



**ANNUAL REPORT**

**FOR**

**CALENDAR YEAR 2008**

**UPPER FOX RIVER WATERSHED COMMUNITIES GROUP MUNICIPAL  
STORMWATER DISCHARGE PERMIT  
WPDES PERMIT NO. WI-S050105-1**

**March, 2009**

**1. Status of implementing the storm water management program and compliance with any schedules contained in the permit.**

The Town of Delafield has submitted all of the program proposals, storm sewer system mapping, and water quality pollutant loading calculations required in their current permit and have met compliance for all programs. All programs required under the WPDES permit are being implemented by the Town. There were no submittals required in 2008 besides the calendar year 2007 annual report document on March 31<sup>st</sup> 2008.

**2. Updated storm sewer system map**

No updates to the storm water system map were map in 2008.

**3. A summary of the pollutant loading calculations**

A summary of the WinSLAMM pollutant loading analysis was submitted to the WDNR on March 31<sup>st</sup> 2007. The analysis results are summarized as follows:

- There was a 51% reduction in annual TSS pollutant loading from the No Controls scenario to the Existing Controls scenario for the cumulative major outfalls total.
- There was a 40% annual TSS pollutant loading reduction for the cumulative minor outfalls total.
- There was a 43% annual TSS pollutant loading reduction for the total analysis of the Town of Delafield.

No other updates have been made to the WinSLAMM model as the Town has not received any review comments back from the WDNR at this point.

**4. Summary of Monitoring Data/Revisions to the Monitoring Program**

The Town, in cooperation with the Upper Fox River Watershed Communities Group and the WDNR is participating in a study known as “Verification of a Method for Sizing Proprietary Stormwater Treatment Devices Using Results from a Downstream Defender”. There are no new updates at this time.

**5. Summary of Enforcement Actions, Illicit Discharge Screening results, Connections Removed, Inspections, Public Education Programs and Spill Responses.**

No spill responses took place in 2008. The illicit Discharge screening results from 2008 are summarized in section 7. There was a total of one Erosion Control enforcement action issued by Waukesha County staff for the Marina Condominiums Development.

**6. Summary of Revisions/Proposed Revisions to the Storm Water Management Program**

There were no revisions to the Storm Water Management Program in 2008.

**7. Summary of Assessment of Controls**

**Oil and Household Hazardous Waste**

Town of Delafield does not collect oil or household hazardous waste on behalf of its citizens. Residents are directed to the City of Delafield who collects these items on behalf of the Town. Information on oil and household hazardous wastes is available to residents in the Town Hall and on the Town's webpage (Exhibit A). The Town is unaware of the amount collected by the City of Delafield on behalf of its residents.

**Catch Basin Cleaning Program**

The majority of the Town is rural with roadside ditches. In some areas, the Town has allowed curb and gutter with storm sewer. In many cases, the Town has allowed inlets so that water will drain into the storm sewer systems and to a storm water quality pond. The Town has 19 catch basins. In 2008, the Town's catch basin cleaning program included the following:

- Inspect all catch basins in spring and fall of each year.
- Clean by physical means (shovels) at least once per year.

The total amount of solids that were collected from the catch basin cleaning program in 2008 totaled approximately 5 cubic yards. This was a reduction compared to the 2007 total of approximately 7 cubic yards. This could be explained by the fact that the Town's Highway crew had used less sand in the salt/sand mix for deicing roadways in 2008. These solids were stockpiled at the Town Hall / Highway Yard and picked up by our refuse contractor, Veolia Environmental Services for disposal.

**Street Sweeping Program**

The Town of Delafield currently has a limited street sweeping program based on the rural nature of the community and past practices. There are approximately twelve (12) roads in the Town that have curb and gutter drainage. None of the streets are considered arterial roads based on Town standards. The Town does not own any street sweeping equipment at this time, and therefore has hired an outside contractor (Sweep All) to sweep the curbed roads in the spring of 2008. 16 man hours and 20 cubic yards of solids were recorded by the contractor. There are at least four (4) subdivisions in the Town that hire an independent contractor to sweep the roads in their subdivision to remove the sand left over from the winter road plowing. These subdivisions do not have curbed sections, but desire their roads to be free of sand. The sand is swept up and removed, not just pushed off the road into the roadside ditches. Town crews also performed some hand labor to pick up leftover sand in areas where there was sand buildup using a sweeper attachment on their bobcat. Approximately 20 additional cubic yards of debris were collected from this process.

