



ANNUAL REPORT

FOR

CALENDAR YEAR 2012

**UPPER FOX RIVER WATERSHED COMMUNITIES GROUP MUNICIPAL
STORMWATER DISCHARGE PERMIT
WPDES PERMIT NO. WI-S050105-2**

March 2013

Introduction

This report has been prepared to meet the annual reporting requirement for the Town of Delafield undertaken pursuant to the Wisconsin Pollutant Discharge Elimination System Permit No. WI-S050105-2 for the Upper Fox River Watershed Group. Section notations refer to the permit document, effective date October 30, 2009.

Part I.G. Impaired Water Bodies

The WPDES permit identifies Zion Creek in the Town of Delafield as an impaired water body with sediment and phosphorus as listed pollutants of concern. As part of the permit requirements, the Town was required to "...develop a strategy to reduce the pollutants of concern entering impaired water bodies from the municipal storm sewer system" by March 31, 2011.

The revised Municipal Separate Storm Sewer System (MS4) Map described in Part II.H. shows that the only parts of the Town's MS4 that discharge to Zion Creek are the ditches on the south side of Oakton Road. The ditch on the north side of Oakton Road east of Zion Creek flows in a swale along Louis Avenue directly to Pewaukee Lake. The ditch on the north side of Oakton Road west of Zion Creek flows north in a swale along Angela Avenue and then east through undeveloped roadside to Pewaukee Lake.

In order to develop a strategy to address the impaired waterway, it is important to know the extent of the parameters and the source of the pollutants that make the waterway impaired. The availability of monitoring data for Zion Creek has been discussed with DNR and Waukesha County and at this time, funds from either of these agencies have not been set aside to monitor Zion Creek.

The DNR was going to internally request additional details on the available monitoring information. After the monitoring data for Zion Creek is received by the Town of Delafield and reviewed, the Town will determine if more monitoring locations are required to better evaluate the source of the pollution.

The University of Wisconsin Extension service has been monitoring Zion Creek through the Water Action Volunteers program since 2000. The data includes dissolved oxygen and transparency and is available at <http://www.uwex.edu/erc/wavdb/>. The monitoring did not include sediment or phosphorus.

The Town will continue to work with the WDNR to gather information and develop a strategy once data on the creek can be gathered.

Part II.A. Public Education and Outreach

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 2012 have been summarized by Waukesha County, but a copy has not been included as requested by the DNR reviewer.

Part II.B. Public Involvement and Participation

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 Chairman was presented with the CY 2011 WPDES Permit Annual Report on March 30, 2012. No negative feedback was received by the Chairman during his review of the document.
- The Town Engineer gathered all members of the Town Highway Department and presented information via a power point presentation that included permit information, goals of the permit, a review of BMP's to use on various work and information on green infrastructure. They were also made aware of the procedures related to calls or concerns expressed by citizens concerning illicit discharges.
- 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 some of the various storm water BMPs available and related benefits. See the Town's webpage for more details http://www.townofdelafield.org/towninfo_stormwater.htm
- The Waukesha County Storm Drain Stenciling Program brochures are available to residents at the Town Hall.

It should also be noted that no Town of Delafield residents visited the Town Hall to review the WPDES annual report document in 2012, and therefore had no feedback regarding the annual report. No other inquiries were made by residents regarding the Town's storm water management practices.

Part II.C. Illicit Discharge Detection and Elimination

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 June of 2012. Locations of these 26 major outfalls have been submitted in previous annual reports. 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 representative inspection report and photograph taken during these dry weather field screenings are provided in Exhibit A.
- 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. The Summary of Inspections is provided as Table 1 in Exhibit A.

As shown in Table 1, there were no illicit discharges/connections detected during the field screenings, but there were a number of maintenance items noted during the inspections. These maintenance issues were reviewed by the Highway Superintendant and are being scheduled for completion.

Part II.D. Construction Site Pollutant Control

Waukesha County conducts the erosion control inspections for developments within the Town of Delafield. In 2012, Waukesha County reported that a total of 12 erosion control inspections were conducted for construction sites located within the Town.

Permits in 2012

1. 3 Permit Applications Received
2. 2 Permits Issued
3. 1 Site Passed Final Inspections
4. 1 Site Failed Final Inspections
5. 2 Sites Received Permit Termination Letters

Enforcement Actions – 1 (Residence on CTH JK)

The Town did not complete any projects that required erosion control measures in 2012.

Part II.E. Post – Construction Storm Water Management

The Town continues to enforce the Post-Construction Storm Water Management program to control the quantity and quality of discharges from areas of new development and redevelopment for sites disturbing more than one acre. This program also establishes procedures to ensure long-term maintenance of all storm water management facilities.

