

3. <input type="checkbox"/> Plan drawings have been developed for the project and will be available on-site.
4. <input checked="" type="checkbox"/> Plan drawings have been developed for the project and are attached to the NOI/application.
5. <input checked="" type="checkbox"/> 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. There are no known naturally occurring formations or soil conditions that have the potential to cause pollution during earth disturbance activities.
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. There is a potential for thermal impacts to surface waters in instances where surface runoff is directly conveyed to a receiving stream without adequate attenuation or cooling. To avoid thermal impacts, the following measures are proposed in the post-construction conditions: a Bioretention Basin, shading from proposed landscaping, and conveyance of stormwater via underground pipes. These measures will help to control runoff volume and peak rate thereby providing additional cooling time or provide shading of runoff and thereby minimizing thermal impactst to the receiving stream.
8. <input checked="" type="checkbox"/> The PCSM Plan has been planned, designed, and will be implemented to be consistent with the E&S Plan.
9. <input checked="" type="checkbox"/> A pre-development site characterization has been performed.

STORMWATER ANALYSIS – RUNOFF VOLUME

Surface Water Name: **Tookany 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: **3.30** inches Source of precipitation data: **NOAA Atlas 14, Volume 2, Version 3**
6. Stormwater Runoff Volume, Pre-Construction Conditions: **9,245** CF Calculations attached
7. Stormwater Runoff Volume, Post-Construction Conditions: **20,698** CF Calculations attached
8. Net Change (Post-Construction – Pre-Construction Volumes): **11,454** 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	001	N	18,285	3,971	0.66	43	<input checked="" type="checkbox"/>	4.00	9,273	8,452	3,923
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				
							<input type="checkbox"/>				

Total Infiltration & ET Credits (CF): 12,376

Non-Structural BMP Volume Credits (CF) (Attach Calculations): 0

Managed Release Credits (CF) (Attach MRC Design Summary): 0

Volume Required to Reduce/Manage (CF): 11,454

Total Credits (CF): 12,376

INFILTRATION INFORMATION	
BMP ID: 001	<input checked="" type="checkbox"/> Soil/geologic test results are attached.
1. No. of infiltration tests completed: 2	
2. Method(s) used for infiltration testing: Double-Ring Infiltrometer	
3. Test Pit Identifiers (from PCSM Plan Drawings): TP-5 and TP-6	
4. Avg Infiltration Rate: 1.32 in/hr	5. FOS: 2 : 1
6. Infiltration rate used for design: 0.66 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: Limiting Zones were not encountered at both test pit locations to a depth of 126.4 which is more than 2 feet below the proposed bottom of planting soil elevation of 129.00.	
BMP ID:	<input type="checkbox"/> 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:	<input type="checkbox"/> 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: Tookany 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 Atlas 14, Volume 2, Version 3

2-Year/24-Hour Storm:	3.30	10-Year/24-Hour Storm	4.91
50-Year/24-Hour Storm:	6.90	100-Year/24-Hour Storm	7.90

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	7.15	13.10	+5.95
10-Year/24-Hour	9.28	16.98	+7.70
50-Year/24-Hour	11.01	20.14	+9.13
100-Year/24-Hour	11.66	21.33	+9.67

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
001	10.51	13.65	16.19	17.15	2.08	3.95	5.95	6.69

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	7.15	4.67	-2.48
10-Year/24-Hour	9.28	7.28	-2.00
50-Year/24-Hour	11.01	9.90	-1.11
100-Year/24-Hour	11.66	10.87	-0.79

