inspection of this project if necessary.

Signature _____ Date _____

*All owners must sign

Small Project Plan – Regulated activities on existing lots of record that, measured on a cumulative basis from July 28, 2024 create additional impervious areas of 1,500 sq. ft. or involves an Earth Disturbance Activity such as removal of ground cover, grading, filling or excavation of an area less than 5,000 sq. ft. and do not involve the alteration of SWM Facilities or watercourses.

- Small projects are not required to provide for Rate Control.
- Small projects are required to address at least the first one (1) inch of runoff from new impervious surfaces or an equivalent volume shall be permanently removed from the runoff flow – i.e. it shall not be released into the surface Waters of this Commonwealth. Removal options include reuse, evaporation, transpiration and infiltration.

Disconnected Impervious Area (DIA) – An impervious or impermeable surface that is disconnected from any stormwater drainage or conveyance system and is redirected or directed to a pervious area, which allows for infiltration, filtration, and increased time of concentration.

Step 1: Determine the amount of new impervious surface area created by the proposed project. This includes any new impervious surface area that prevents or decreases infiltration of stormwater into the ground. New stone and gravel areas are considered impervious. Impervious surface areas existing before July 28, 2024 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^2)
Buildings		x		=	
Driveway		x		=	
Parking Areas		x		=	
Other		x		=	
Existing Impervious Area to be Removed (if applicable)					
Surface	**Length (ft)**	**x**	**Width (ft)**	**=**	**Impervious Area (ft^2)**
		x		=	
Total Proposed Impervious Surface Area (Sum of all new impervious areas – all existing impervious area to be removed)					

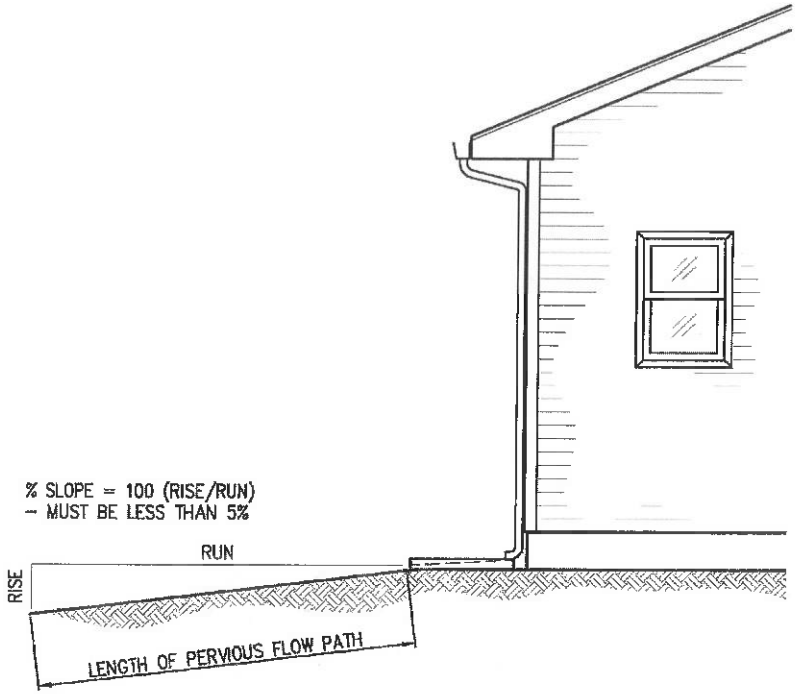
- Continue to Step 2.

Step 2: Determine Disconnected Impervious Area (DIA). All or parts of new 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 use of DIAs.

Partial Rooftop Disconnection	
Length of Pervious Flow Path (ft.)	DIA Credit Factor
75 or more	0
60 – 74	0.2
45 – 59	0.4
30 – 44	0.6
15 – 29	0.8
0 - 14	1.0
Pervious flow path must be at least 15 feet from any impervious surface	

Rooftop Disconnection Criteria

- Overland flow path from the discharge area or impervious area has a positive slope of 5% or less.
- Runoff is not directed towards dwellings or other occupied structures.
- Soils are not classified as hydrologic soil group "D".
- The receiving pervious area shall not include another person's property unless written permission has been obtained and a copy is provided to the Township from the affected property owner.



Disconnected Impervious Area - Rooftop Disconnection
NOT TO SCALE

Paved Disconnection Criteria: Other impervious surfaces (driveways, walkways, swimming pools, porches, decks with porous ground surface, etc. to be confirmed by Township Engineer or Zoning officer) and gravel can be considered disconnected if it meets the criteria above, and:

- Runoff does not flow over impervious area for more than 75 feet.
- The length of overland flow is greater than or equal to the contributing flow path.
- The slope of the contributing impervious areas is 5% or less.
- If discharge is concentrated at one or more discrete points, no more than 1,000 ft² may discharge to any one point. Non-concentrated discharges along the entire edge of paved surface 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 BMPs. If the total impervious area to be managed = 0, the area can be considered entirely disconnected.

Surface	Proposed Impervious Area	x	DIA Credit	=	Impervious Area (ft^2) to be Managed
Buildings (area to each downspout)		x		=	
Driveway		x		=	
Parking Areas		x		=	
Patios/ walkways		x		=	
Other		x		=	
Total Proposed Impervious Surface Area to be managed (Sum of all impervious areas)					

- If the total new impervious surface area can be entirely disconnected, sign Acknowledgement and file worksheets with the Township.
- If the total new impervious surface area cannot be entirely disconnected, continue to Step 3.