Part II.F. Pollution Prevention

1. Inspection, Maintenance and Inventory of Post-Construction Storm Water Management Facilities

The WPDES permit requires that the Town of Delafield prepare an inventory of all post-construction storm water management facilities. In 2011, the Town started the process with inventory and inspection of one-third of the existing facilities and documenting the results on the Waukesha County BMP database.

In 2012, the Town of Delafield again inspected one-third of the facilities which included 6 wet detention ponds, 4 infiltration basins, 1 grassed swale, and 1 sediment trap, for a total of 12 BMP inspections. The results of the inspections are recorded in the Waukesha County BMP database. An example of the inspection form used and example photos can be seen in Exhibit B.

2. 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 that, for the most part, drain into a storm water quality pond. The Town has 19 catch basins. In 2012, 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 2012 totaled less than 1 cubic yard of material.

3. Street Sweeping Program

The Town of Delafield Highway Department has a skid loader with a mechanical sweeper attachment. All curbed streets were swept once during the year. Approximately 40 man hours were recorded in 2012 and approximately 8 cubic yard of solids were collected by the highway crews. Town crews also performed some hand labor to pick up exposed stone and other debris left by the winter snows. A minimal amount of debris was collected from this process.

4. Disposal of Street Sweeping and Catch Basin Waste

All solids collected were taken directly to the Veolia Environmental Services transfer station in Hartland, Wisconsin for proper disposal.

5. Winter Road Management

The Town used only salt and did not use sand on the roads in 2012. The salt is 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. In 2012 the estimated amount of salt used was 687 tons. The amount of salt used in 2012 was similar to the amount used in 2011 (684.5 tons).

6. Leaves and Grass Clipping Management

The Town has recently begun offering a Yard Waste Pick-Up program to residents through their waste hauler Veolia Environmental Services at a cost of \$1.90 per pick-up. There are 8 pick-ups offered throughout the year beginning in April through November. Resident participation is completely optional. Information on this program is available to residents on the Town's webpage under yard waste removal information.

7. Storm Water Pollution Prevention Planning for Municipal Garages

The Municipal Facilities were inspected in accordance with Storm Water Pollution Prevention Plan on November 13, 2012.

8. Lawn and Garden Fertilizer Application

The Town uses very little fertilizer, and therefore they do not apply fertilizer to areas greater than 5 acres of continuous area. The Town does apply a herbicide product to 13.5 acres of the Sports Commons Park Complex near the intersection of Silvernail Road and Maple Avenue. This herbicide application is applied by a contracted agency (Frontier FS Cooperative) and is strictly a weed control product that does not contain fertilizer.

SUMMARY	
ITEM	AMOUNT
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)	275 gal
Illicit Connections Found / Eliminated	0 / 0
Storm Sewer Inlets Stenciled	0
Leaves Collected	36 CY
Solids from Catch Basin Cleaning	<1 CY
Solids from Street Sweeping	8 CY
Street Sweeper Miles/Hours	40 Hours
Construction Erosion Control Inspections	12
Erosion Control Enforcement Actions	1
Erosion Control Plans Approved	2
Salt Used	687 Tons

Part II.G. Storm Water Quality Management

The initial WinSLAMM pollutant loading analysis for the Town of Delafield was prepared and submitted to WDNR in 2005. The model was revised and resubmitted to WDNR on June 30, 2011 using WinSLAMM version 9.4.0. The analysis results for the 2011 analysis are summarized as follows:

- There was a 23% reduction in annual TSS pollutant loading from the No Controls scenario to the Existing Controls scenario for the Town.
- There was a 22.4% reduction in annual Phosphorus loading from the No Controls scenario to the Existing Controls scenario for the Town.

The numbers listed above are below the 2005 reported results due in part to the impact of the new grassed swale requirements. As part of the WinSLAMM upgrade, the grass swales were evaluated with new guidance from WDNR to assess and model existing grass swales, dated November 24, 2010. The swales were evaluated in the field and with GIS in summer and fall of 2010. With a smaller amount of grassed swales meeting the WDNR requirements, the amount of pollutant removal was reduced.

Part II.H. Storm Sewer System Map

The Town reviewed the current storm sewer system map to verify that it meets all WDNR requirements. The map was evaluated and revised with the most current WDNR swale and developed urban area guidance dated November 24, 2010. An updated version of the map was submitted with the calendar year 2010 submittal to the WDNR.

There have not been any changes to the storm sewer system map this reporting period.

Part II.I.7. Fiscal Analysis of Annual Expenditures

Expenditures in 2012 included:

- \$7,135 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 screening for illicit connection/discharges, inventory of one-third of Town storm water facilities, and keeping elected officials and Town staff apprised of the WPDES permit requirements and associated programs.
- \$2,450 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.