These solids were collected and then dumped at the Town Hall / Highway Yard. Town Highway crews loaded this waste into a dumpster provided by Veolia Environmental Services who disposes of the material properly. The amount of debris collected in 2008

was a reduction compared to the 2007 total of approximately 60 cubic yards of solids. This reduction is most likely due to the fact that the Town decided to use a slightly higher proportion of salt to sand for roadway deicing as compared to recent years.

#### **Illicit Discharge Detection and Elimination Program**

The annual dry weather field screening of the 26 outfalls designated as major outfalls as part of the Illicit Discharge, Detection and Elimination Program was completed in August of 2008. Locations of these 26 major outfalls are displayed on the map in Exhibit B. The dry weather field screening process included the following tasks:

- Visual inspection during dry weather periods.
- An inspection report was completed and a photograph was taken for each major outfall. A completed inspection report and photograph taken during these dry weather field screenings is provided in Exhibit C.
- Following completion of the field inspections, the results of the inspections were compiled and reviewed by the Highway Superintendant and any follow-up work was scheduled for completion. See Table 1 for the Summary of Inspections.

As shown in Table 1, there was one possible illegal connection found during this field screening. It was found that a 2" PVC pipe was connected from a private home into the channel near Major Outfall PWK-1-23-2-1. This pipe was not discharging at the time of inspection. The Village Engineer later visited this site and found that it was a foundation drain from the private home and therefore, no enforcement actions would be required. See the attached inspection form and photo of this outfall (Exhibits C and D). The remainder of the outfalls inspected had no illicit discharges/connections detected during the field screenings.

#### **Group Public Education and Outreach Program**

The Upper Fox River Watershed Group have all contributed funds to support a staff position at Waukesha County to be the designated I&E person to implement an I&E program that meets the requirements of NR216 and the WPDES permit. The tasks and activities that were implemented by the Group's I&E Program in 2008 have been summarized in Exhibit E.

#### **Public Information and Participation Program**

In addition to using the Waukesha County staff to educate contractors, builders, developers, the general public, teachers and students, the Town used its engineering consultant to provide the following activities:

- The Town Board was presented with the 2007 WPDES Permit Annual Report in April 2008. No feedback was received by the Board during or after this meeting.
- The Town Board was presented with the 2008 WPDES Permit Annual Report on March 10<sup>th</sup> 2009. No feedback was received by the Board during or after this meeting.
- The Town Board was given an informational presentation outlining the types of Storm Water BMPs and their benefits on March 10<sup>th</sup> 2009. The Town's Plan Commission also was given this presentation on March 24<sup>th</sup> 2009.



- The Town Engineer has informally discussed storm water issues with the Town's Highway Superintendent and staff throughout 2008, specifically about the benefits of street sweeping, catch basin cleaning and erosion control. They have also been made aware of the procedures related to calls or concerns expressed by citizens concerning illicit discharges.
- The Town's newsletter (Town Crier) included a two page article explaining the benefits of rain gardens. This newsletter was published in June of 2008. See Exhibit F.
- The Town's website has been updated to include links to the storm water related articles distributed to the group by Jayne Jenks at Waukesha County, the Waukesha County storm water webpage, the WDNR BMP Tech standards, the Town's WPDES permit document, recycling and household hazardous waste disposal tips, the Town's annual reporting documents, and a document explaining the some of the various storm water BMPs available and related benefits. See the Town's webpage for more details (<http://www.townofdelafield.org>).
- The Town has started handing out an informational brochure explaining how pet waste negatively impacts storm water quality to residents applying for dog licensure.
- The Waukesha County Storm Drain Stenciling Program brochures are available to residents at the Town Hall.
- The Town contacted both of the private schools within the Town and was able to receive contact information for the Prairie Hill Waldorf School for inclusion in the County's Project WET program contact list. St. Anthony's on the Lake was not interested in joining this contact list at this time.
- The Town had the Waukesha County Storm Water Quality Display at the Town Hall during the election period (1<sup>st</sup> week in April).
- The Town had two teams of residents collecting water quality monitoring data on the Scuppernong Creek and Zion Creek using the Watershed Action Volunteer (WAV) protocols. Data was collected 4 times throughout the year on Scuppernong Creek and 9 times throughout the year on Zion Creek. (See Exhibit G)
- The Village Engineer, the Town Clerk, and the Town's Highway Superintendant met with Maureen McBroom of the WDNR on Thursday, September 4<sup>th</sup>, 2008 to discuss the Town's current storm water management programs successes and challenges.

