Wisconsin Department of Natural Resources
Bureau of Watershed Management (WT/3)
101 S. Webster Street
PO Box 7921
Madison, WI 53707-7921
dnr.wi.gov

Final Report

Urban Nonpoint Source & Storm Water Construction & Targeted Runoff Management Small-scale Urban TMDL Grant Program

Form 3400-189U (03/16)

NOTICE: This document is required under s. 281.65 & s. 281.66, Wis. Stats., and chs. NR 153, 154, and 155. Wis. Adm. Code. A final project report must be submitted as part of the final reimbursement request. Personally identifiable information contained in this form will be used for determining reimbursement eligibility in the Urban Nonpoint Source & Storm Water and Targeted Runoff Management Grant Programs and will not be used for any other purpose.

INSTRUCTIONS: Send the completed, electronic copy of this form and all attachments to the Department of Natural Resources (DNR) Region Nonpoint Source Coordinator. Please read all instructions prior to completion.

Grant Type

(●) Urban Nonpoint Source Construction ( ) TRM Small-scale Urban TMDL

Project & Location Information

Governmental Unit Name	Grant Number
City of Menomonie	USC17251Y16

Project Name		
Menomonie 17th Street Storm Water Pond		
County	**Watershed Name**	**12-Digit HUC**
Dunn	Wilson Creek	070500071003
Project Contact Name	**Phone Number**	**E-mail Address**
Randy Eide	(715) 232-2207	reide@menomonie-wi.gov

☐ For a project with multiple site locations, an aerial photo map is attached with each site location labeled.

Site Location - 1 — Additional sites may be added to the project by clicking the [+ Loc] button.

Site Name	Nearest Receiving Waterbody
Menomonie 17th Street Storm Water Pond	Lake Menomin

Quarter/Quarter	Quarter	Section	Township	Range	E / W	Latitude	Longitude
NW	SW	25	28	13	W	44.8778	-91.9101

Summary of Results - 1 — Additional BMPs may be added to this site by clicking the [+] button.

Best Management Practice Installed	Surface Area (sq. ft.)	Drainage Area (Acres)	Load Reduction				Total Construction Cost
			TSS %	TSS (tons/yr)	P (lbs/yr)	N (lbs/yr)	
Wet Detention Pond	77,800	167.9	73	5.8	34	27	$349,601

Site Location Attachment - 1

Check the box if the required information for the site is attached:

☒ Photos of pre-and post-implementation of BMP(s)
☒ Load reduction modeling documents
☒ Aerial photo map of site with BMPs labeled
☐ Water quality monitoring results/summary, if applicable

Site Information - 1

Narrative space will expand to fit.

Prior to construction, approximately 170 acres of urban stormwater runoff drained directly to storm sewers which drain to Jarrett Creek and Lake Menomin. Stormwater from this watershed, and others like it, have contributed to the delta that has formed at the mouth of Jarrett Creek.

The newly constructed regional stormwater pond rerouted several storm sewers into the regional pond system. The regional pond system is comprised of a wet detention pond, and an infiltration basin. The regional pond system outlet discharges the treated stormwater back into the existing storm sewer system.

The east side of the pond includes a 5 foot deep wet detention pond. The wet detention pond removes pollutants from the stormwater based upon settling. Treated water from the wet detention pond discharges to the infiltration basin located to the west. The infiltration basin allows the cleaned water to infiltrate into the soil. In large storm events, combination of the wet detention pond and infiltration basin provide reduced peak rate control. The surface area, drainage area, load reduction and total construction cost summary listed above reflects the combination of the wet detention pond and the infiltration basin.

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☐ DNR may use this site as a success story to meet state and federal reporting needs.

Additional Project Information

Narrative space will expand to fit.

Grantee Certification

A responsible government official (authorized signatory) must authorize and date the final report form and submit it electronically to the DNR Regional Nonpoint Source Coordinator.

I certify that, to the best of my knowledge, the project is complete and the information contained in this final report and attachments is correct and true.

Name of Authorized Government Official	Title of Authorized Government Official	Date
Lowell Prange	City Administrator	09/25/2017

For DNR Use Only

☒ Received complete reports with all attachments. ☒ Practices implemented were consistent with the grant agreement.

Comments about this project:

Name of Nonpoint Source Coordinator	Date
Ruth M King	4/21/17

Send the Final Report and attachments to the Community Financial Assistance Grants Manager and to the Runoff Management Grants Coordinator. Keep a printed copy for the Region file.

