Small Scale Lake Management Planning Grant Report Summary

Project Name:	***Yahara Lakes Beach Bacteria Reduction-Phase 2,***
Project Number	*SPL-213-09*
Reporting Period:	*April 1st2009 – December 31st, 2010*
Agency Reporting:	*Public Health Madison & Dane County (PHMDC)*
Prepared by:	*Kirsti Sorsa*
Phone Number:	*608-243-0356*
E-mail Address:	*ksorsa@publichealthmdc.com*
Project Area:	*Bernies Beach, Madison, Wisconsin.*

The Small Scale Lake Management Planning Grant from the Wisconsin Department of Natural Resources has provided planning support for a conceptual design for management actions aimed at addressing the impairment and to reduce bacterial contamination at impaired beaches. The goal of this project was to develop a strategy for restoration efforts and thus reduce adverse health impacts from recreational exposure at the beaches.

Project Background

Microbial contaminants, including disease-causing enteric pathogens in the Madison area shoreline waters during the peak recreational season are an increasingly visible health and environmental concern. The potential for adverse effects stems from the pathogens' ability to cause water-borne diseases through direct contact and ingestion exposure.

Six beaches on Madison lakes are on EPA's 303 d. Impaired Waters list due to *E. coli* contamination. They are listed for excess *E. coli* bacteria causing the beaches to be periodically closed for swimming. During most summers, around 50 percent of beach closures in Madison are due to high bacteria levels. Non-point source contaminants from urban and agricultural sources entering lakes as storm water runoff, failures in sewage infrastructure, direct contributions from sick swimmers and the waste of urban waterfowl and other wildlife represent possible pathogen sources and cause water quality deterioration in Dane County. Elevated bacteria levels frequently coincide with short-term variability in environmental conditions, such as rainfall, wind intensity and wave height. Disease risk associated with rain/wind storms as well as elevated temperature is thus also increased. The beach bacteria profile in the Yahara Lakes varies significantly between different beaches. Site-specific differences among beaches are caused by different contaminant sources

The Yahara Capitol Lakes Environmental Assessment and Needs (CLEAN) agreement made improving the health of our beaches a priority. The Yahara CLEAN memorandum of

understanding (MOU) established a framework for the management of the Yahara Lakes agreed upon by Dane County, City of Madison and the Departments of Natural Resources and Agriculture, Trade and Consumer Protection. Yahara CLEAN specifically lists bacterial contamination as a major issue impairing public use and enjoyment of the lakes. The MOU lists several actions related to bacterial contamination, including:

- Assessment of contamination causes
- Developing achievable bacteria goals and
- Identification of needs to address contamination

Project Goals and Objectives

The overall purpose was to devise a cost-effective management strategy to target and curb bacterial contamination problems. This project was intended to yield a conceptual design plan that can be used in an implementation project. Implementation of this plan is expected to produce reductions in the bacterial levels at the beach and decrease the number of days during which the beach is closed due to bacterial contamination.

This project identified causes and needs to address bacterial contamination by developing a specific plan for an individual beach that will identify what measures must be implemented to improve bacterial water quality at that beach.

Additionally, this project was expected to provide more comprehensive benefits as a pilot project that can be adapted and used at other beaches, thereby fulfilling the overall goal of reducing bacterial contamination at all Madison beaches. As a pilot project, the project will also act as a tool to increase awareness of bacteria issues and encourage activities that can help reduce bacterial loads to local lakes.

Project Team

Collaborative work with partners from Public Health Madison and Dane County (PHMDC), the City of Madison Engineering, Dane County, University of Wisconsin, Edgewood College, US Geological Survey and members of neighborhood organizations examined the feasibility of management options for improving the health of our beaches. Plans were developed to improve in-lake water quality from the storm water runoff through the beach site.

Project Activities

Ranking/selection process

The project team developed a ranking and selection process to choose one of the nine Madison beaches that were originally listed as impaired for this project. The initial focus of the project was on gathering background data from the nine beaches. Data assessment included completing beach sanitary surveys, including gathering knowledge of the watershed and land-use patterns, such as physical characteristics of the area around the beaches (topography, soils, land use, etc.); and evaluating contaminant levels and probable sources and migration pathways on the basis of historical testing and statistical analysis data and gathering information on the municipal storm water system.

The ranking process considered the relative severity of bacterial contamination at each beach, the complexity of the site, completeness of data for the beach, feasibility of installing remediation measures on-site, and the potential effectiveness of reducing beach bacteria levels.

Summary of criteria for beach selection is included with this report. Assessment included also review of successful remedial projects

We have also gathered additional beach data that resulted in delisting three of the nine of the original beaches on the 303(d) list.

Beach selection

Bernies Beach was selected for the project because elevated bacteria concentrations were primarily and significantly related to rainfall event. Water sampling data collected by the PHMDC and the volunteers have indicated that bacteria levels at this beach correlate with rain events (see attached figures and report by Standridge et. al.). This information on the contaminant source helped in crafting engineering control strategy and management techniques. The storm water conveyance system drains a primarily residential area of approximately 96,000 ft^2. One storm water outfall is located adjacent to the beach and three outfalls are located west from the beach. Bernies Beach selection was also supported because storm water improvement in the immediately surrounding area was physically possible with existing public lands. At most of the other beaches there are no storm water treatment improvements possible without purchase of lands not under public control (i.e. private homes/other property) to provide for small or large scale treatment of the water.

Conceptual engineering plan design

Once the selection process was completed, the project team held extensive planning meetings to discuss feasibility of different bacterial control options. To garner public support and achieve consensus for the local storm water management solutions, input from the neighborhood was solicited. The design thus reflects a partnership focused effort as local stakeholders representative participated in all aspects of the planning. Bioretention (BR) was deemed a feasible solution in the Bernies Beach area (see attached figures). A public, neighborhood meeting was held prior to construction to discuss aspects of this project. The neighborhood was supportive of the project and City Engineering proceeding with implementation.