It should also be noted that no Town of Delafield residents visited the Town Hall to review the WPDES annual report document in 2008, and therefore had no feedback regarding the annual report. No other inquiries were made by residents regarding the Town's storm water management practices.

#### **Construction Erosion Control Plans Approved**

Waukesha County conducts the erosion control inspections for developments within the Town of Delafield. In 2008, Waukesha County reported that a total of eleven construction sites were inspected as seen below. On these eleven sites, a total of 42 erosion control inspections were conducted. A total of two enforcement actions were taken as can be seen on the next page.

#### Sites Inspected in 2008

1. Barb Webb Driveway
2. Creekside Meadows Phase I
3. Equitable Bank
4. Lapham Peak Snowmaking
5. Marina Condos
6. Maple Bluff Estates
7. Ridge Pointe Center
8. Scuppernong Springs Condominiums
9. Scuppernong Springs Fill and Swale
10. Shepherd's Pass
11. Shepherd's Pass South

#### Permits in 2008

1. 2 Permits Issued
2. 3 Failed Final Inspections
3. 1 Issued Permit Termination Letters
4. 1 Passed Final Inspections

#### Enforcement Actions

1. Marina Condominiums – Sent Notice of Violation
2. Marina Condominiums – Satisfaction of Enforcement

#### **Approvals for BMP's**

There was one development approved in 2008 within the Town of Delafield that included an approval for storm water management BMP's. Although this development received its approvals, construction of these rain gardens has not yet started. The development name and type of BMP(s) approved is listed below:

- Maple Bluff Estates Condominium Development – Three interconnected Rain Gardens with an under-drain pipe system for overflow situations.

#### **Salt/Sand Used**

Currently the Town typically uses a sand/salt mixture for road de-icing. The mix is not developed through an automatic process. The final product is created by mixing a dump truck load of sand with front end loader buckets of salt to get the approximate desired mix as described below. The mix is then loaded onto trucks and distributed using augers in the back of the trucks and spinners operated via levers in the trucks. The Town plows and de-ices all roads under Town jurisdiction. There are occasional instances when pure salt is used for larger storms or specific locations (hills, stop signs, other areas of concern). In 2008 the estimated amount of salt used was 650 tons and the estimated amount of sand used was 150 tons. The salt usage in 2008 was an increase compared to the approximate 2007 total salt usage of 500 tons.

<b>SUMMARY</b>	
<b>ITEM</b>	<b>AMOUNT</b>
Number of Residents Providing Feedback	0
Number of Internal Staff Meetings with SW Education	1
Number of Meetings with SW Education	2
Waste Oil (from trucks)	250 gal
Illicit Connections Found / Eliminated	0 / 0
Enforcement Actions	1
Storm Sewer Inlets Stenciled	0
Leaves Collected	50 CY
Solids from Catch Basin Cleaning	5 CY
Solids from Street Sweeping	20 CY
Street Sweeper Miles/Hours	16 Hours
Construction Erosion Control Inspections	42
Erosion Control Plans Approved	1
BMP's Applied For	1
Salt Used	650 Ton

## **8. Fiscal Analysis of Annual Expenditures and Budget for 2008**

Expenditures in 2008 included:

- \$4,200 related to preparation of the various programs noted above, meetings with the WDNR and the Upper Fox River Watershed Communities Group related to the permit, dry weather investigations of outfalls, and keeping elected officials and Town staff apprised of the WPDES permit requirements and associated programs.
- \$2,080 for Street sweeping charges.
- \$2,100 payment to Waukesha county for the I&E program
- \$2,000 annual permit fee
- The Town Highway Department performs several tasks related to stormwater, such as picking up excess sand in the spring and random catch basin cleaning as part of their normal day to day duties; therefore the cost is included in their salaries.