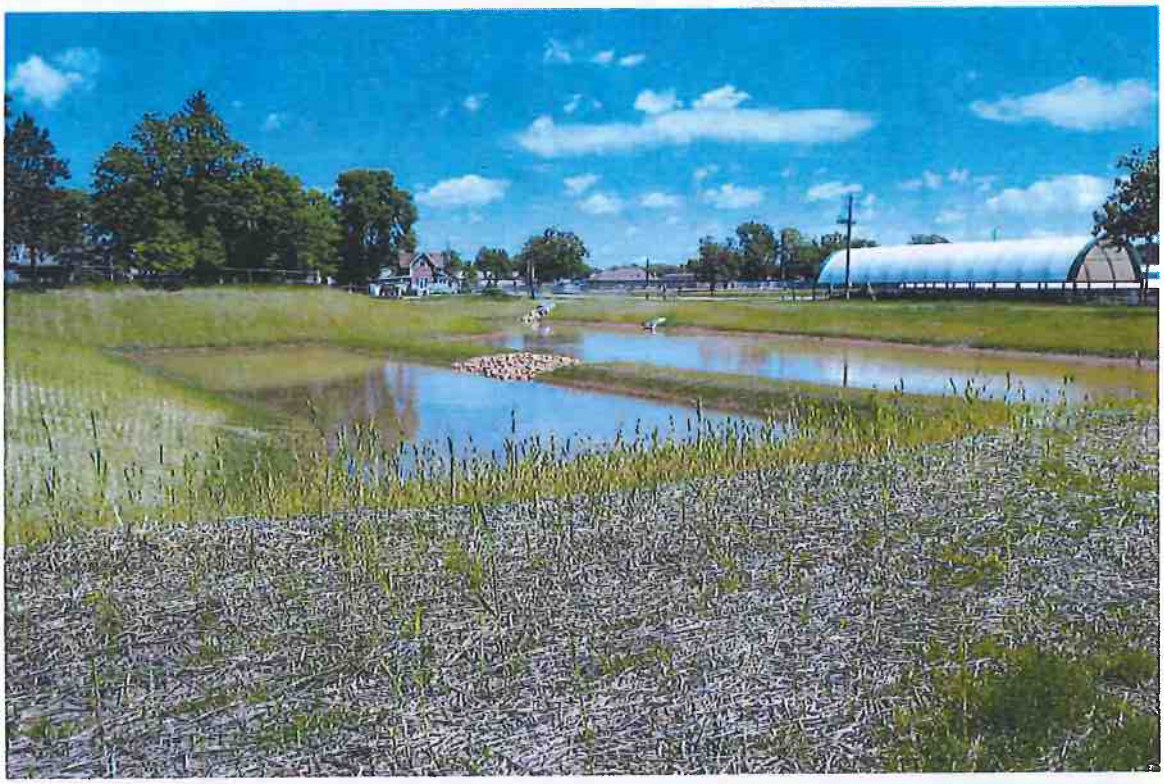
Photos of Pre-and Post-Implementation of BMP(s)