Since storm water has been identified as a major source of bacterial loading to Bernie's Beach, the plan includes structural best management practices to promote storm water infiltration. The plan includes the conceptual design elements necessary to proceed toward an implementation plan, including the type of measures to be used and general sizing using typical standards.

Plan design considerations

Bioretention is expected to effectively capture and reduce suspended solids, bacteria and nutrient loadings from the drainage shed and to ultimately lead to decrease in beach closings due to elevated bacteria levels. Bioretention also allows for relatively high interception, moderately high infiltration, moderate evaporation, moderately reduced peak flow and increased groundwater recharge. Bioretention functions as a filter to improve water quality of storm water runoff through the processes of adsorption, filtration, volatilization, ion exchange and microbial decomposition. Microbial soil processes of evapotranspiration and nutrient uptake are also affected. Water is treated through the bed component, biological and chemical reactions in soil and root zone and infiltration to underlying soil.

- The grass buffer strip filters particles from the runoff and reduces its velocity.
- The sand bed further slows the velocity, spreads the runoff over the basin, filters part of the water, provides for positive drainage to prevent anaerobic conditions in the planting soil and enhances exfiltration from the basin.

- The ponding area functions as storage of runoff waiting treatment and as a pre-settling basin for particulates that have not been filtered by the grass buffer.
- The organic / mulch layer acts as a filter for pollutants, protects the soil from eroding and provides microbial environment for degradation of contaminants.
- The planting soil nurtures the plants with stored water and nutrients.
- Clay particles in the soil adsorb heavy metal, nutrients, hydrocarbons and other contaminants.
- Plants cycle and assimilate nutrients and contaminants and enhance evapotranspiration.

The following physical / hydrologic items regarding design standards & specifications were considered during the planning:

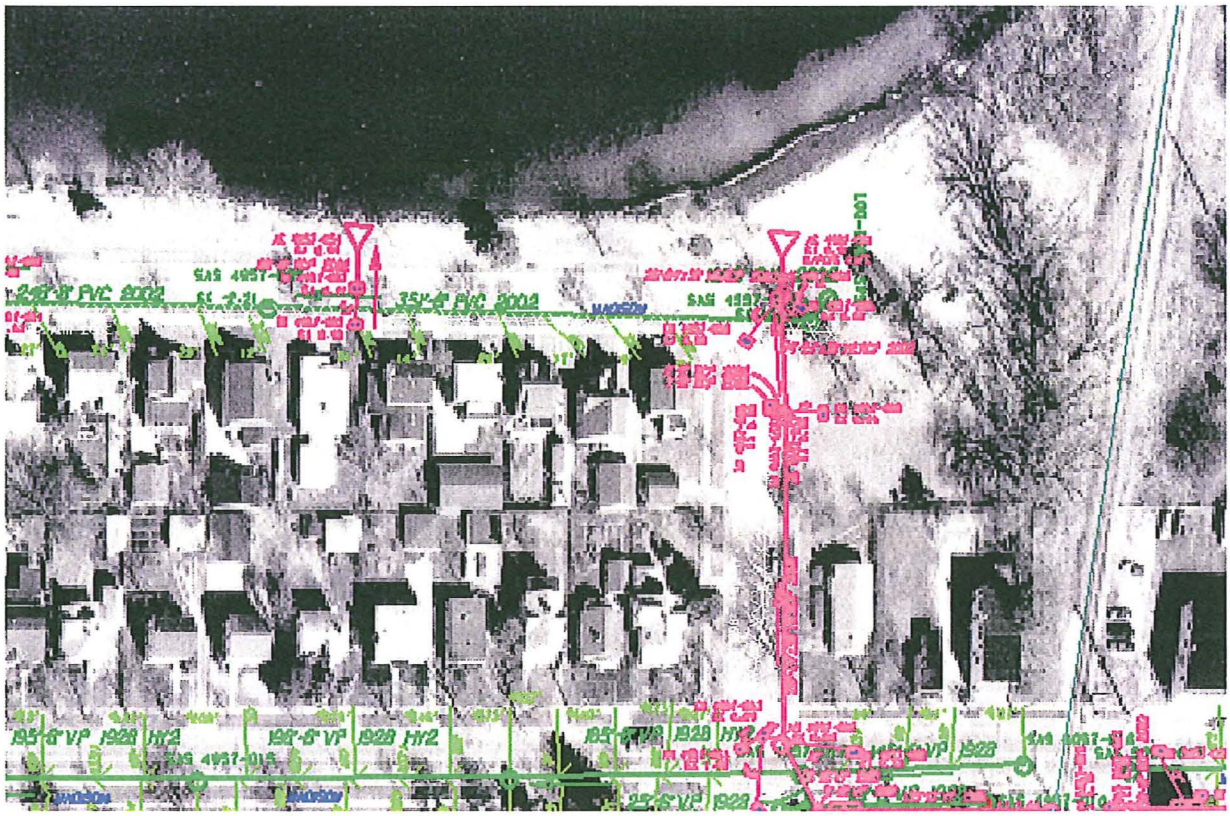
- Contributing drainage area
- Land use (primarily residential)
- Percent impervious cover
- Amount of vegetation cover
- Proper soils (content of clay, sand and gravel) to allow infiltration
- Sizing (minimum width and length) based on drainage ratios
- Grading within the contributing drainage area and the pathway of water passing through the treatment system is important in determining the ability to treat the runoff volume and rate
- Location of inlet / outlets impacting length of flow path and residence time of runoff in the system
- Appropriate elevation of the storm water management structure (inlets / outlets / berm) to avoid excessive ponding near the inlet to prevent development of anaerobic conditions and breeding by mosquitoes or sedimentation
- Aesthetics - blending in with other landscaping of the site
- Depth of groundwater is important to prevent groundwater contamination – the groundwater table must be lower than the depth of the BR structure.

Final Bioretention Design and Construction Plan

A bioretention system was installed at Bernie's Beach to improve water quality discharge and reduce runoff through infiltration. The first step towards ameliorating this situation was to reroute storm water from the nearest outfall to the beach into a bioretention system. The goal of the project was to reduce the quantity and improve quality of storm water runoff discharging to Monona Bay due to the existing outfall's location adjacent to Bernie's Beach.