## **9. Fiscal Budget for 2009**

The budget for 2009 includes:

- \$6,000 for the completion of the annual report, dry weather screening of illicit connection/discharges and follow-up on the local information and education program and permit reissuance deadlines.
- \$2,500 for street sweeping.
- \$2,100 for payment to the County for the Education and Information program.
- \$2,000 for the annual permit fee.
- Catch basin cleaning will be performed by the highway crews during their normal duties. Erosion control inspection expenditures will be billed back to developers and are not included in a specific budget.


**10. Identification of Water Quality Improvements or Degradation**

At this time, there has been no evidence of water quality degradation or improvement for waters in the Town of Delafield.

## Report Certification

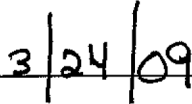
The appropriate Town of Delafield staff members and elected officials have been, or will be, appraised of the content of this annual report.

The information above was gathered and prepared under the direction of the Town Board and based on inquiry of the people directly under their control, to the best of their knowledge, the information herein is true, accurate and complete.



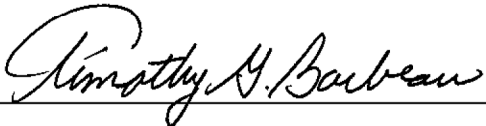
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Town Chairman



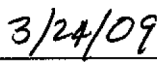
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Date



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Town Engineer



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Date

c:     Town Board  
       Don Roberts, Highway Superintendent  
       Mary Elsner, CMC, Town Clerk  
       Paul Mortimer, Building Inspector  
       Tim Barbeau, PE, RLS, Town Engineer

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Town of Delafield : A Perfect Environment - Windows Internet Explorer

http://www.townofdelafield.org/towninfo\_recycle.htm

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Town of Delafield : A Perfect Environment

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Tools

# Town of Delafield

A Perfect Environment

EXHIBIT A

Home Our Town Town Information Departments Whom Do I Call? Minutes and Agendas Forms Maps Newsletter Links Town Code

## Town Information

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[Trash Pick Up](#)

## Town Information

### Recycling Tips and Phone Numbers

For **Appliances** call Veolia Environmental Services for special pick-up information 262-367-6040.

For **Hazardous Wastes** please call 262-896-8016.

**Used Motor Oil** can be taken to the Department of Public Works in the City of Delafield, 111 W. Main Street, on Saturday from 9:00 am - 11:00 pm 262-646-6225.

For **Special & Large Item Removals** please call: Waukesha Iron & Metal, 262-547-7293 or Waukesha Auto Parts & Salvage, 262-547-7293.

For **Driveway Sealer** remove the can lid, let dry out then place by the curb with garbage.

For **Latex Paint** disposal:

1. Pour on newspaper, dry and throw in garbage. Leave the lids off the cans, dry out and throw away.
2. Pour paint into a box lined with plastic and filled with sand, kitty litter or saw dust, let dry and throw in garbage.
3. For large quantities please call local high schools or charity groups to find out if there is a need for paint or call Hazardous Wastes at 262-896-8016.

Tue, Mar 24, 2009

**Contact Information...**  
N14 W30782 Golf Road  
Delafield, WI 53018-2117  
[Map](#)  
Phone: 262-646-2398  
Fax: 262-646-8687  
Email: [mary.elsner@townofdelafield.org](mailto:mary.elsner@townofdelafield.org)

[Local Weather](#)