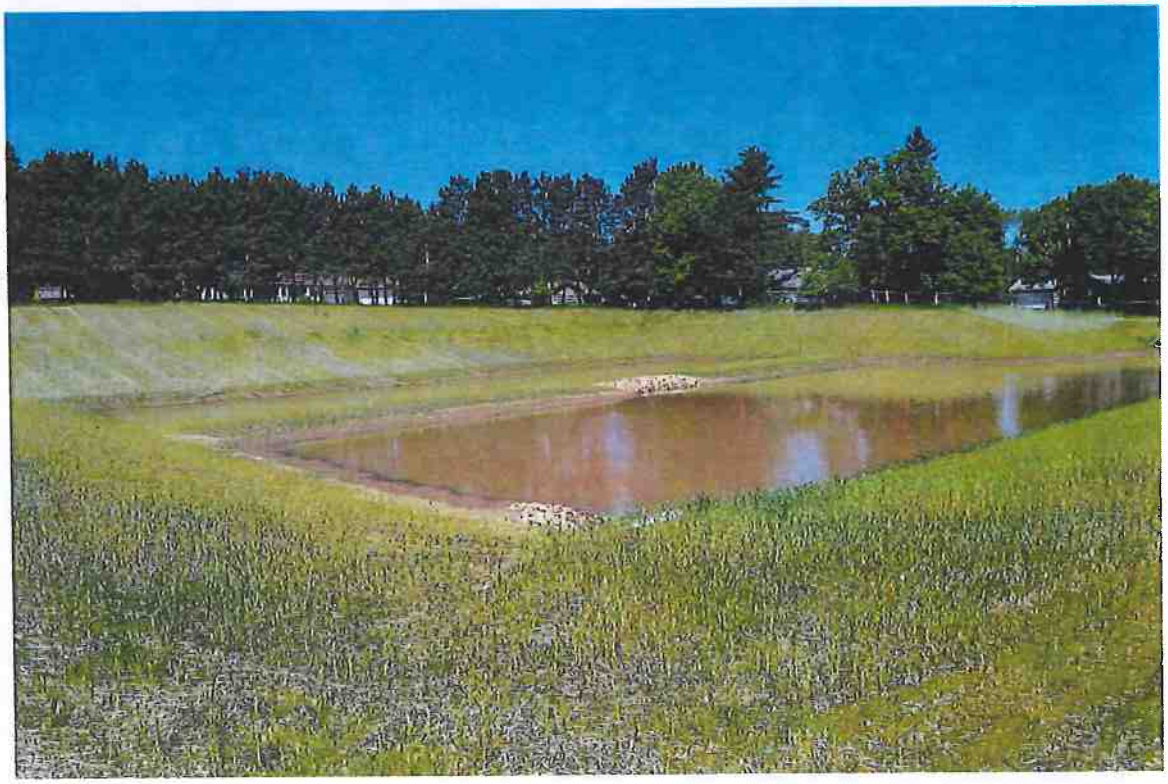
PRE-CONSTRUCTION SITE PHOTOS – City of Menomonie 17th Street Pond