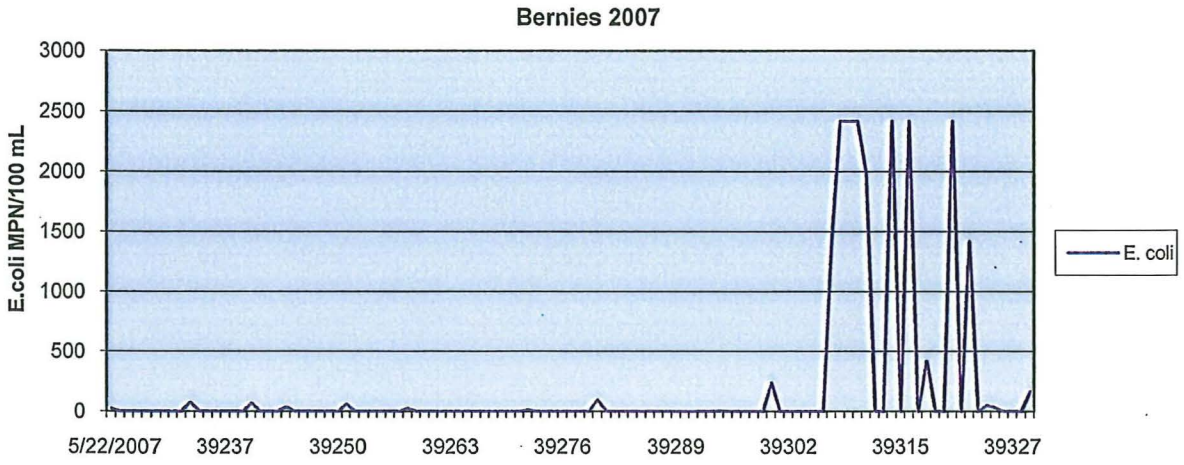
After consulting with the business owner whose property abuts the project area, the bioretention system was planted with native species.

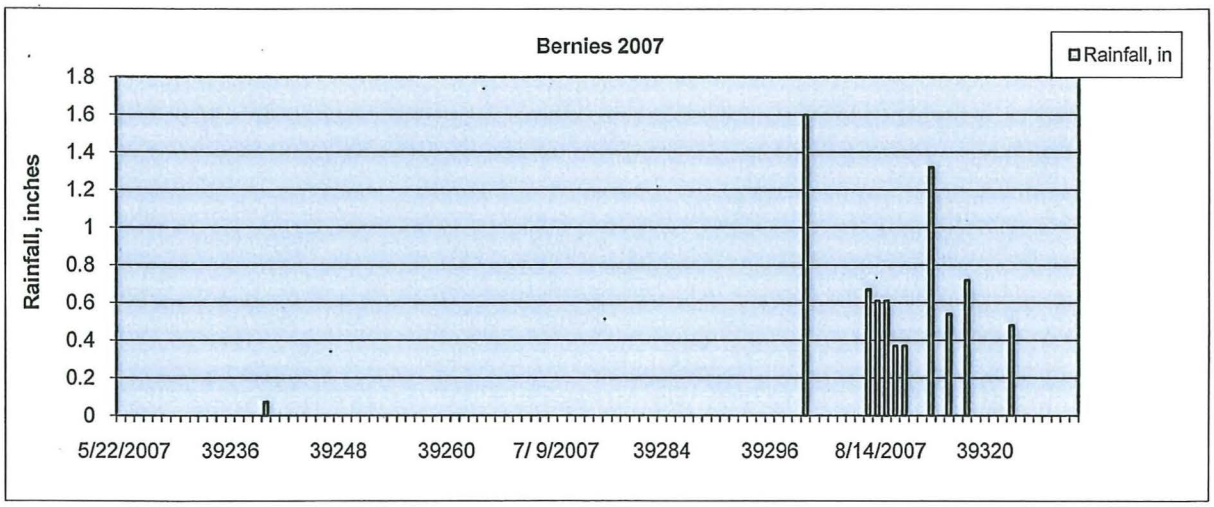
Cost for construction of the bioretention system, including soil borings, construction, permits, and planting labor was $63,965.54. The conceptual design phase cost is included in the item number 90032 BioRetention costruction $6,000 of the Nelson Excavating, LLC Payment document, Total cost for plant material was $4,728.80. Please see attached for the certificate for payment.

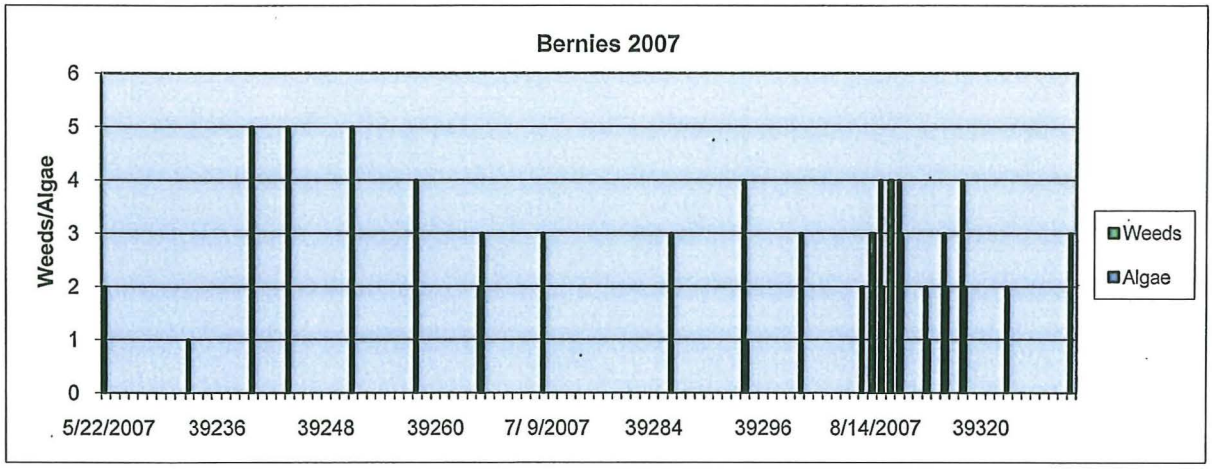


- Sanitary & storm sewer lines

- Green = sanitary
- Pink = storm







Intermittent high peaks associated with weather events (storm runoff, wind erosion and resuspension of lake sediments).