Internet 100%

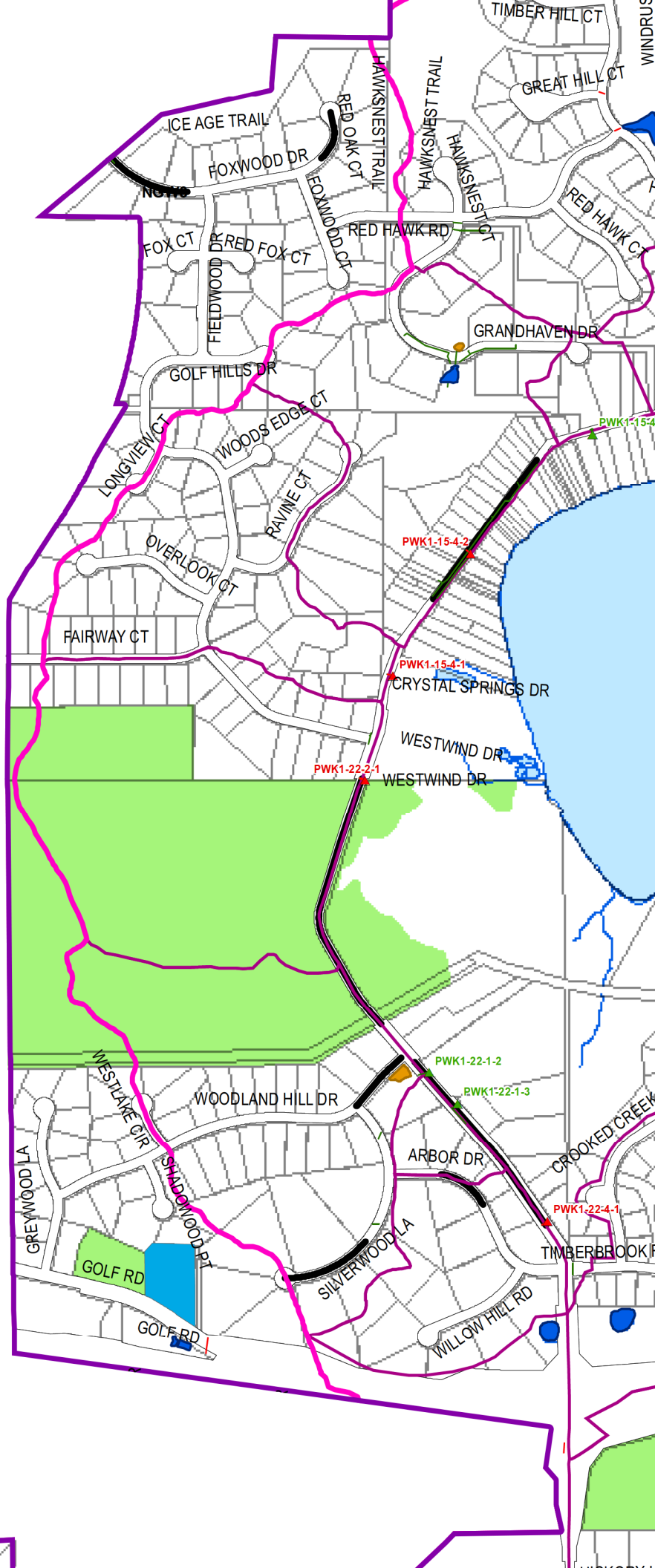


TABLE 1 - ILLICIT DISCHARGE INSPECTION SUMMARY 8/1/08

Sub Basin	Subwatershed	Pipe Material	Pipe Size	Illicit Discharge?	Follow-up Work Required
BRD1-34-3-1	Brandy Brook	CMP	48" x 30" Ellipse	NO	
NMB1-30-3-2	Nemahbin Lake	CMP	42" x 30" Ellipse	NO	
PWK1-12-1-1	Pewaukee Lake	MH		NO	
PWK1-12-3-8	Pewaukee Lake	RCP	84" x 52" Ellipse	NO	
PWK1-14-1-1	Pewaukee Lake	RCP	42" Circle	NO	
PWK1-14-2-1	Pewaukee Lake	CMP	5' x 3.5' Ellipse	NO	
PWK1-15-4-1	Pewaukee Lake	CMP	48" x 36" Ellipse	NO	Clear sediment from exit
PWK1-15-4-2	Pewaukee Lake	RCP	48" x 24" Ellipse	NO	Garden hose connection in ditch on upstream side (W303 N2553 Maple Ave.)
PWK1-22-1-1	Pewaukee Lake	RCP	24" Circle	NO	
PWK1-22-2-1	Pewaukee Lake	RCP	Dual 36" Circle	NO	
PWK1-22-4-1	Pewaukee Lake	CMP	36" Circle	NO	
PWK1-23-1-1	Pewaukee Lake	CMP	36" x 24" Ellipse	NO	
PWK1-23-2-1	Pewaukee Lake	CMP	Dual 36" Circle	Potential - no discharge	Possible illegal connection - Inspected by Village Engineer - Foundation Drain (O
PWK1-23-4-1	Pewaukee Lake	CMP	30" x 36" Ellipse	NO	Verify location, 12' x 6' Box on south side of HWY 94
PWK1-24-3-1	Pewaukee Lake	CMP	54" Circle	NO	
PWK1-24-4-2	Pewaukee Lake	RCP	6' x 6' Box	NO	
PWK1-26-1-1	Pewaukee Lake	CMP	Dual 45" Circle	NO	
PWK1-26-1-2	Pewaukee Lake	CMP	40" x 32" Ellipse	NO	
PWK1-26-2-1	Pewaukee Lake	CMP	Dual 36" Circle	NO	
PWK1-26-2-2	Pewaukee Lake	RCP	60" x 36" Ellipse	NO	
SCP1-31-3-1	Scuppernon Creek	CMP	40" x 16" Box + Tee 18'	NO	
SCP2-28-1-1	Scuppernon Creek	CMP	36" x 24" Ellipse	NO	
SCP2-28-1-2	Scuppernon Creek	CMP	Dual 26" x 34" Ellipse	NO	
SCP2-28-3-1	Scuppernon Creek	CMP	48" x 32" Ellipse	NO	
SCP2-33-3-1	Scuppernon Creek	RCP	Dual 36" Circle	NO	
SCP2-33-4-1	Scuppernon Creek	CMP	52" x 36" Ellipse	NO	





