

## Final Report

Targeted Runoff Management Grant Program and Urban Nonpoint  
Source and Storm Water Management Grant Program

Form 3400-189 (R 11/05)

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Notice: This final report is authorized by ss. 281.05 and 281.06, Wis. Stats., and chs. NR 153 and NR 155, Wis. Adm. Code. Personally identifiable information collected will be used for program administration and may be made available to requesters as required under Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

**Instructions: The grant agreement requires grantees to submit a Final Report 60 days after the end date listed in the grant agreement. This Final Report form must be used in conjunction with the "FINAL REPORT INSTRUCTIONS." The instructions detail how to complete and submit the report to DNR.**

### 1. Grant Type

- ☐ Agricultural - Targeted Runoff Management Grant
- ☐ Urban - Targeted Runoff Management Grant
- ☐ Construction - Urban Nonpoint Source & Storm Water Management Grant
- ☒ Planning - Urban Nonpoint Source & Storm Water Management Grant

### 2. Grantee & Project Information

Project Name <b>Stormwater Management Planning And Utility Development</b>	Grant Number <b>USP-LR10-13181-06</b>
Governmental Unit Name <b>Shorewood Hills</b>	Governmental Unit Type (city, village, town, etc.) <b>Village</b>
Watershed Name <b>Six Mile and Pheasant Branch Creeks (Lake Mendota)</b>	Watershed Code <b>LR10-012</b>
DNR Water Management Unit (River System) Name <b>Lower Rock</b>	Water Body Identification Code (WBIC) (if applicable) <b>805400</b>

s. 303(d) Waterbody? ☒ Yes ☐ No

What pollutant(s) were addressed by the project?

**Total Suspended Solids**

For each project site location provide the following: (attach additional sheets if necessary)

Location:		A	B	C	D	E
Minor Civil Division Name						
PLSS	Town	<b>7</b>				
	Range	<b>9E</b>				
	Section	<b>16, 17</b>				
	Quarter					
	Quarter-Quarter					
Latitude		<b>43° 4' 46" N</b>				
Longitude		<b>89° 26' 37" W</b>				
Property Owner(s)	Name	<b>Village of Shorewood Hills</b>				
	Mailing address	<b>810 Shorewood Boulevard, Madison WI, 53705</b>				
Site address (if different than mailing address)						

### 3. Summary of Results

#### A. Performance Standards and Prohibitions and Other Water Resources Management Priorities

For grants issued in calendar year 2006 or later, complete Tables A and B (following) consistent with the entries on your grant application.  
For grants issued prior to calendar year 2006, complete Tables A and B, *to the best of your knowledge*, consistent with the entries on your grant application.

**Table A.** Performance Standards and Prohibitions (per ch. NR 151, Wis. Adm. Code, effective October 1, 2002)

Performance Standard or Prohibition	Units of Measure	Quantity	Measurement Method Used
Sheet, rill and wind erosion	Acres meeting T		
Manure Storage Facilities: New Construction/Alterations	Number of facilities		
	Number of animal units		
Manure Storage Facilities: Closure	Number of facilities		
Manure Storage Facilities: Failing/Leaking Facilities	Number of facilities		
	Number of animal units		
Clean Water Diversions in WQMA	Pollutant load reduction		
	Number of farms with diversions		
	Number animal units		
Nutrient Management on Agricultural Land	Acres planned		
Prohibition: Manure Storage Overflow	Number of facilities		
	Number of animal units		
Prohibition: Unconfined Manure Pile in WQMA	Number of farms		
Prohibition: Direct Runoff From Feedlot/Stored Manure	Pollutant load reduction		
	Number of facilities		
	Number of animal units		
Prohibition: Unlimited Livestock Access	Feet of bank protected		
	Number of farms		
Urban: 20-40% Reduction in Total Suspended Solids (TSS)	Pounds TSS reduced	<b>24400</b>	
	% TSS reduction	<b>20</b>	