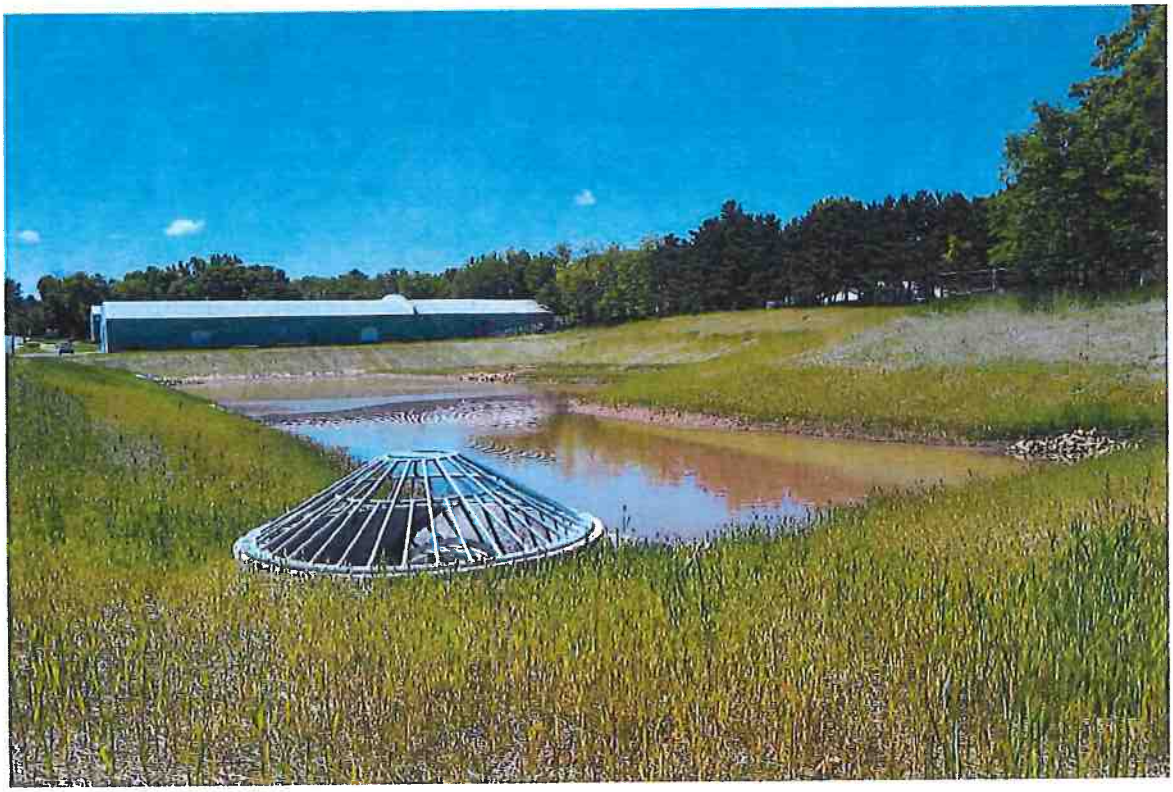

04/25/2014


04/25/2014

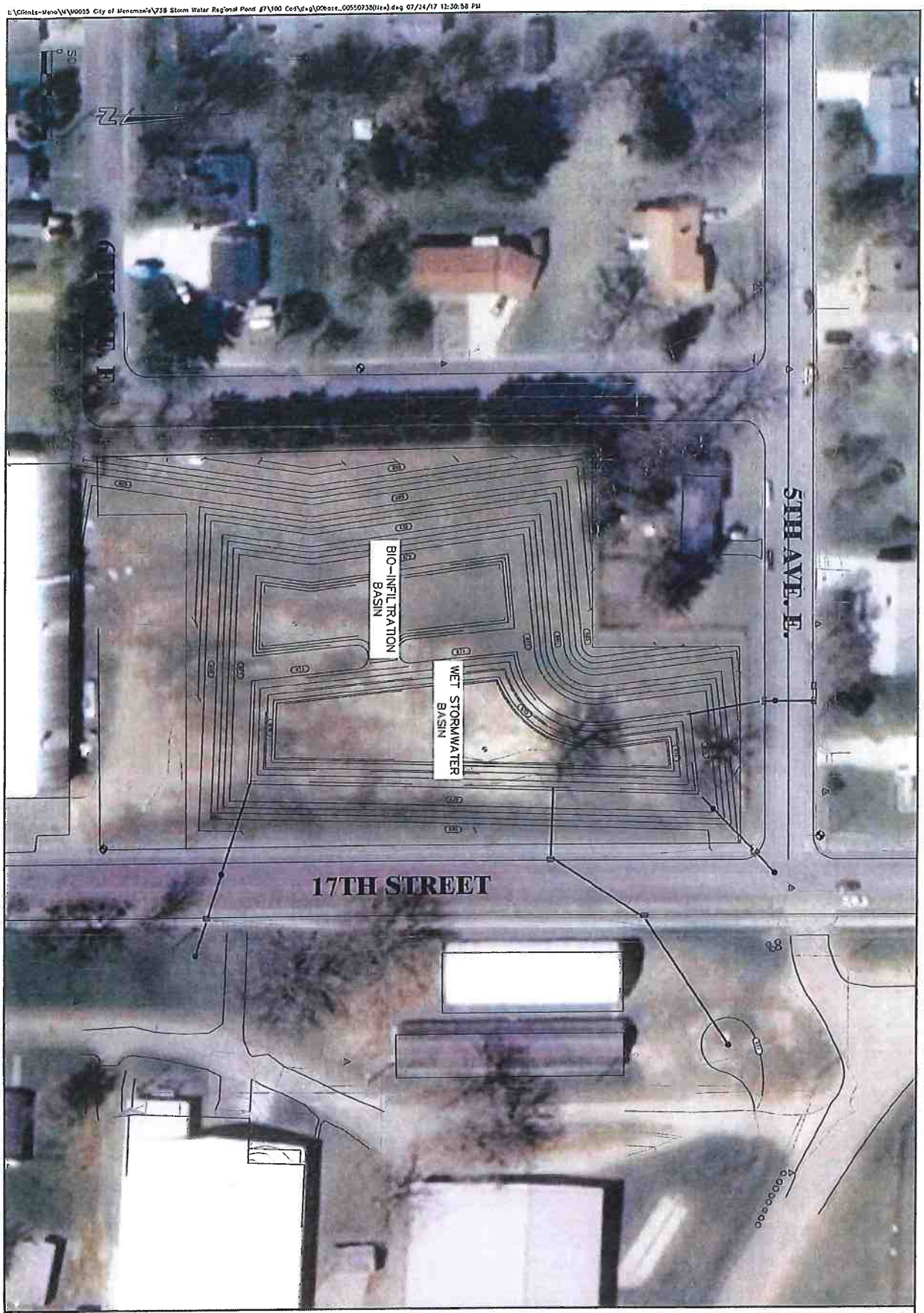
POST-CONSTRUCTION SITE PHOTOS – City of Menomonie 17th Street Pond







