pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES
POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) MODULE 2

Applicant: **Upper Dublin Township** Project Site Name: **Upper Dublin Township Building**

Surface Water Name(s): **UNT to Wissahickon Creek** Surface Water Use(s): **TSF, MF**

PCSM PLAN INFORMATION

1. Identify all structural and non-structural PCSM BMPs that have been selected and provide the information requested.

Discharge Point(s)	BMP ID	BMP Name	BMP Manual	Latitude	Longitude	DA Treated (ac)
001	1	Sump w/ Snout	6.6.4	40.151453	-75.201397	0.945
002	2	Detention/Infiltration Basin	6.4.3	40.152114	-75.199914	1.206

Undetained Areas: 4.309 acre(s)

☐ The Project Qualifies as a Site Restoration Project (25 Pa. Code §102.8(n))

2. Describe the sequence of PCSM BMP implementation in relation to earth disturbance activities and a schedule of inspections for the critical stages of PCSM BMP installation.

-Install sump with snouth in MH 4 (BMP 1). This manhole must be inspected and cleaned bi-annually.

-Install underground detention/infiltration basin (BMP 2). The outlet structure and junction boxes must be cleaned and inspected bi-annually.

3.	☒ Plan drawings have been developed for the project and will be available on-site.
4.	☐ Plan drawings have been developed for the project and are attached to the NOI/application.
5.	☒ Recycling and proper disposal of materials associated with PCSM BMPs are addressed as part of long-term operation and maintenance of the PCSM BMPs.
6.	Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational and the applicant's plan to avoid or minimize potential pollution and its impacts. **No soils with naturally occuring geologic formations or soil conditions that may have the potential to cause pollution after earth disturbance activities are completed and PCSM BMPs are operational are known to exist on site.**
7.	Identify whether the potential exists for thermal impacts to surface waters from post-construction stormwater. If such potential exists, identify BMPs that will be implemented to avoid, minimize, or mitigate potential thermal impacts. **Impervious surfaces have been reduced and therefore thermal impacts are most likely avoided. Additinally, the use of subsurface infiltraiton/detention Basin (BMP 2) will cool runoff.**
8.	☒ The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.
9.	☒ A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **UNT to Wissahickon Creek** **Discharge Point(s):** **001**

1. ☐ The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.
2. ☒ The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.
3. ☐ An alternative design standard is being used.
4. ☒ A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
5. 2-Year/24-Hour Storm Event: **3.28** inches Source of precipitation data: **NOAA**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **24,766** CF ☒ Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **23,949** CF ☒ Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **-816** CF
9. Identify all selected structural PCSM BMPs and provide the information requested. ☐ Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
001	1	n/a	9,331				☐				
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				

Total Infiltration & ET Credits (CF):

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): **-816**

Total Credits (CF): **0**

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **UNT to Wissahickon Creek** **Discharge Point(s):** **002**

10. ☐ The design standard is based on volume management requirements in an Act 167 Plan approved by DEP within the past five years.
11. ☒ The design standard is based on managing the net change for storms up to and including the 2-year/24-hour storm.
12. ☐ An alternative design standard is being used.
13. ☒ A printout of DEP's PCSM Spreadsheet – Volume Worksheet is attached.
14. 2-Year/24-Hour Storm Event: **3.28** inches Source of precipitation data: **NOAA**
15. Stormwater Runoff Volume, Pre-Construction Conditions: **23,442** CF ☒ Calculations attached
16. Stormwater Runoff Volume, Post-Construction Conditions: **31,090** CF ☒ Calculations attached
17. Net Change (Post-Construction – Pre-Construction Volumes): **7,648** CF
18. Identify all selected structural PCSM BMPs and provide the information requested. ☒ Calculations attached

DP No.	BMP ID	Series	Vol. Routed to BMP (CF)	Inf. Area (SF)	Inf. Rate (in/hr)	Inf. Period (hrs)	Veg?	Media Depth (ft)	Storage Vol. (CF)	Inf. Credit (CF)	ET Credit (CF)
002	2	n/a	11,879	9,017	0.57	22	☐	1	3,341	7,967	
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				
							☐				

Total Infiltration & ET Credits (CF): **7,967**

Non-Structural BMP Volume Credits (CF) (Attach Calculations):

Managed Release Credits (CF) (Attach MRC Design Summary):

