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 (R 11/18)

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

Grant Information

Grantee - Governmental Unit Name		Grant Number
Garners Creek Storm Water Utility		USC44901Y17
Project Name		
Buchanan Road Stream Restoration		
Project Contact Name	Phone Number	E-mail Address
Racquel Shampo-Giese	(920) 788-7740	gieser@combinedlocks.org

Site 1 - Location & Watershed Information

Additional sites may be added to the project by clicking on the [+Loc] button

Site Name		Latitude	Longitude
Buchanan Road Stream Restoration		44.2536	-88.3063
County	12-Digit HUC	12-Digit Watershed Name	
Outagamie	040302040205	Garners Creek-Fox River	
Nearest Receiving Waterbody		Primary Waterbody addressed by project	
Garners Creek		Garners Creek	

Site 1 - BMP & Load Reduction Information

Additional BMPs for this site may be added by clicking on the [+] button

Best Management Practice(s) Installed	Surface Area (sq ft) or Length of shoreline (ft)	Drainage Area Served (acres)	Load Reduction Achieved				Total Cost (BMP + Ancillary Activities)
			TSS (% red)	TSS (lbs/yr)	P (lbs/yr)	N (lbs/yr)	
Streambank or Shoreline Protection [NR 154.04(3		1,425	84	34	41		$254,163

Model(s)/Methods Used to Calculate Load Reduction (check all that apply)

☐ STEPL ☐ SLAMM ☐ P8 ☒ NRCS Bank Erosion Formula ☐ Other (specify) _____

Site 1 - Required Attachments:

Additional BMPs for this site may be added by clicking on the [+] button

Required Attachments - Check the boxes below if the required information for the site is attached:

☒ Photos of site, pre-and post- BMP implementation.
☒ Load reduction modeling documents.
☒ Aerial photo map of site with BMPs labeled.
☐ Operation & maintenance plan for each BMP.
☒ Documentation showing that one of the following is true (select the true statement):

- ( ) The application owns the property.
- ( ) The applicant has control of the property through an easement.
- (●) The applicant has control of the property through a construction and maintenance agreement.

☐ Water quality monitoring results summary, if applicable.

Site 1 - Information

Additional BMPs for this site may be added by clicking on the [+] button

Narrative space will expand to fit.

The project included restoring approximately 370 lineal feet of streambank and three significant steep slope failures adjacent to the creek. Restoration activities included a slight realignment of the creek to restore the steep slope failures, re-grading of channel banks, rip-rap bank protection, a root wad revetment, LUNKER structures, log vanes and a brush mattress. The original design included installing a by-pass culvert to divert creek flows around the work area. However, the contractor was able to complete the project using by-pass pumping rather than installing the temporary culvert. This minimized the overall limits of land disturbance and wetland impacts. Overall, the project went smoothly and was an overall success.

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

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Additional Project

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
Racquel Shampo-Giese	Administrator/Clerk/Treasurer	02/27/2019

For DNR Use Only

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

Comments about this project:

Completed on-site inspection on 7/24/18.

Name of Region Nonpoint Source Coordinator	Date
Eric Evensen	4/1/19

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

Client: Garners Creek Storm Water Utility
Project: Buchanan Road Stream Restoration
McM No: G0035-9-15-00538.12
Date: July 24, 2018

McMAHON ENGINEERS ARCHITECTS

EXISTING CONDITION - SEDIMENT LOADINGS

NRCS Streambank Erosion Estimator
Direct Volume Method

Location	Eroding Bank Length (ft)	Vertical Height of Bank (ft)	Horizontal Length of Bank (ft)	Eroding Bank Height [1] (ft)	Area of Eroding Streambank (ft^2)	Lateral Recession Rate [2] (ft/yr)	Estimated Volume Eroded Annually (ft^3)	Soil Texture	Volume - Weight Conversion (lbs/ft^3) [3]	Estimated Soil Loss (tons/yr)
Area 1	300	8.0	8.0	11.3	3,394	0.30	1,018.2	Clay	65	33.1
Area 2	70	8.0	8.0	11.3	792	0.30	237.6	Clay	65	7.7
									Total Estimated Annual Streambank Erosion Soil Loss (Tons):	**40.8**
									[4] Total Estimated Annual Streambank Erosion TP Loss (lbs):	**49.0**

[1] User to input the vertical height and horizontal length based on topographic survey
[2] User to select appropriate Lateral Recession Rate using Table 1
[3] User to select appropriate Volume - Weight Conversion using Table 2
[4] Assumed 1.2 lbs TP / ton of soil loss (Franklin & Marshall College, Sediment & Nutrient Loads form Stream Corridor Erosion along Breached Millponds)

PROPOSED CONDITION - SEDIMENT LOADINGS

NRCS Streambank Erosion Estimator
Direct Volume Method

Location	Eroding Bank Length (ft)	Vertical Height of Bank (ft)	Horizontal Length of Bank (ft)	Eroding Bank Height [1] (ft)	Area of Eroding Streambank (ft^2)	Lateral Recession Rate [2] (ft/yr)	Estimated Volume Eroded Annually (ft^3)	Soil Texture	Volume - Weight Conversion (lbs/ft^3) [3]	Estimated Soil Loss (tons/yr)
Area 1	300	8.0	16.0	17.9	5,367	0.03	161.0	Clay	65	5.2
Area 2	70	8.0	16.0	17.9	1,252	0.03	37.6	Clay	65	1.2
									Total Estimated Annual Streambank Erosion Soil Loss (Tons):	**6.5**
									[4] Total Estimated Annual Streambank Erosion TP Loss (lbs):	**7.7**

Total Reduction of Soil Loss (Tons): **34.4** ***Total Reduction of TP Loss (lbs):*** **41.2**
Total Reduction of Soil Loss (%): **84.2%** ***Total Reduction of TP Loss (%):*** **84.2%**

Table 1

Lateral Recession Rate (ft/yr)	Category	Description
0.01 - 0.05	Slight	Some bare bank but active erosion not readily apparent. Some rills but no vegetative overhang. No exposed tree roots.
0.06 - 0.2	Moderate	Bank is predominantly bare with some rills and vegetative overhang. Some exposed tree roots but no slumps or slips
0.3 - 0.5	Severe	Bank is bare with rills and severe vegetative overhang. Many exposed tree roots and some fallen trees and slumps or slips. Some changes in cultural features such as fence corners missiong and realignment of roads or trails. Channel cross section becomes U-shaped as opposed to V-shaped.
0.5+	Very Severe	Bank is bare with gullies and severe vegetative overhang. Many fallen trees, drains and culverts eroding out and changes in cultural features as above. Massive slips or washouts common. Channel cross section is U-shaped and stream course may be meandering.

Table 2

Soil Texture	Volume-Weight (pcf)
Clay	60-70
Silt	75-90
Sand	90-110
Gravel	110-120
Loam	80-100
Sandy Loam	90-110
Gravelly Loam	110-120