Monona Bay Stormwater Outfall *E. coli* Study

Authors: Jon Standridge, Jim Lorman and Lisie Kitchel

Introduction

Several Madison area beaches have been listed as "impaired" by the United States Environmental Protection Agency through the 303D process. The Clean Water Act, enacted by congress, and as implemented in USEPA regulation 40 CFR Part 130, requires States, territories, and authorized tribes to develop lists of impaired waters that are too polluted or otherwise degraded to meet the water quality standards set by the state. The listing of the Madison beaches was based on the frequent detection of the fecal indicator *E. coli* in beach sample testing. Once a water body has been 303D listed, a requirement is put in place to establish a Total Maximum Daily Load or TMDL. A TMDL, is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet water quality standards. The TMDL requirement is usually met by researching and writing a document describing a plan for reducing the pollutant inputs to a level (or "load") that fully supports the designated uses of the given waterbody. For the Madison beaches , this translates as a plan that will result in significant reduction in *E. coli* levels at the beaches.

Analysis of *E. coli* data from Madison beaches indicates that *E. coli* levels are often elevated immediately following rainfall events. This finding suggests that stormwater entering the lakes via the stormwater collection system may play a role in the beach closings. However little testing of Madison stormwater outfalls has been performed to validate this theory. The exception was a single day in September of 2003 where several samples of stormwater outfalls entering L. Wingra were tested for *E. coli* by the Madison Health department. Dilutions were not made on these samples resulting in most of the data being reported as >2400 *E. coli*/100mL. The intent of the volunteer based study described in this report was to quantify and evaluate *E. coli* levels in Monona Bay stormwater outfalls and to provide a baseline of stormwater *E. coli* levels to be used in future evaluations of *E. coli* mitigation practices that will be put in place as part of the 303D process.

Materials and Methods

Samples: Grab samples were collected during stormwater flow events in sterile, 300 mL plastic bottles which were transported to the laboratory for immediate analysis.

Laboratory: Tests were performed using equipment and facilities provided by Edgewood College. An agreement was established with the college to provide access to the lab during off hours. The *E. coli* test was performed using the USEPA approved IDEXX Colilert/Quanitray method as described in "Standard Methods for the Examination Water and Wastewater".

Volunteers: Jon Standridge, Lisie Kitchel and Jim Lorman participated in the collection and testing of the samples.

Sampling sites: Stormwater outfall sampling sites were chosen just west of Bernie's Beach, at Lowell St., Parr St. and in Brittingham Park at the large concrete outfalls just east of the octagonal park shelter.

Sampling Events:
MARCH 11, 2010.
Light rain began at 10:30AM. Temperature was 45 degree F. This event was a combination of snow melt and rain (.26 inches as reported at the Dane County Airport). The first sampling round began at 11:00 AM and was completed within 30 minutes. Parr St. had significant flow of approximately two inches in depth from the eight inch pipe. Lowell St had minimal flow due to Ice blocking the outfall. Bernie's had a small but steady ¼ inch depth sheet flow from the concrete lip of the outfall pipe. Brittingham had a slow flow from all three outlets. An oil slick and dead fish were noted. A composite sample was taken from in front of each of the three outlets. The rain stopped at about noon, and a second sampling round was begun at 3:20 PM. Flows at all four sampling points were reduced substantially from the morning sampling run.

June 4, 2010.
The rain event on June 4th produced .44 inches of rain as recorded at the Dane county Airport. Flows at the outfalls were similar to those described above for the March 11th sampling event. The rain began at about 6 AM and samples were collected towards the end of the event around 8 AM.

September 11, 2010.
The rain event on September 11th produced .19 inches of rain as recorded at the Dane county Airport. The rain started at about 6:45 AM. Samples were collected near the end of the event at about 7:20 AM. Lake levels were high, and the Bernies Beach and Lowell St. outfalls were submerged. The Parr Street outfall had a strong flow.

Data archiving: All data was compiled and recorded using Excel spreadsheets and backed up via file sharing using email.

Results and Discussion

The data from the four sampling events is presented in the table below. As a point of reference, raw sewage usually has *E. coli* levels of about 1,000,000/100 mL. Federal guidelines suggest that public health officials close beaches when the *E. coli* level exceeds 160/100mL. All results were generally 2 orders of magnitude above the beach closing standard. The Lowell St outfall had the highest levels with *E. coli* concentrations similar to sewage diluted by a factor of about 100. It is interesting to note that the outfall collecting water from the largest

(Brittingham) and the smallest (Bernie's) land areas had the lowest concentrations of *E. coli.* The data from March11th, where sampling was done both in the morning and the afternoon indicates that the concentration of *E. coli* does not significantly go down during the course of rain events such as were captured here. This data set, although small, provides evidence that storm water is a likely cause of elevated *E. coli* levels at Bernie's Beach.

E. coli per 100 mL for the 2010 sampling events

Sampling site	AM 3/11/2010	PM 3/11/2010	6/4/2010	9/11/2010
Bernies Beach stormwater outfall	630	980	1600	520
Lowell St. stormwater outfall	>2420	>2420	16000	12000
Parr St. stormwater outfall	1580	330	3900	6800
Brittingham Park stormwater outfall	5100	2400	3410	210

Summary of Beach Selection

Bernies

E. coli arithmetic mean – 299 cfu/100 mL (8th highest)

E. coli geometric mean – 48 cfu/100 mL (10th highest)

Potential sources: Stormwater outfall immediately west of beach. Multiple other outfalls enter Monona Bay. Relatively high number of geese observations but low observance of feces on beach. Sanitary facilities near beach.

Pros: Bacterial outbreaks are clearly influenced by stormwater.