Step 3: Calculate the volume of stormwater runoff created by new impervious surfaces. Use the following chart to determine this volume.

Impervious Area (ft^2) to be Managed (Sum of Step 2)	X	1.0 in/12 in = 0.083	=	Volume of Stormwater to be Managed (ft^3)
	X	0.083	=	

Step 4: Determine the techniques to be used to manage the stormwater volume calculated in Step 3. Use the following information to determine the BMPs to be used to manage the proposed stormwater volume.

Where permitted by Heidelberg Township, planting of new trees may be used to manage a portion of the proposed stormwater volume. First, calculate the cubic feet of stormwater that can be managed by planting new trees. If the criteria below can be met, planting of new trees can be used to manage a portion of the proposed stormwater volume:

Deciduous Trees = 6 ft^3 per tree Evergreen Trees = 10 ft^3 per tree

Criteria:

- Trees must be PA native species (See PA Stormwater BMP Manual for a list)
- Trees shall be a minimum 1" caliper tree
- 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

Volume of Stormwater to be Managed (ft^3) (Sum of Step 3)	-	Tree Planting Credit (ft^3)	=	Volume of Stormwater to be Managed (ft^3)
	-		=	

Second, subtract the stormwater volume that can be managed by tree planting from the overall stormwater volume calculated in Step 3. The remaining cubic feet of stormwater must be managed through the installation of properly sized Stormwater BMPs. Select BMPs and size according to the volume of stormwater that needs to be managed.

Alternatively, stormwater BMPs may be sized using the following Simple BMP Sizing table.
(Source: Lycoming County Planning Department)

BMP Type		Simple BMP Sizing - Amount New Impervious Area to be Managed (ft^2)											
		250	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000
Bioretention	Ex. Rain garden, Vegetated swale	21 ft^3 or	42 ft^3 or	62 ft^3 or	83 ft^3 or	125 ft^3 or	166 ft^3 or	208 ft^3 or	249 ft^3 or	291 ft^3 or	332 ft^3 or	374 ft^3 or	415 ft^3 or
Infiltration	Ex. Dry (40% well, Infiltration trench	53 ft^3	105 ft^3	155 ft^3	208 ft^3	313 ft^3	415 ft^3	520 ft^3	623 ft^3	728 ft^3	830 ft^3	935 ft^3	1,038 ft^3

The Simple BMP Sizing table is used as follows. After subtracting the stormwater volume that can be managed through the planting of new trees (if desired), match the remaining stormwater volume to the "Amount of New Impervious Area to be Managed" in white boxes in the table (rounding up to the next value if the number is between two values). Then look in the light grey box to determine the required size of the type of Stormwater BMP (bioretention or infiltration) being considered. For example, 1,000 square foot of new impervious surface area could be accommodated by an 83 cubic foot bioretention system.

Infiltration Trench/Bed Criteria:

- Stone bed shall not be located within 10 feet of any On-lot Sewage Disposal Systems.
- Stone used in the infiltration trenches shall be "clean" stone, i.e. #67, #57, #5 or clean 2B stone for the smaller facilities, and #1 or #3 ballast or R-3 for larger deeper facilities. Copies of the receipt(s) shall be provided to the Township for their records. NO MODIFIED STONE MIXES SHALL BE UTILITZED FOR INFILTRATION.
- The standard void ratio for stone is 0.40 (40% storage for each CF) if calculating by hand or follow the BMP sizing table above.
- It is recommended that the property owner verify that the ground will infiltrate water, this can be accomplished by excavating the trench or pit and placing a large amount of water into the pit to see how long it take to infiltrate.

Once the sizing of necessary stormwater BMPs has been determined, prepare the required information and submit to the Township for review and approval. Bring the worksheets, BMP information (size, location, etc.), Owner Acknowledgement, and BMP Facilities and Maintenance Agreement (if applicable) to the Township.

If an area greater than 5,000 square feet of earth is disturbed, the project qualifies as a Minor Stormwater Management Plan and shall be prepared as outlined in the Township's Code of Ordinances. Simple earth disturbance exemption areas shall not be cumulative if all previously disturbed small project areas are satisfactorily stabilized.

OWNER ACKNOWLEDGMENT

- Development activities shall begin only after Heidelberg Township approves the Small Project.

- The installed Stormwater BMPs will not adversely affect any property, septic systems, or drinking water wells on this or any other property.

- The landowner shall keep on file with the Township the name, address and telephone number of the person or company responsible for maintenance activities; in the event of a change, new information shall be submitted to the Township within 10 days of the change.

- If, after approval of the Small Project by the Township, the applicant wishes to pursue alternative stormwater management measures in support of the project, the applicant will submit revised Small Project information and worksheets to Heidelberg Township for approval. If a site requires a more complex system or if problems arise, the applicant may need the assistance of a licensed professional engineer, landscape architect or surveyor.

- The applicant acknowledges that the proposed Disconnected Impervious Area and/or Stormwater BMPs will be a permanent fixture of the property that cannot be altered or removed without approval by Heidelberg Township.

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 guidelines provided in this submission, including but not limited to Heidelberg Township Stormwater Worksheet, and the Stormwater Management / BMP Facilities and Maintenance Agreement (if applicable) will be adhered to.

Applicant Acknowledgement of Submission

Signature:_____ Date: _____

* All owners must sign

Signature:_____ Date: _____

* All owners must sign

Heidelberg Township Acknowledgement of Receipt

Signature:_____ Date: _____