**Table B.** Other Water Resources Management Priorities

I. Agricultural Areas	Units of Measure	Quantity	Measurement Method Used
Buffers	Feet of bank protected		
	Number of farms		
Streambank	Tons of bank erosion reduced		
	Feet of bank protected		
Other (specify)			
II. Developed Urban Areas	Units of Measure	Quantity	Measurement Method Used
Urban: 20-40% Reduction in TSS	Pounds TSS reduced	<b>24,400</b>	<b>SLAMM Modeling</b>
	% TSS reduction	<b>20</b>	<b>SLAMM Modeling</b>
Infiltration	% Pre-development stay-on volume		
	Cubic feet stay-on volume		
Peak flow discharge	Change in cubic feet per second		
Protective areas	Feet of bank protected		
Fueling & maintenance areas	Oily sheen presence		
Streambank	Tons of bank erosion reduced		<b>NRCS Bank Erosion Formula</b>
	Feet of bank protected		<b>Visual assesment/field measurement</b>
Other (specify)			
III. Planning	Units of Measure	Quantity	Measurement Method Used
Quantify how implementation of the planning project decreased storm water impacts on state waters (i.e., storm water plan, I & E plan, etc.)	Municipalities planned for	<b>1</b>	<b>Count</b>
	Acres planned for	<b>507</b>	<b>Count</b>
Document/track progress made in implementing the planning product (i.e., ordinance, utility district evaluation/formation, storm water management plan information & education, etc.)	Municipalities planned for	<b>1</b>	<b>Count</b>
	Acres planned for	<b>507</b>	<b>Count</b>
Other (specify)			



**B. Project Results Narrative**

The purpose of this project was to develop a plan to reduce the amount of nonpoint source pollutants, in particular total suspended solids, discharged to Lake Mendota. Since this plan calls for TSS reduction to be achieved through the construction of biofiltration devices, and multi-chambered treatment trains (MCTTs) its implementation will also reduce the amount of hydrocarbons, metals, and runoff discharged to the Lake, and increase infiltration.

Water quality modeling conducted for this project was done in WinSLAMM. Over 70 water quality BMPs were evaluated, and the implementation of the most cost-effective combination of BMPs will achieve a 20% reduction in the Village's regulated TSS load. Other deliverables/outcomes achieved through the planning process funded by this include:

- Stormwater Utility - Ordinance drafted and adopted; utility created and implemented; current utility charge rate = \$110/ERU; utility is funding implementation of water quality practices and activities recommended by the plan.
- Ordinances - Illicit Discharge Ordinance drafted; Erosion Control and Stormwater Management Ordinance drafted
- Education - Obtained and sent copies of My Fair Lake Brochures to homeowners, along with letter about Village stormwater issues
- Erosion Management - Identified alternatives for reducing soil erosion to Lake Mendota in 3 locations of concern
- Public Involvement - Facilitated four meetings with Village stormwater stakeholder group, and eight meetings with the Village's standing stormwater committee. Meeting participants helped identify possible locations for BMP installations, and indicated the types of practices and program elements that would be acceptable in the Village

**4. Satisfaction of Notice Requirements (if applicable)**

If cost sharing for this project was offered under a formal notice to achieve compliance with performance standards or prohibitions, provide information for each notice in the table below.

Notice Information				Notice Satisfaction Information		
Notice Type	Issue Date	From (Name)	To (Name)	Satisfied?		Date Letter Sent
				Yes	No	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	
				<input type="checkbox"/>	<input type="checkbox"/>	

**5. Summary of Project Challenges**

The biggest challenge faced during the planning process was identifying sufficient locations for potential BMPs. The Village is fully-built out and bounded by the City of Madison to the south and west, UW-Hospital to the east, and Lake Mendota to the north. Thus, available spaces for installing constructed stormwater practices are few in number, and where they exist, are small in size. Many potential locations identified by the consultant and by Village stakeholders proved to be very cost-ineffective due to the high source area to BMP size ratio. Furthermore, the amount of leaves and brush produced by the large number of trees in Village limits the effectiveness of vacuum sweeping as a means of reaching the TSS attenuation target. The Village's heavy tree cover also presented a challenge in the area of stormwater utility creation, since tree leaves made it difficult to accurately measure parcel impervious area from aerial photos.

**6. Additional Information about the Project (optional)**

The Village is applying for a 2009 UNPS Construction Grant to help fund construction of water quality BMPs recommended by the plan.

**7. Planning Product (UNPS&SW - Planning Projects only)**

- ☒ Check here if a printed copy of the planning product (e.g., plans, ordinances, analyses) was sent to your DNR Regional Nonpoint Source Coordinator.

Name of Document	Date(s) effective	Date Submitted to NPS Coordinator
Village of Shorewood Hills Stormwater Quality Master Plan	January 1, 2008	February 29, 2008

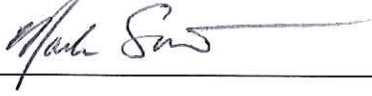
**8. Grantee Certification:**

- ☒ Check here to certify that, to the best of your knowledge, the information contained in this report is correct and true.

Type or print Name and Title of Authorized Representative certifying here.

**Mark Sundquist**

Signature of Authorized Representative



Date

*Feb 22, 2008*