Cons: Beach is situated in Monona Bay where wind commonly causes accumulation of plant debris. The west side of Monona Bay has four outfalls that could potentially impact the beach. Even if the nearest outfall is re-routed or treated, it is likely that wind accumulation or bacterial loading from other outfalls could still impact the beach.

Brittingham

E. coli arithmetic mean – 450 cfu/100 mL (5th highest)

E. coli geometric mean – 81 cfu/100 mL (3rd highest)

Potential sources: Lots of geese, sanitary facilities. Multiple stormwater outfalls enter Monona Bay, two storm pipes (one on each side of the beach) could be treated with existing lands likely catchbasin devices.

Pros:

Cons: Not a highly used beach so project would not be highly visible. Infiltration measures are difficult to implement since land is fairly flat and groundwater depth is shallow. No stormwater outfall near the beach likely to impact the beach.

Esther

E. coli arithmetic mean – 344 cfu/100 mL (4th highest)

E. coli geometric mean – 64 cfu/100 mL (8th highest)

Potential sources: Stormwater outfall immediately east of beach. (One small pipe could be treated on existing lands likely bio-retention). Sanitary facilities. Some geese and feces.

Pros: A single stormwater outfall located directly next to the beach is likely the only outfall impacting the beach.

Cons: The sewershed for this outfall is small and very little stormwater infrastructure is in place in the area so installing controls in this stormwater pipe is likely not going to cause much change in bacterial loading. Very little stormwater infrastructure is in place in the area and slope is relatively steep so there is likely also a lot of runoff entering the lake.

James Madison

E. coli arithmetic mean – 271 cfu/100 mL (10th highest)

E. coli geometric mean – 70 cfu/100 mL (7th highest)

Potential sources: Multiple stormwater outfalls near beach to the west. Geese. Pets. Sanitary facilities.

Pros: Clear stormwater issue.

Cons: Several stormwater outfalls potentially impact the beach and all outfalls drain from highly urbanized areas. Infiltration measures are difficult to implement since land is fairly flat and groundwater depth is shallow. Would require significant park dedication of the park for ponds or purchase of other lands upstream.

Marshall

E. coli arithmetic mean – 327 cfu/100 mL (5th highest)

E. coli geometric mean – 75 cfu/100 mL (6th highest)

Potential sources: Large stormwater outfall north of beach. Pets. Sanitary facilities.

Pros:

Cons: Not stormwater influenced.

Olbrich

E. coli arithmetic mean – 349 cfu/100 mL (3rd highest)

E. coli geometric mean – 84 cfu/100 mL (3rd highest)

Potential sources: Starkweather Creek (multiple outfalls enter into Starkweather), geese, sanitary facilities

Pros: Clear stormwater issue. Large amount of park land in area.

Cons: Much of the problem is likely due to loading from Starkweather Creek so the problem is too large for the current projects. Wind currents cause accumulation of plant debris.

Olin

E. coli arithmetic mean – 551 cfu/100 mL (highest)

E. coli geometric mean – 132 cfu/100 mL (highest)

Potential sources: Wingra Creek (multiple outfalls) flow past the beach, geese, sanitary facilities.

Pros: Clear stormwater issue. Large amount of park land in area.

Cons: Much of the problem is likely due to loading from Wingra Creek so the problem is too large for the current projects.

Spring Harbor

E. coli arithmetic mean – 325 cfu/100 mL (6th highest)

E. coli geometric mean – 84 cfu/100 mL (4th highest)

Potential sources: Stormwater outfall immediately southeast of beach. Geese. Sanitary facilities.

Pros: A single stormwater outfall located directly next to the beach is likely the dominant source of baterial loading. Land for an infiltration basin is available in the parking lot across the street from the beach.

Cons: The stormwater pipe (3'x4') is too deep to daylight without significant excavation or pumping of stormwater. The beach is not used by many people making project visibility an issue.

Vilas

E. coli arithmetic mean – 304 cfu/100 mL (7th highest)

E. coli geometric mean – 99 cfu/100 mL (2nd highest)

Potential sources: Geese, sanitary facilities.