Aerial Photo Map of Site with BMPs Labeled



SHEET NO. 1 OF 1

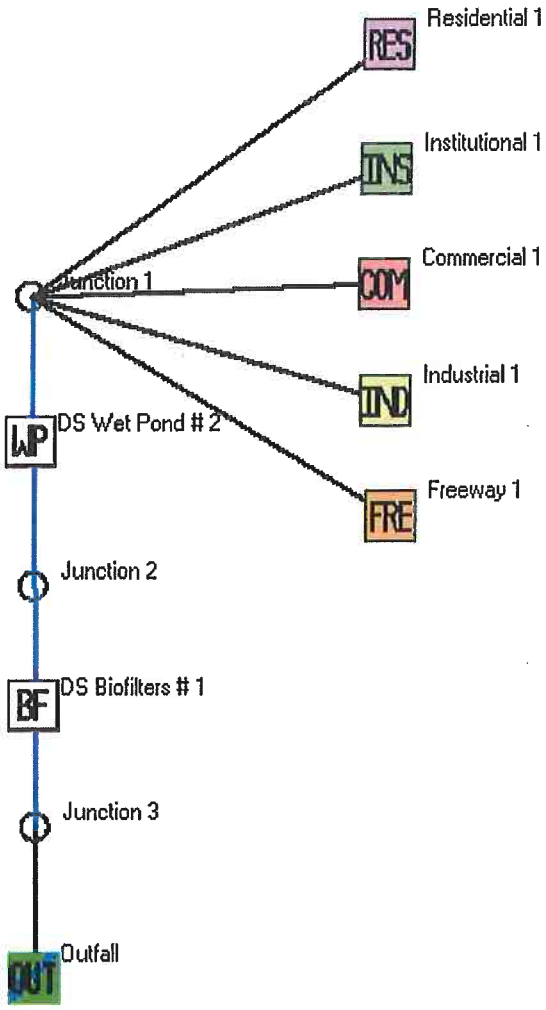
CITY OF MENOMONIE
17TH STREET REGIONAL POND
DUNN COUNTY, WI
AERIAL MAP

Cedar corporation
engineers • architects • planners • environmental specialists
land surveyors • landscape architects • interior designers
800-472-7372
www.cedarcorp.com
604 Wilson Ave. Menomonie, WI 54751 715-235-9081 FAX 715-235-2227
3320 Kelton Commons West Suite 142 Wausau, WI 53719 608-254-0027 FAX 608-249-5824
1695 Bellevue Street Suite 502 Green Bay, WI 54311 920-491-5031 FAX 920-491-5020

JOB NO.	M10055-738
BOOK NO.	
DRAWN BY	ICS
CHECKED BY	
DATE	JULY 2017
REVISIONS	
REFERENCE FILE	
DRAWING FILE	M10055_00550738(fixe).dwg

Load Reduction Modeling Documents

WinSLAMM v10.1 – City of Menomonie – 17th Street Pond – Project Diagram



WinSLAMM v10.1 – City of Menomonie – 17th Street Pond – Output Summary

File Name:

C:\Users\Isaac.Steinmeyer\Desktop\WINSLAMM\20150410_17th street pond prelim WITHBF.mdb

Outfall Output Summary

	Runoff Volume (cu. ft.)	Percent Runoff Reduction	Runoff Coefficient (Rv)	Particulate Solids Conc. (mg/L)	Particulate Solids Yield (lbs)	Percent Particulate Solids Reduction
Total of All Land Uses without Controls	2.321E+06		0.16	109.5	15872	
Outfall Total with Controls	1.232E+06	46.92 %	0.08	55.94	4301	72.90 %
Current File Output: Annualized Total After Outfall Controls	1.929E+06	Years in Model Run:	0.64		6737	

Pollutant	Concentration - No Controls	Concentration - With Controls	Concentration Units	Pollutant Yield - No Controls	Pollutant Yield - With Controls	Pollutant Yield Units	Percent Yield Reduction
Particulate Solids	109.5	55.94	mg/L	15872	4301	lbs	72.90 %
Total Phosphorus	0.3582	0.2377	mg/L	51.89	18.28	lbs	64.78 %
Nitrate	0.3923	0.3866	mg/L	56.83	29.72	lbs	47.70 %

Print Output Summary to Text File

Print Output Summary to .csv File

Total Area Modeled (ac): 167.900

Total Control Practice Costs

Capital Cost	N/A
Land Cost	N/A
Annual Maintenance Cost	N/A
Present Value of All Costs	N/A
Annualized Value of All Costs	N/A

Perform Outfall Flow Duration Curve Calculations

Receiving Water Impacts Due To Stormwater Runoff

(CWP Impervious Cover Model)