**EXHIBIT D**





**EXHIBIT E**  
**Waushara County Storm Water Information & Education Activities**  
**Upper Fox River Watershed Group**  
**Calendar Year 2008**

DATE	ACTIVITY	LOCATION	PARTICIPANTS	DESCRIPTION
1/16/2008	speaking	Kettle Moraine School District	80	
8-Jan	Doorhangers	Dousman elementary	1000	Supplied 1000 door hangers to 3 students working on project
1/19/2008	display	Wisconsin Hills Middle School	1450	Display at pancake breakfast and other activities in Schuetz Bldg.
2/5/2008	speaking and presentation	Jan-Boree at Schuetz Bldg	170	Did in class discussion with activities with younger students and then presented power point program to the entire upper grades.
3/11/2008	workshop	St. Paul's Oconomowoc	95	Somewater Workshop for engineers and municipal officials
3/20/2008	speaking	Ruekert and Meike	25	EB Shurts Building- Rain Garden Topic
4/1/2008	display	Spring City Garden Club	300	display at town hall during spring voting
4/3/2008	display	Town of Delafield	40	display at town hall during spring voting
4/3/2008	speaking	Pewaukee Library	40	gave short presentation as part of panel at Downstream impact meeting of PRP
4/19/2008	stenciling	Mukwonago	30	beginning on 4-19 and on-going throughout the summer, the high school ecology club will be stenciling in and around Mukwonago. Completed 131 storm drains in 2008
4/16/2008	presentation	Mapes Elementary	50	last minute substitution to recycling program, due to funeral
4/17/2008	speaking	Waushara County	22	Lunch n Learn on rain gardens and rain barrels
4/18/2008	speaking	WCTC	12	Invasive Species presentation
4/22/2008	workshop	Ruekert and Meike	80	Somewater Workshop for engineers and municipal officials
4/24/2008	presentation	Pewaukee River Partnership	15	refresher for returning monitors and sign-up new monitors
4/26/2008	ain garden	Reiter Nature Center	25	Rain garden/rain barrel class during Earth Week
4/30/2008	groundwater presentation	Lake Country Lutheran High	30	Used groundwater model in class presentation during groundwater unit
8-May	stenciling	Oconomowoc	1	individual stenciled 75-100 drains near her home in Oconomowoc
5/3/2008	training	Waterville Field Station	22	annual citizen stream monitoring training
5/5/2008	speaking	Pleasant Hills School	44	Pleasant Hills is in Waushara school district but on edge of Brookfield
5/6/2008	display	Lake Pewaukee Sanitary District	10	Coordinated with sanitary district to provide display and handouts for shoreline restoration workshop
5/9/2008	stenciling	Waushara	30	Central middle School clean-up day
5/10/2008	stenciling	Pewaukee	20	Pewaukee Schools stenciling in downtown Pewaukee
5/12/2008	ain garden	Waushara Public Library	12	Rain garden program for special May gardening series
5/15/2008	speaking	Whitler Elementary	38	Waushara School District
5/16/2008	benchmark	Pebble Creek	1	started new monitor on Pebble Creek at Sunset
5/19/2008	speaking	Pewaukee Horizon	160	5th grade classes
5/19/2008	stenciling	Pewaukee Horizon	160	6th grade classes stenciling in Rocky Point and Deer Haven Subdivisions reached 2000 homes and painted about 550 storm drains
5/20/2008	speaking	Randall Elementary	40	Waushara School District
5/21/2008	benchmark	Jericho Creek	2	started new monitor on Jericho Creek
5/22/2008	presentation	Camp Whitcomb	90	Lake Study program with 5th grade from Pewaukee Schools