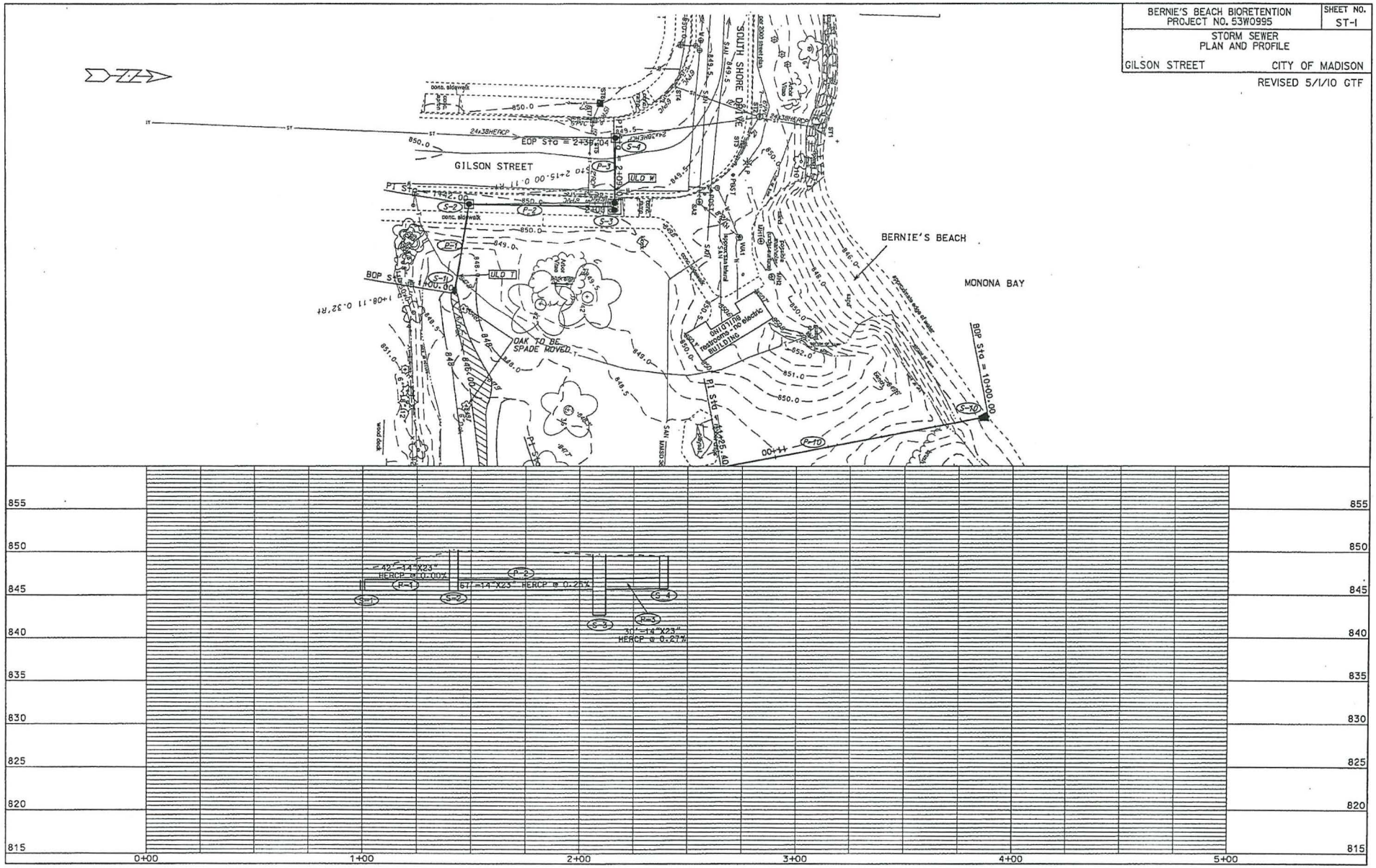
Pros: Much of the problem is likely due to waterfowl usage. There are no stormwater outfalls that appear to impact the beach. This is one of the most popular beaches so project would have high visibility. Friends of Lake Wingra is active and could provide assistance.

Cons: No conventional storm possibilities

BERNIE'S BEACH

BERNIE'S BEACH BIORETENTION PROJECT NO. 53W0995	SHEET NO. ST-1
STORM SEWER PLAN AND PROFILE	
GILSON STREET	CITY OF MADISON

REVISED 5/1/10 GTF



PLOT SCALE: .....
PLOT NAME: .....
REV. DATE: .....
ORIGINATOR: CITY_OF_MADISON_STREETS_DIVISION

FILE NAME: M:\DESIGN\SEWER\OGN\53W0995\PLAN\RCP01001.DGN

DATE: 5/3/2010

State of Wisconsin
Department of Natural Resources
Box 7921
Madison, WI 53707-7921

Grant Payment Request

Form 8700-001 (R 6/06) Page 1 of 2

Notice: Project Sponsors are required to provide information requested on this form when applying for payment of a grant funded by the Department. See Reporting Requirements on reverse. The Department will not process your payment request unless you provide all information requested. This information will be used to determine the amount of your payment and issue your check. 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.].

Submit one copy of this request form, your completed Grant Payment Worksheet (Form 8700-002), and required documentation, listed on reverse, to your DNR Grant Specialist. See the DNR web site for additional information: http://www.dnr.state.wi.us/org/caer/cfa

Project Sponsor Information

Project Sponsor / Management Unit Name	Grant Number
Public Health Madison & Dane County	SPL-213-09
Project Name	**County**
Yahara Lakes Beach Bacteria Reduction - Phase 2	Dane

The DNR will mail the check to the name identified on the application as "Check Recipient." Questions? Contact DNR Grant Specialist.

Type of Request: ☐ Partial ☒ Final ☐ Supplemental (Snowmobile Only)

Payment Information *(see reverse for instructions)*

A. Payment Record to Date	Amount	This Column for DNR Use Only
1. Amount of Grant (from original or amended Grant Agreement)	3,000.00	
2.a. Advance Payment Received, if any		
2.b. Total Payments Received **after** Advance Payment, if any		
2.c. Total Payments Received to Date (Lines 2.a. + 2.b.)		
3. Funds Remaining (Line 1 minus Line 2.c.)	3,000.00	
B. Cost Share Amount		
4. Total Eligible Project Costs this Period. Transfer data from "Total Project Costs" field on Worksheet (Form 8700-002)	$	
5. Your Share of Costs. See Line 5 instructions on reverse.	$ 1168	
6. State Share of Costs (Line 4 minus Line 5) NOTE: This line cannot exceed the amount in Line 1.	$	
C. This Payment Request and Grant Balance Remaining		
7. Amount of Advance Payment Received (from Line 2a) *(if no advance payment received or already accounted for, enter $0)*	$ 0.00	
8. Amount Eligible this Claim (Line 6 minus Line 7) NOTE: This line cannot exceed the amount in Line 3.	$ 0.00	**Amount approved this claim →**
9. Grant Balance Remaining (Line 3 minus Line 8)	$ 3,000.00	

Lake & River Grants Only: Does project include State Lab of Hygiene Sample Analysis? ☐ Yes ☒ No

Certification

I certify that, to the best of my knowledge and belief, the eligible costs requested are in accordance with the terms of the grant agreement and that all expenditures are based on actual payments of record. This reimbursement represents the grant share due that has not been previously requested.

Name of Authorized Representative - type or print	(Area Code) Telephone Number
Kirsti Sorsa	(608) 243-0356
Signature of Authorized Representative	(Area Code) FAX Number
[signature]	(608) 266-9730
Date Signed	E-mail Address
11/21/2011	ksorsa@publichealthmdc.com

Space Below this Line for DNR Use Only

Grant Specialist Signature	Reimbursement Approval Date	

State of Wisconsin
Department of Natural Resources
Community Financial Assistance

Grant Payment Worksheet

Form 8700-002 (R 8/03) Page ___ of ___

Notice: Information requested on this form is required by the Department when applying for a reimbursement of eligible expenses. The Department will not consider your payment request unless you complete and submit this form.

