

General Information

Instructions
General
Volume
Rate
Quality

Project Name: <input style="width: 90%;" type="text" value="Greenway Trail along Chandler Mill Road"/>	Application Type: <input style="width: 90%;" type="text" value="PAG-02 NOI"/>
County: <input style="width: 90%;" type="text" value="Chester"/>	Municipality: <input style="width: 90%;" type="text" value="Kennett Township"/>
Project Type: <input style="width: 90%;" type="text" value="Other"/>	<input checked="" type="radio"/> New Project <input type="radio"/> Minor / Major Amendment
Area: <input style="width: 100px;" type="text" value="10.65"/> acres <i>(In Watershed)</i>	Total Earth Disturbance: <input style="width: 100px;" type="text" value="1.89"/> acres <i>(In Watershed)</i>
No. of Post-Construction Discharge Points: <input style="width: 100px;" type="text" value="1"/>	Start DP Numbering at: <input style="width: 100px;" type="text" value="001"/>

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	1.89	1.89	0.00	0.47	West Branch Red Clay Creek	TSF, MF	Yes
Undetained Areas	0.00	0.00	0.00	0.00			
Totals:	1.89	1.89		0.47			

PROJECT SITE MEETS SMALL SITE EXCEPTION - RATE WORKSHEET NOT REQUIRED

Volume Management

Project: Greenway Trail along Chandler Mill Road

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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	0.00	B	58	1.448	0.33	0
Impervious as Meadow	0.00	B	58	1.448	0.33	1
Pervious as Meadow	0.78	B	58	1.448	0.33	921
Forested (Good Condition)	0.77	B	55	1.636	0.24	664
Pervious as Meadow	0.00	C	71	0.817	0.85	0
Impervious as Meadow	0.00	C	71	0.817	0.85	0
Pervious as Meadow	0.15	C	71	0.817	0.85	450
Forested (Good Condition)	0.02	C	70	0.857	0.80	44
Pervious as Meadow	0.00	D	78	0.564	1.24	0

Impervious as Meadow	0.00	D	78	0.564	1.24	0
Pervious as Meadow	0.10	D	78	0.564	1.24	443
Forested (Good Condition)	0.09	D	77	0.597	1.18	369
TOTAL (ACRES):		1.89	TOTAL (CF):			2,892

Post-Construction Conditions:

No. Rows: 12

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)	0.32	B	98	0.041	2.93	3,358
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	1.08	B	58	1.448	0.33	1,281
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.05	B	61	1.279	0.43	82
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.09	B	61	1.279	0.43	146
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	0.07	C	98	0.041	2.93	691
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	0.08	C	71	0.817	0.85	251
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.02	C	74	0.703	1.01	55
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.00	C	74	0.703	1.01	0
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	0.09	D	98	0.041	2.93	925
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	0.09	D	78	0.564	1.24	397
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.01	D	80	0.500	1.37	40
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	0.00	D	80	0.500	1.37	0

TOTAL (ACRES): 1.89

TOTAL (CF): 7,226

NET CHANGE IN VOLUME TO MANAGE (CF): 4,334

Non-Structural BMP Volume Credits:

Tree Planting Credit

Number of new deciduous trees that will be planted within disturbed area:

Number of new evergreen trees that will be planted within disturbed area:

57

CREDIT (CF):	342
CREDIT (CF):	

Other (attach calculations):

Structural BMP Volume Credits:

No. Structural BMPs: 9

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	Infiltration Bed	-	Off-Site	0.04	388	924	0.75	12	No	1.2	388	388	
001	2	Infiltration Bed	-	Off-Site	0.09	893	840	0.25	53	No	2.7	893	835	
001	3	Infiltration Bed	-	Off-Site	0.06	464	720	0.50	14	No	1.5	432	378	
001	4	Infiltration Bed	-	Off-Site	0.17	1,428	1,350	0.50	29	No	3.0	1,428	1,428	
001	5	Infiltration Bed	-	Off-Site	0.03	226	292	1.00	12	No	2.2	226	226	
001	6	Infiltration Bed	-	Off-Site	0.04	310	435	0.57	17	No	2.0	310	310	
001	7	Infiltration Bed	-	Off-Site	0.03	242	325	0.25	77	No	2.5	242	242	
001	8	Infiltration Bed	-	Off-Site	0.11	897	1,000	0.75	14	No	2.2	897	788	
001	9	Vegetated Swale	-	Off-Site	0.16	554	744	0.00	12	Yes	0.8	0	0	192

Totals: 4,594 192

INFILTRATION & ET CREDITS (CF): 4,786

NET CHANGE IN VOLUME TO MANAGE (CF): 4,334

TOTAL CREDITS (CF): 5,128

VOLUME REQUIREMENT SATISFIED

Rate Control

Project: Greenway Trail along Chandler Mill Road

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SMALL SITE EXCEPTION SATISFIED: RATE CONTROL NOT REQUIRED

Precipitation Amounts:

NOAA 2-Year 24-Hour Storm Event (in):

3.16

Alternative 2-Year 24-Hour Storm Event (in):

NOAA 10-Year 24-Hour Storm Event (in):

Alternative 10-Year 24-Hour Storm Event (in):

NOAA 50-Year 24-Hour Storm Event (in):

Alternative 50-Year 24-Hour Storm Event (in):

NOAA 100-Year 24-Hour Storm Event (in):

Alternative 100-Year 24-Hour Storm Event (in):

Report Summary of Peak Rates Only

Time of Concentration (Tc) - Pre-Construction Use Default (0.1 hr)

Time of Concentration (Tc) - Post-Construction Use Default (0.1 hr)

Peak Rate Analysis:

	Pre-Construction	Post-Construction without BMPs
Disturbed Area (mi²)	0.003	0.003
	Runoff Depth (inches)	
2-Year Storm:	0.39	0.80
10-Year Storm:		
50-Year Storm:		

Water Quality

Project: Greenway Trail along Chandler Mill Road

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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	0.00	B	0	48.8	0.22	2.30	0.00	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.00	B	1	48.8	0.22	2.30	0.00	0.00	0.00
Pervious as Meadow	Grassland/Herbaceous	0.78	B	921	48.8	0.22	2.30	2.81	0.01	0.13
Forested (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.77	B	664	45.0	0.13	1.05	1.87	0.01	0.04
Pervious as Meadow	Grassland/Herbaceous	0.00	C	0	48.8	0.22	2.30	0.00	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.00	C	0	48.8	0.22	2.30	0.00	0.00	0.00
Pervious as Meadow	Grassland/Herbaceous	0.15	C	450	48.8	0.22	2.30	1.37	0.01	0.06
Forested (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.02	C	44	45.0	0.13	1.05	0.12	0.00	0.00

Pervious as Meadow	Grassland/Herbaceous	0.00	D	0	48.8	0.22	2.30	0.00	0.00	0.00
Impervious as Meadow	Grassland/Herbaceous	0.00	D	0	48.8	0.22	2.30	0.00	0.00	0.00
Pervious as Meadow	Grassland/Herbaceous	0.10	D	443	48.8	0.22	2.30	1.35	0.01	0.06
Forested (Good Condition)	Deciduous Forest/Evergreen Forest/Mixed Forest	0.09	D	369	45.0	0.13	1.05	1.04	0.00	0.02

TOTAL (ACRES): 1.89

TOTALS: 8.56 0.03 0.33

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	0.32	B	3,358	65.0	0.29	2.05	13.63	0.06	0.43
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	Grassland/Herbaceous	1.08	B	1,281	48.8	0.22	2.30	3.90	0.02	0.18
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.05	B	82	78.0	0.25	1.25	0.40	0.00	0.01
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.09	B	146	78.0	0.25	1.25	0.71	0.00	0.01
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	0.07	C	691	65.0	0.29	2.05	2.80	0.01	0.09
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	Grassland/Herbaceous	0.08	C	251	48.8	0.22	2.30	0.77	0.00	0.04

Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.02	C	55	78.0	0.25	1.25	0.27	0.00	0.00
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.00	C	0	78.0	0.25	1.25	0.00	0.00	0.00
Impervious Areas: Paved Parking Lots, Roofs, Driveways, Etc. (Excluding ROW)	Residential	0.09	D	925	65.0	0.29	2.05	3.75	0.02	0.12
Meadow-Continuous Grass, Protected from Grazing and Generally Mowed for Hay	Grassland/Herbaceous	0.09	D	397	48.8	0.22	2.30	1.21	0.01	0.06
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.01	D	40	78.0	0.25	1.25	0.19	0.00	0.00
Open Space (Lawns, Parks, Golf Courses, Cemeteries, Etc.) - Good Condition (Grass Cover > 75%)	Open Space	0.00	D	0	78.0	0.25	1.25	0.00	0.00	0.00

TOTAL (ACRES): 1.89

TOTALS: 27.64 0.12 0.94

POLLUTANT LOAD REDUCTION REQUIREMENTS (LBS): 19.08 0.09 0.61

Characterize Undetained Areas (for Untreated Stormwater)

Land Cover	Area (acres)	Soil Group	CN	Ia (in)	Q Runoff (in)	Runoff Volume (cf)

Non-Structural BMP Water Quality Credits:

- Pervious Undetained Area Credit
- Other (attach calculations)

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	Infiltration Bed	-	0.04	388	388		0	22.00	0.10	2.38	0.00	0.00	0.00
001	2	Infiltration Bed	-	0.09	893	835		58	22.00	0.10	2.38	0.08	0.00	0.01
001	3	Infiltration Bed	-	0.06	464	378		86	22.00	0.10	2.38	0.12	0.00	0.01
001	4	Infiltration Bed	-	0.17	1,428	1,428		0	22.00	0.10	2.38	0.00	0.00	0.00
001	5	Infiltration Bed	-	0.03	226	226		0	22.00	0.10	2.38	0.00	0.00	0.00
001	6	Infiltration Bed	-	0.04	310	310		0	22.00	0.10	2.38	0.00	0.00	0.00
001	7	Infiltration Bed	-	0.03	242	242		0	22.00	0.10	2.38	0.00	0.00	0.00
001	8	Infiltration Bed	-	0.11	897	788		110	22.00	0.10	2.38	0.15	0.00	0.02
001	9	Vegetated Swale	-	0.16	554	192		362	13.70	0.18	0.63	0.31	0.00	0.01

POLLUTANT LOADS FROM STRUCTURAL BMP (TREATED) OUTFLOWS (LBS):

POLLUTANT LOADS FROM UNTREATED STORMWATER (LBS):

NON-STRUCTURAL BMP WATER QUALITY CREDITS (LBS):

NET POLLUTANT LOADS FROM SITE, POST-CONSTRUCTION (LBS):

POLLUTANT LOADS FROM SITE, PRE-CONSTRUCTION (LBS):

TSS	TP	TN
0.66	0.01	0.05
5.67	0.02	0.19
6.33	0.03	0.24
8.56	0.03	0.33

WATER QUALITY REQUIREMENT SATISFIED

CERTIFICATION

I certify under penalty of law and subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities) that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I further certify that the structure, function, and calculations contained in this spreadsheet have not been modified in comparison to the spreadsheet DEP has posted to its website or, if modifications were made, an explanation of the modifications made is attached to this spreadsheet.

Stephen C. Giampaolo, P.E.

Spreadsheet User Name

8/31/2022

Date