5/23/2008	presentation	Camp Whitcomb	60	Lake Study program with 5th grade from Pewaukee Schools
5/30/2008	benchmark	Oconomowoc River	2	New monitors starting at West Shore Drive
6/2/2008	benchmark	Genesee Creek	1	new monitor starting off hwy 83
6/5/2008	speaking	Carroll College	6	Environmental Science summer school class
6/20/2008	benchmark	Fiddler's Creek	2	John and Judy Hasse- new monitors just south of Hwy 18
6/14/2008	program	Reiter Nature Center	36	Healthy Soils workshop for general public
6/24/2008	program	UW Waushara Field St.	30	4H program: talked about water quality and loved at water bugs
7/7/2008	stenciling and speaking	LaCasa	19	Power point program followed by storm drain stenciling in Spanish
7/15/2008	program	Chinook Girl Scout Center	15	Eco-action badge-learned actions they could take to help water quality
7/23/2008	groundwater presentation	LaCasa	20	Used groundwater model in presentation
7/29/2008	monitoring program	Menomonee Falls	1	Met at Bethesda Park to do water monitoring on Fox River
8/1/2008	speaking	Salvation Army	12	Delivered stencils to Matt Redmond with Harley Davidson who will stencil at Menomonee Falls plant location
8/31/2008	stenciling	Waushara	7	Presentation to Women's Ministry group
8-Aug	display	Town of Lisbon	800	Trained 7 teachers- mostly out of county
9/2/2008	benchmark	Paradise Springs	1	Carroll University students- volunteer work day stencilled much of City of Waushara
9/21/2008	display	Apple Harvest Fest	500	Display used at several events over 3 weeks
9/22/2008	ain garden	St. Charles School-Hartland	21	New Monitor at Paradise Springs near Eagle
10/1/2008	program	Elm Grove	12	Rain garden grant information
10/4/2008	display	Town of Waushara	1200	Short rain garden presentation by back rain garden
10/7/2008	program	Eagleville Elementary	10	Water monitoring experience at the Bark River
8-Oct	stenciling	Lego Club of Eagleville	10	Turn Over a New Leaf Workshop
10/9/2008	program	Pewaukee Library	13	Pancake breakfast at firehouse
10-11-08	program	Reiter Nature Center	15	After school program with Lego club
10-14-08	display	Pewaukee Library	13	stencil project in Mukwonago
10-14-08	program	University Lake School	18	Turn Over a New Leaf Workshop
10-16-08	speaking	Randall Elementary	52	Keyed out macroinvertebrates and calculated biotic index
10-20-08	speaking	Elmwood, New Berlin	99	Waushara School District
10-24-08	speaking	Heyer Elementary	46	Elmwood School in New Berlin
10-23-08	stenciling	Belthessa Park	15	Waushara School District
10-27-08	program	Belthessa Park	49	Lego Club from Eagleville Elementary Charter School stencilled new subdivision in Mukwonago
10-30-08	program	WAEE conference	8	Water testing program with Elmwood 6th graders
11-13-08	program	MRF Open House	20	Water testing program with Elmwood 6th graders day 2- other half of class
11-15-08	display	Town of Brookfield	80	Taught session "Water from Start to Finish" at conference
12/3/2008	display	City of Pewaukee	400	Materials Recycling Facility in Waushara
12-15-08	display	City of Pewaukee	400	Annual Tree lighting ceremony

12-17-08	brochures	Town of Vernon			sent 50 each of Lawn Watering, Rain Gardens, Rethinking Yard Care and Lawn and Garden Pesticides	
12-18-08	brochures	Town of Merton			sent 50 of Rain Gardens and 30 Storm Drain Stenciling	