Instructions: Itemize all project expenses, including donated labor, and attach photocopies of proof of expenses and payments for each item listed. See reverse for instructions. Use additional worksheets as necessary, numbering each. Submit with Grant Payment Request, Form 8700-001, or specific grant reimbursement form, to your DNR Grant Specialist.

Project Sponsor / Management Unit Name
Public Health Madison & Dane County

Grant Number
SPL-213-09

Does this grant project include State Lab of Hygiene sample analysis costs? ☐ Yes ☐ No

Reset

Date Expense Incurred	Invoice #	Proof of Payment #	Payee	Eligible Project Cost Description (Check Grant Agreement)	Amount Paid	Amount Donated
10/27/2010	6475		Public Health Madison & Dane County	Bio-retention Construction see item # 90032	3,000.00	
				in Nelson Excavating Contract		

Grant Begin Date	Grant End Date
04/01/2009	12/31/2011

Total Project Costs: Please sum all pages manually. (Sum of **Paid Subtotal** and **Donated Subtotal** for all pages)	$

Paid Subtotal	Donated Subtotal
3,000.00	0.00

APPLICATION AND CERTIFICATE FOR PAYMENT
CITY OF MADISON ENGINEERING DIVISION

PROJECT: **BERNIE'S BEACH BIORETENTION**
CONTRACT NO. 6475 PAYMENT NO.: Final - #5

DOLLAR AMOUNTS TO BE ENTERED ON THIS PAGE BY CITY ENGINEERING DIVISION PERSONNEL ONLY

TOTAL FROM PAGE 3 :	$62,380.84
LESS RETAINAGE:	-0-
SUBTOTAL:	$62,380.84
LESS PREVIOUS PAYMENT:	$60,907.44
CURRENT PAYMENT DUE:	$1,473.40

DISTRIBUTION OF FUNDS:

#ESTM-58270-810551-00-53W0995	$1,473.40

CONTRACTOR'S APPLICATION FOR PAYMENT:
THE UNDERSIGNED CONTRACTOR CERTIFIES THAT TO THE BEST OF HIS/HER KNOWLEDGE THE WORK COVERED BY THIS APPLICATION FOR PAYMENT HAS BEEN COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND THAT THE CURRENT PAYMENT IS NOW DUE.

CONTRACTOR **NELSON EXCAVATING, LLC** DATE 11/5/10

INSPECTOR'S CERTIFICATE FOR PAYMENT:
THE UNDERSIGNED INSPECTOR CERTIFIES THAT TO THE BEST OF HIS/HER KNOWLEDGE, THE WORK COVERED BY THIS APPLICATION FOR PAYMENT HAS BEEN COMPLETED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND THAT THE CONTRACTOR IS ENTITLED TO PAYMENT OF THE AMOUNT CERTIFIED.

INSPECTOR DATE 10/27/10

PLEASE PROVIDE THE TIME PERIOD FOR THIS PAYMENT REQUEST: FROM: 2010
TO:

PLEASE PROVIDE THE CONTRACTOR/SUBCONTRACTORS THAT WORKED ON PROJECT DURING THIS PERIOD OF TIME:

CONTRACTOR/INSPECTOR/ENGINEER SHOULD ONLY COMPLETE COLUMN #10, "TOTAL UNITS"

NELSON EXCAVATING, LLC
BERNIE'S BEACH BIORETENTION
ACCOUNT NO. ESTM-58270-810551-00-53W0995
CONTRACT NO. 6475
FINAL - PAYMENT NO. 5

VOLUME NAME: PT-PYMNT/2010		1	2	3	4	5	6	7	8	9	********* #10	11	12
ITEM	TYPE OF WORK	ESTIMATED QUANTITIES	UNITS	UNIT PRICE BID	CONTRACT DOLLARS	C. O. DOLLARS	UNITS THIS APPL.	EXTENSION	UNITS PREV. APPL.(S)	EXTENSION	TOTAL UNITS	EXTENSION	PERCENT COMPLETE
10702	Traffic Control for Storm Sewer Installation	1.00	LUMP SUM	$1,000.00	$1,000.00		0.00	$0.00	1.00	$1,000.00	1.00	$1,000.00	100.0%
10912	Mobilization for Storm Sewer Installation	1.00	LUMP SUM	$2,500.00	$2,500.00		0.00	$0.00	1.00	$2,500.00	1.00	$2,500.00	100.0%
20109	Finish Grading	1.00	LUMP SUM	$2,000.00	$2,000.00		0.00	$0.00	1.00	$2,000.00	1.00	$2,000.00	100.0%
20711	Trench Restoration 4 Inch Topsoil, Seed, Fertilize and Mulch	362.00	T.F.	$5.00	$1,810.00		0.00	$0.00	290.00	$1,450.00	290.00	$1,450.00	80.1%
21014	Construction Entrance	1.00	EACH	$750.00	$750.00		0.00	$0.00	1.00	$750.00	1.00	$750.00	100.0%
21017	Inlet Protection, Type D	4.00	EACH	$75.00	$300.00		0.00	$0.00	6.00	$450.00	6.00	$450.00	150.0%
30501	Remove and Replace 5" Thick Concrete Sidewalk -- Sidewalk Replacement Program	50.00	S.F.	$8.00	$400.00		0.00	$0.00	453.68	$3,629.44	453.68	$3,629.44	907.4%
40301	Full Width Grinding for patch	170.00	S.Y.	$10.00	$1,700.00		0.00	$0.00	177.78	$1,777.80	177.78	$1,777.80	104.6%
40203	HMA PAVEMENT TYPE E-3	21.00	TON	$120.00	$2,520.00		0.00	$0.00	35.03	$4,203.60	35.03	$4,203.60	166.8%
40382	Remove and Replace Concrete Curb & Gutter, Hand Placed - Resurfacing	10.00	L.F.	$30.00	$300.00		0.00	$0.00	21.60	$648.00	21.60	$648.00	216.0%
50211	Select Backfill For Storm Sewer	384.00	T.F	$1.00	$384.00		0.00	$0.00	362.00	$362.00	362.00	$362.00	94.3%
50225	Utility Trench Patch Type III	30.00	T.F.	$50.00	$1,500.00		0.00	$0.00	27.00	$1,350.00	27.00	$1,350.00	90.0%
50391	Storm Sewer Electronic Markers	1.00	EACH	$40.00	$40.00		0.00	$0.00	0.00	$0.00	0.00	$0.00	0.0%
50413	18 Inch RCP Storm Sewer Pipe (non-metallic)	207.00	L.F.	$42.00	$8,694.00		0.00	$0.00	240.00	$10,080.00	240.00	$10,080.00	115.9%
50431	14 Inch x 23 Inch HERCP Storm Sewer Pipe	177.00	L.F.	$48.00	$8,496.00		0.00	$0.00	122.00	$5,856.00	122.00	$5,856.00	68.9%
50463	18 Inch RCP AE	1.00	EACH	$450.00	$450.00		0.00	$0.00	2.00	$900.00	2.00	$900.00	200.0%
50481	14 Inch x 23 Inch HERCP AE	1.00	EACH	$650.00	$650.00		0.00	$0.00	0.00	$0.00	0.00	$0.00	0.0%
50498	Joint Ties (located @ 18" RCP AE to next two sections of 18" storm pipe)	6.00	EACH	$50.00	$300.00		0.00	$0.00	10.00	$500.00	10.00	$500.00	166.7%