	Calculated Rv	Approximate Urban Stream Classification
Without Controls	0.16	Poor
With Controls	0.08	Good

WinSLAMM v10.1 – City of Menomonie – 17th Street Pond – Input Data

Data file name: C:\Users\Isaac.Steinmeyer\Desktop\WINSLAMM\20150410_17th street pond prelim WITHBF.mdb
WinSLAMM Version 10.2.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Minneapolis MN 1959.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 03/13/59 Study period ending date: 11/04/59
Start of Winter Season: 11/04 End of Winter Season: 03/13
Date: 07-24-2017 Time: 11:05:09
Site information:
test
LU# 1 - Residential: Residential 1 Total area (ac): 138.710
1 - Roofs 1: 5.260 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
13 - Paved Parking 1: 2.660 ac. Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
31 - Sidewalks 1: 0.660 ac. Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
37 - Streets 1: 6.390 ac. Smooth Street Length = 2.929 curb-mi Street Width (assuming two curb-mi per street mile) = 35.99693 ft
Default St. Dirt Accum. Annual Winter Load = 2500 lbs Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
45 - Large Landscaped Areas 1: 48.030 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
57 - Undeveloped Areas 1: 75.710 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz

LU# 2 - Institutional: Institutional 1 Total area (ac): 28.800
1 - Roofs 1: 4.740 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
13 - Paved Parking 1: 5.470 ac. Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
19 - Unpaved Parking 1: 7.840 ac. Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
45 - Large Landscaped Areas 1: 9.970 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
57 - Undeveloped Areas 1: 0.780 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz

LU# 3 - Commercial: Commercial 1 Total area (ac): 0.370
1 - Roofs 1: 0.090 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
19 - Unpaved Parking 1: 0.150 ac. Connected Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz
45 - Large Landscaped Areas 1: 0.130 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz

LU# 4 - Industrial: Industrial 1 Total area (ac): 0.010
57 - Undeveloped Areas 1: 0.010 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz

LU# 5 - Freeway: Freeway 1 Total area (ac): 0.010
22 - Undeveloped Areas 1: 0.010 ac. Normal Sandy Source Area PSD File: C:\WinSLAMM Files\\NURP.cpz

Control Practice 1: Wet Detention Pond CP# 1 (DS) - DS Wet Pond # 2
Particle Size Distribution file name: Not needed - calculated by program
Initial stage elevation (ft): 5
Peak to Average Flow Ratio: 3.8
Maximum flow allowed into pond (cfs): No maximum value entered
Outlet Characteristics:
Outlet type: Broad Crested Weir
1. Weir crest length (ft): 16
2. Weir crest width (ft): 5
3. Height from datum to bottom of weir opening: 5
Pond stage and surface area

Entry Number	Stage (ft)	Pond Area (acres)	Natural Seepage (in/hr)	Other Outflow (cfs)
0	0.00	0.0000	0.00	0.00
1	0.01	0.2030	0.00	0.00
2	0.50	0.2169	0.00	0.00
3	1.50	0.2453	0.00	0.00
4	2.50	0.2744	0.00	0.00
5	3.50	0.3044	0.00	0.00
6	4.00	0.3196	0.00	0.00
7	4.50	0.3825	0.00	0.00
8	5.00	0.4485	0.00	0.00
9	5.50	0.5050	0.00	0.00
10	6.50	0.6160	0.00	0.00
11	7.50	0.7300	0.00	0.00
12	8.50	0.8190	0.00	0.00
13	9.50	0.9110	0.00	0.00
14	10.50	1.0070	0.00	0.00
15	11.50	1.1050	0.00	0.00
16	12.50	1.2070	0.00	0.00

Control Practice 2: Biofilter CP# 1 (DS) - DS Biofilters # 1

1. Top area (square feet) = 7781
2. Bottom aea (square feet) = 5809
3. Depth (ft): 8.5
4. Biofilter width (ft) - for Cost Purposes Only: 45.8
5. Infiltration rate (in/hr) = 3.6
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 1 - ok if sandy soil
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 0
10. Porosity of rock filled volume = 0
11. Engineered soil infiltration rate: 0
12. Engineered soil depth (ft) = 0
13. Engineered soil porosity = 0
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7.5

Outlet type: Surface Discharge Pipe

1. Surface discharge pipe outlet diameter (ft): 3.5
2. Pipe invert elevation above datum (ft): 2
3. Number of surface pipe outlets: 1