## EXHIBIT F

### **Rain Gardens: An exciting new idea for your home or business**

Rain gardens are a way we all can help protect one of our most important resources, water. You know, as the children's song goes..."Rain, rain, go away." But the question is "Where does it go?" Well it can go away, soaking into a beautiful garden to become part of our groundwater. Groundwater is important because it replenishes our streams, rivers, lakes and wetlands, and most of us get our drinking water from wells that tap into groundwater. For instance, groundwater bubbling up from a spring, with great volume is the headwaters of Token Creek, which is the most significant source of clean water to Dane County's Lake Mendota. Groundwater is also critical to rare communities such as wet prairies and fens. However, in most of our urban environments, rain falls on roofs, roads, and parking lots – areas where it can't soak in. Gradually these impervious surfaces cause problems - as our urban areas increase, so do the problems. With a parking lot, water moves quickly off paved areas into storm drains ... with it carrying a smorgasbord of leaves, grass, soil, oils, fertilizer - all of which end up in our lakes and streams. Urban runoff - along with runoff from rural sources - causes major problems for our water resources. The health of our waterways depends on clean water and places for animals to hide and find food. When too much soil or fertilizer gets into our rivers and lakes, it firsts covers the bottom with a blanket of sediment smothering the insects and fish eggs, destroying the home or habitat of many animals. Next the rich source of nutrients causes tremendous growth of nuisance weeds. Finally as the weeds die, bacteria, feeding on the dead matter, use up the oxygen in the water, which can lead to fish kills. Besides the pollution, an even bigger problem for our rivers and lakes is the tremendous volume of water that rushes off of our roofs, roads, driveways and parking lots. Streams that once caused no problems now flood more and more often. Not only is that a problem for folks in the city – in agricultural areas near cities, farm fields that in the past only flooded occasionally and only in early spring, are now flooding every year and with every heavy rain. Streams impacted by runoff change dramatically in depth and force. These are called 'flashy'. Amazing amounts of water rush down the channel with incredible destructive power. Our response in the past was

to 'control' these streams. The result is ugly and dangerous, kids have drowned in the fast water – and its no picnic to be a river critter trying to live here with too much water one minute and not enough the next.

The impact of poor water quality is felt not only by the animals that live in the streams and lakes, but also by our economy. Water-based tourism brings in \$12-\$15 billion every year to Wisconsin's economy.

But when our waterways become choked with algae, it impacts boating, fishing, swimming...all those things that our tourist economy depends on.

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### ***And what about you and me?***

Poor water quality affects our quality of life, our sense of who we are and where we live, our community

gathering places and our enjoyment of the local resource.

Here's one reason why we have this problem: When people build houses they design them to get rid of

water as quickly as possible. Builders and developers use the principal of collecting water, concentrating

the flow, and conveying it quickly off the property. While this protects the home, it ends up sending the

problem downstream.

We've tried to address this by building detention ponds to collect the water and send it downstream more

slowly. But these engineered practices are expensive, frequently look ugly and can become full of algae if not properly maintained.

Here's one solution that you can do – it's elegant in its simplicity. A slightly depressed garden full of native

plants where rainwater can soak into the ground, replenishing groundwater and protecting our surface

water.

They are rain gardens!

- \* they help protect and restore natural hydrology,

- \* they allow rainwater to soak in instead of running off.

- \* they help trap pollutants that might be in the runoff.

Rain gardens aren't only for city folks. A rain garden can go between two sheds on a farm – they can be

used anywhere the amount of water running across the ground is a problem. There are also other benefits

to rain gardens – the native plants attract birds and butterflies.

They are attractive additions to property, enhancing the beauty of the neighborhood, not only in summer

but in winter too. The winter seed heads can be an appreciated food source for our winter songbirds.

### ***So what exactly is a rain garden?***

It's a sunken garden, typically 4-6 inches deep with a flat bottom.

While any size does some good, they normally are about 1/3 of the size of what is draining to it – usually

a roof, yard or driveway.

It can be wild or formal looking depending on the plants selected and the desires of the home owner.

***Use native plants***

- The roots of native wildflowers and prairie grasses typically go twice as deep into the ground as they are tall, while turf grass roots are the same depth as the grass is kept. Therefore, natives absorb

much more water.

- Uses no fertilizer.

- Uses little or no pesticides.

- Maintenance similar to perennial gardens.

- After establishment does not need watering.

- Native plants are also beautiful individually, and as a community.

More help, including a how-to build a rain garden manual, is available at your UWEX or DNR office or on

the web at <http://dnr.wi.gov/runoff/rg>.