CONTRACTOR/INSPECTOR/ENGINEER SHOULD ONLY COMPLETE COLUMN #10, "TOTAL UNITS"

NELSON EXCAVATING, LLC
BERNIE'S BEACH BIORETENTION
ACCOUNT NO. ESTM-58270-810551-00-53W0995
CONTRACT NO. 6475
FINAL - PAYMENT NO. 5

VOLUME NAME: PT-PYMNT/2010		1	2	3	4	5	6	7	8	9	********* #10	11	12
ITEM	TYPE OF WORK	ESTIMATED QUANTITIES	UNITS	UNIT PRICE BID	CONTRACT DOLLARS	C. O. DOLLARS	UNITS THIS APPL.	EXTENSION	UNITS PREV. APPL.(S)	EXTENSION	TOTAL UNITS	EXTENSION	PERCENT COMPLETE
50499	Concrete Collar (located at connection of 18" RCP AE to 18" Storm Pipe)	1.00	EACH	$400.00	$400.00		0.00	$0.00	1.00	$400.00	1.00	$400.00	100.0%
50603	18 Inch RCP AE Gate	1.00	EACH	$350.00	$350.00		0.00	$0.00	2.00	$700.00	2.00	$700.00	200.0%
50621	14 Inch x 23 Inch HERCP AE Gate	1.00	EACH	$500.00	$500.00		0.00	$0.00	0.00	$0.00	0.00	$0.00	0.0%
50722	6'x6' Catchbasin with 3' sump	1.00	EACH	$4,500.00	$4,500.00		0.00	$0.00	1.00	$4,500.00	1.00	$4,500.00	100.0%
50724	4'X4' Storm SAS	1.00	EACH	$3,400.00	$3,400.00		0.00	$0.00	1.00	$3,400.00	1.00	$3,400.00	100.0%
50725	5'X5' Storm SAS with weir wall	1.00	EACH	$4,500.00	$4,500.00		0.00	$0.00	1.00	$4,500.00	1.00	$4,500.00	100.0%
50741	Type "H" Inlet	2.00	EACH	$1,100.00	$2,200.00		0.00	$0.00	2.00	$2,200.00	2.00	$2,200.00	100.0%
50801	Utility Line Opening (ULO)	2.00	EACH	$100.00	$200.00		0.00	$0.00	1.00	$100.00	1.00	$100.00	50.0%
90030	Dewatering and Water Control	1.00	LUMP SUM	$2,000.00	$2,000.00		0.00	$0.00	1.00	$2,000.00	1.00	$2,000.00	100.0%
90031	Construction Fencing	250.00	LF	$2.00	$500.00		0.00	$0.00	262.00	$524.00	262.00	$524.00	104.8%
90032	Bio-Retention constrution	1.00	LUMP SUM	$6,000.00	$6,000.00		0.00	$0.00	1.00	$6,000.00	1.00	$6,000.00	100.0%
90033	Field Bend	1.00	EACH	$500.00	$500.00		0.00	$0.00	1.00	$500.00	1.00	$500.00	100.0%
90034	Tree Protection	1.00	LUMP SUM	$100.00	$100.00		0.00	$0.00	1.00	$100.00	1.00	$100.00	100.0%
CONTRACT TOTALS					$58,944.00			$0.00		$62,380.84		$62,380.84	105.8%

Donated Volunteer Labor Summary

AIS/Lakes/Rivers Grant Program

Project Sponsor: Public Health Madison & Dane County **Grant Proj. Number:**SPL-213-09

Project Name: Yahara Lakes Beach Bacteria Reduction – Phase 2

Name of Volunteer	Hours	X	Rate	=	Total
Agard Steve	4				
Clark Glenn	2				
Corsi Steve	6				
Fries Greg	7				
Hulsey Brett	2				
Jones Sue	12				
Kinzelman Julie	18				
Kitchel Lisie	10				
Kroncke Fritz	3				
Long Sharon	5				
Lorman Jim	10				
McMahon Katherine	5				
Michaud Bernard	4				
Sorsa Kirsti	18				
Standridge John	21				
Steinhorst Genesis	14				
Uejio Christopher	5				

Total Value of Services Performed:

146 **X $8 =** **$1168**

**River Planning & Protection = use prevailing Federal Minimum Wage.

AIS = Use $12.00

Lake Planning & Lake Protection = Use $8.00

I hereby certify that the donated services have been performed and that this claim is fair and correct.

Signature of Project Manager

11/21/2011

Date

Attach Donated Volunteer Labor Worksheet

WDNR