Volume Required to Reduce/Manage (CF): **7,648**

Total Credits (CF): **7,967**

INFILTRATION INFORMATION	
BMP ID: 2	☒ Soil/geologic test results are attached.
1. No. of infiltration tests completed: **6**	
2. Method(s) used for infiltration testing: **double ring infiltrometer**	
3. Test Pit Identifiers (from PCSM Plan Drawings): **DR-101A, DR-101B, DR-102A, DR-102B, DR-103A, DR-103B**	
4. Avg Infiltration Rate: **1.132** in/hr	5. FOS: **2** : 1
6. Infiltration rate used for design: **0.57** in/hr	
7. Separation distance between the BMP bottom and bedrock: **>2** feet	
8. Separation distance between the BMP bottom and seasonal high-water table: **>2** feet	
9. Comments:	
BMP ID:	☐ Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	
BMP ID:	☐ Soil/geologic test results are attached.
1. No. of infiltration tests completed:	
2. Method(s) used for infiltration testing:	
3. Test Pit Identifiers (from PCSM Plan Drawings):	
4. Avg Infiltration Rate: in/hr	5. FOS: : 1
6. Infiltration Rate Used for Design: in/hr	
7. Separation distance between the BMP bottom and bedrock: feet	
8. Separation distance between the BMP bottom and seasonal high-water table: feet	
9. Comments:	

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: **UNT to Wissahickon Creek** **Discharge Point(s):** **001**

1. ☐ The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.
2. ☒ The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.
3. ☐ An alternative design standard is being used.
4. ☐ A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.
5. ☒ Alternative rate calculations are attached.
6. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	3.28	10-Year/24-Hour Storm	4.83
50-Year/24-Hour Storm:	6.72	100-Year/24-Hour Storm	7.65

7. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	14.84	13.73	-1.11
10-Year/24-Hour	23.83	22.25	-1.58
50-Year/24-Hour	34.68	32.56	-2.12
100-Year/24-Hour	39.98	37.59	-2.39

8. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr

9. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	14.84	13.73	-1.11
10-Year/24-Hour	23.83	22.25	-1.58
50-Year/24-Hour	34.68	32.56	-2.12
100-Year/24-Hour	39.98	37.59	-2.39

STORMWATER ANALYSIS – PEAK RATE

Surface Water Name: **UNT to Wissahickon Creek** **Discharge Point(s):** **002**

10. ☐ The design standard is based on rate requirements in an Act 167 Plan approved by DEP within the past five years.

11. ☒ The design standard is based on managing the net change for 2-, 10-, 50-, and 100-year/24-hour storms.

12. ☐ An alternative design standard is being used.

13. ☐ A printout of DEP's PCSM Spreadsheet – Rate Worksheet is attached.

14. ☒ Alternative rate calculations are attached.

15. Identify precipitation amounts. Source of precipitation data: NOAA

2-Year/24-Hour Storm:	3.28	10-Year/24-Hour Storm	4.83
50-Year/24-Hour Storm:	6.72	100-Year/24-Hour Storm	7.65

16. Report peak discharge rates, pre- and post-construction (without BMPs), based on a time of concentration analysis.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (cfs)	Difference (cfs)
2-Year/24-Hour	14.83	17.110	2.28
10-Year/24-Hour	23.94	27.265	3.325
50-Year/24-Hour	34.95	39.53	4.58
100-Year/24-Hour	40.33	45.52	5.19

17. Identify all BMPs used to mitigate peak rate differences and provide the requested information.

BMP ID	Inflow to BMP (cfs)				Outflow from BMP (cfs)			
	2-Yr	10-Yr	50-Yr	100-Yr	2-Yr	10-Yr	50-Yr	100-Yr
2	4.890	7.545	10.74	12.31	0.378	2.332	3.846	4.447

18. Report peak rates for pre-construction and post-construction with BMPs and identify the differences.

Design Storm	Pre-Construction Peak Rate (cfs)	Post-Construction Peak Rate (with BMPs) (cfs)	Difference (cfs)
2-Year/24-Hour	14.83	12.42	-2.41
10-Year/24-Hour	23.94	22.02	-1.92
50-Year/24-Hour	34.95	32.63	-2.32
100-Year/24-Hour	40.33	37.66	-2.67

STORMWATER ANALYSIS – WATER QUALITY

☒ A printout of DEP's PCSM Spreadsheet – Quality Worksheet is attached for all surface waters receiving discharges.

LONG-TERM O&M

Describe the long-term operation and maintenance (O&M) requirements for each selected PCSM BMP.

BMP ID	O&M Requirements
1	**Inspect and clean sump with snouts at least twice annually and after each storm event of 2 yr or greater frequency. Please refer to operation and maintenance notes on the PCSM Plan.**
2	**All strucutres associated with system must be inspected and cleaned at least two (2) times per year. Sedment removed from the subsurface system shall be desposed of in landscaped areas outside of steep slopes, wetlands, floodplains, or drainage swales, and immediately stabilized, or placed in topsoil stockpiles. Refer to Detention/Infiltration Basin operation and maintenance notes on the PCSM Plan.**

PCSM PLAN DEVELOPER

☒ I am trained and experienced in PCSM methods.

☒ I am a licensed professional.

Name:	**Justin Q. Massie**	Title:	**Project Designer**
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License Type:	**Professional Engineer**	Exp. Date	**9/30/23**

Justin Q. Massie
PCSM Plan Developer Signature

5-24-2023
Date