



# CUMBERLAND COUNTY CONSERVATION DISTRICT

## PCSM SPREADSHEETS

BMPs in Series

Presented by Mike Lubinsky

*Conserving Natural Resources for Our Future*

# General Information

## General Information

- Instructions
- General**
- Volume
- Rate
- Quality

Project Name:

County:

Project Type:

Area:  acres  
*(In Watershed)*

No. of Post-Construction Discharge Points:

Application Type:

Municipality:

New Project     Minor / Major Amendment

Total Earth Disturbance:  acres  
*(In Watershed)*

Start DP Numbering at:

Discharge Point (DP) No.	Drainage Area (DA) (acres)	Earth Disturbance in DA (acres)	Existing Impervious in DA (acres)	Proposed Impervious in DA (acres)	Receiving Waters	Ch. 93 Class	Structural BMP(s)
001	20.44	19.93	0.00	6.37	Discharge to Non-Surface Waters	EV	Yes
Undetained Areas							

Totals:    20.44    **19.93**



# Volume Management

## Volume Management

Project:

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2-Year / 24-Hour Storm Event (NOAA Atlas 14):  inches
     
 Alternative 2-Year / 24-Hour Storm Event  inches  
 Alternative Source:

Pre-Construction Conditions:      No. Rows: 
     
  Exempt from Meadow in Good Condition   
  Automatically Calculate CN, Ia, Runoff and Volume

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Pervious as Meadow	16.72	B	58	1.448	0.23	13,975

TOTAL (ACRES): 16.72
                         
 TOTAL (CF): 13,975

Post-Construction Conditions:      No. Rows:

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	6.37	B	98	0.041	2.63	60,816
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	14.07	B	61	1.279	0.31	16,015

TOTAL (ACRES): 20.44
                         
 TOTAL (CF): 76,831

IET CHANGE IN VOLUME TO MANAGE (CF): 62,856



# Structural BMPs in Series

Structural BMP Volume Credits:

No. Structural BMPs:

5

Start BMP Numbering at:

1

DP No.	BMP No.	BMP Name	MRC?	Discharge	Incremental BMP DA (acres)	Volume Routed to BMP (CF)	Infiltration / Vegetated Area (SF)	Infiltration Rate (in/hr)	Infiltration Period (hrs)	Vegetated?	Media Depth (ft)	Storage Volume (CF)	Infiltration Credit (CF)	ET Credit (CF)
001	1	Rain Garden / Bioretention	-	to BMP No 2	1.84	6,561	12,987	0.25	72	Yes	0.5	6,561	6,561	0
001	2	Rain Garden / Bioretention	-	Off-Site	6.49	22,343	73,248	0.25	72	Yes	0.5	22,343	22,343	0
001	3	Rain Garden / Bioretention	-	to BMP No 4	5.18	21,954	18,253	0.25	72	Yes	0.5	21,954	21,954	0
001	4	Rain Garden / Bioretention	-	to BMP No 5	2.30	10,069	13,340	0.25	72	Yes	0.5	10,069	10,069	0
001	5	Rain Garden / Bioretention	-	Off-Site	3.82	18,422	11,200	0.25	72	Yes	0.5	18,422	15,120	1,921

Totals: 76,047 1,921

INFILTRATION & ET CREDITS (CF): 77,968

NET CHANGE IN VOLUME TO MANAGE (CF): 62,856

TOTAL CREDITS (CF): 77,968

VOLUME REQUIREMENT SATISFIED



# Structural BMPs in Series

## Rate Control

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### Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):	2.86
NOAA 10-Year 24-Hour Storm Event (in):	4.19
NOAA 50-Year 24-Hour Storm Event (in):	6.1
NOAA 100-Year 24-Hour Storm Event (in):	7.17

Alternative 2-Year 24-Hour Storm Event (in):	2.86
Alternative 10-Year 24-Hour Storm Event (in):	
Alternative 50-Year 24-Hour Storm Event (in):	
Alternative 100-Year 24-Hour Storm Event (in):	

Report Summary of Peak Rates Only

Attach model input and output data or other calculations to support the rates reported below.

	Peak Discharge Rates (cfs)			
	Pre-Construction	Post-Construction	Net Change	
2-Year Storm:	1.11	0.07	-1.04	Rate Control Satisfied
10-Year Storm:	6.00	0.63	-5.37	Rate Control Satisfied
50-Year Storm:	16.75	3.38	-13.37	Rate Control Satisfied
100-Year Storm:	23.69	6.83	-16.86	Rate Control Satisfied



# Structural BMPs in Series

## Water Quality

Project:

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### Pre-Construction Pollutant Loads:

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Pervious as Meadow	Grassland/Herbaceous	16.72	B	13,975	49	0.22	2.30	42.58	0.19	2.01
<b>TOTAL (ACRES):</b>		<b>16.72</b>			<b>TOTALS:</b>			<b>42.58</b>	<b>0.19</b>	<b>2.01</b>

### Post-Construction Pollutant Loads (without BMPs):

Land Cover (from Volume Worksheet)	Land Cover for Water Quality	Area (acres)	Soil Group	Runoff Volume (cf)	Pollutant Conc. (mg/L)			Pollutant Loads (lbs)		
					TSS	TP	TN	TSS	TP	TN
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	6.37	B	60,816	65.00	0.29	2.05	246.84	1.10	7.78
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	14.07	B	16,015	78.00	0.25	1.25	78.00	0.25	1.25
<b>TOTAL (ACRES):</b>		<b>20.44</b>			<b>TOTALS:</b>			<b>324.84</b>	<b>1.35</b>	<b>9.03</b>

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS):

<b>282.26</b>	<b>1.16</b>	<b>7.03</b>
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# Structural BMPs in Series

Characterize Undetained Areas (for Untreated Stormwater)

No. Rows:

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.3	B	61	1.279	0.31	341

Structural BMP Water Quality Credits:

Use default BMP Outflows and Median BMP Outflow Concentrations

DP No.	BMP No.	BMP Name	MRC?	BMP DA (acres)	Vol. Routed to BMP (CF)	Inf. & ET Credits (CF)	Capture & Buffer Credits (CF)	Outflow (CF)	Outflow Conc. (mg/L)			Pollutant Loads (lbs)		
									TSS	TP	TN	TSS	TP	TN
001	1	Rain Garden / Bioretention	-	1.84	6,561	6,561		0	-	-	-	-	-	-
001	2	Rain Garden / Bioretention	-	6.49	22,343	22,343		0	10.00	0.24	1.04	0.00	0.00	0.00
001	3	Rain Garden / Bioretention	-	5.18	21,954	21,954		0	-	-	-	-	-	-
001	4	Rain Garden / Bioretention	-	2.30	10,069	10,069		0	-	-	-	-	-	-
001	5	Rain Garden / Bioretention	-	3.82	18,422	17,041		1,381	10.00	0.24	1.04	0.86	0.02	0.09

	TSS	TP	TN
POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):	0.86	0.02	0.09
POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):	1.66	0.01	0.03
NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):			

NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):	2.53	0.03	0.12
POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):	42.58	0.19	2.01

WATER QUALITY REQUIREMENT SATISFIED