The budget for 2013 includes:

- \$9,000 for the completion of the annual report, dry weather screening for illicit connection/discharges, inventory of one-third of Town storm water facilities (will complete Town inventory), mapping revisions, meetings with the WDNR and Upper Fox River Watershed Communities Group, and follow-up on the local information and education program.
- \$1,500 for street sweeping costs (includes staff time, equipment costs and disposal of debris).
- \$2,450 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.

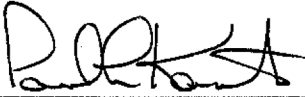
Part II.I.8. Identification of Water Quality Improvements or Degradation

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

Part II.I.9. Report Certification

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

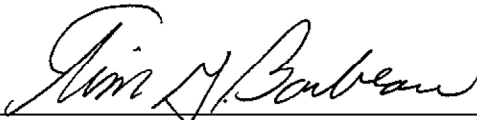
The information above was gathered and prepared under the direction of the Town Board and based on inquiry of the people directly under their control, to the best of their knowledge, the information herein is true, accurate and complete.



Paul L. Kanter, Town Chairman

3/26/13

Date



Tim Barbeau, P.E., RLS, Town Engineer

3/22/13

Date

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

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Exhibit A

IDDE Field Screening Summary and Examples

TABLE 1 - ILLICIT DISCHARGE INSPECTION SUMMARY 6/22/12

Sub Basin	Subwatershed	Pipe Material	Pipe Size	Sampled	Illicit Discharge?	Follow-up Work Required
BRD1-34-3-1	Brandy Brook	CMP	Dual 48" x 30" Ellipse	No	NO	
NMB1-30-3-2	Nemahbin Lake	CMP	42" x 30" Ellipse	No	NO	Clear vegetation from NE invert
PWK1-12-1-1	Pewaukee Lake	MH	60"	No	NO	
PWK1-12-3-8	Pewaukee Lake	RCP	84" x 52" Ellipse	No	NO	
PWK1-14-1-1	Pewaukee Lake	RCP	42" Circle	No	NO	
PWK1-14-2-1	Pewaukee Lake	CMP	5' x 3.5' Ellipse	No	NO	
PWK1-15-4-1	Pewaukee Lake	CMP	48" x 36" Ellipse	No	NO	Clear vegetation from around E invert
PWK1-15-4-2	Pewaukee Lake	RCP	48" x 24" Ellipse	Yes	NO	
PWK1-22-1-1	Pewaukee Lake	RCP	24" Circle	No	NO	
PWK1-22-2-1	Pewaukee Lake	RCP	Dual 36" Circle	No	NO	
PWK1-22-4-1	Pewaukee Lake	CMP	36" Circle	No	NO	
PWK1-23-1-1	Pewaukee Lake	RCP	Dual 24" Circle	No	NO	
PWK1-23-2-1	Pewaukee Lake	CMP	Dual 36" Circle	Yes	NO	
PWK1-23-4-1	Pewaukee Lake	CMP	30" x 36" Ellipse	Yes	NO	
PWK1-24-3-1	Pewaukee Lake	CMP	54" Circle	Yes	NO	
PWK1-24-4-2	Pewaukee Lake	RCP	6' x 6' Box	No	NO	
PWK1-26-1-1	Pewaukee Lake	CMP	Dual 45" Circle	No	NO	Clear vegetation from North invert
PWK1-26-1-2	Pewaukee Lake	CMP	40" x 32" Ellipse	No	NO	
PWK1-26-2-1	Pewaukee Lake	CMP	Dual 36" Circle	Yes	NO	
PWK1-26-2-2	Pewaukee Lake	RCP	60" x 36" Ellipse	No	NO	Remove tree from entrance of south invert on east side of outfall
SCP1-31-3-1	Scuppernong Creek	CMP	Dual 24" x 34" + Tee 18"	No	NO	Reconstruct N/S culvert, existing culvert has crumbling headwalls
SCP2-28-1-1	Scuppernong Creek	CMP	Dual 36" x 24" Ellipse	No	NO	Clear vegetation from north invert
SCP2-28-1-2	Scuppernong Creek	CMP	Dual 36" x 24" Ellipse	No	NO	Clear vegetation from South inverts
SCP2-28-3-1	Scuppernong Creek	CMP	48" x 32" Ellipse	No	NO	Clear vegetation from both inverts
SCP2-33-3-1	Scuppernong Creek	RCP	Dual 36" Circle	No	NO	
SCP2-33-4-1	Scuppernong Creek	CMP	52" x 36" Ellipse	No	NO	Clear vegetation from east invert



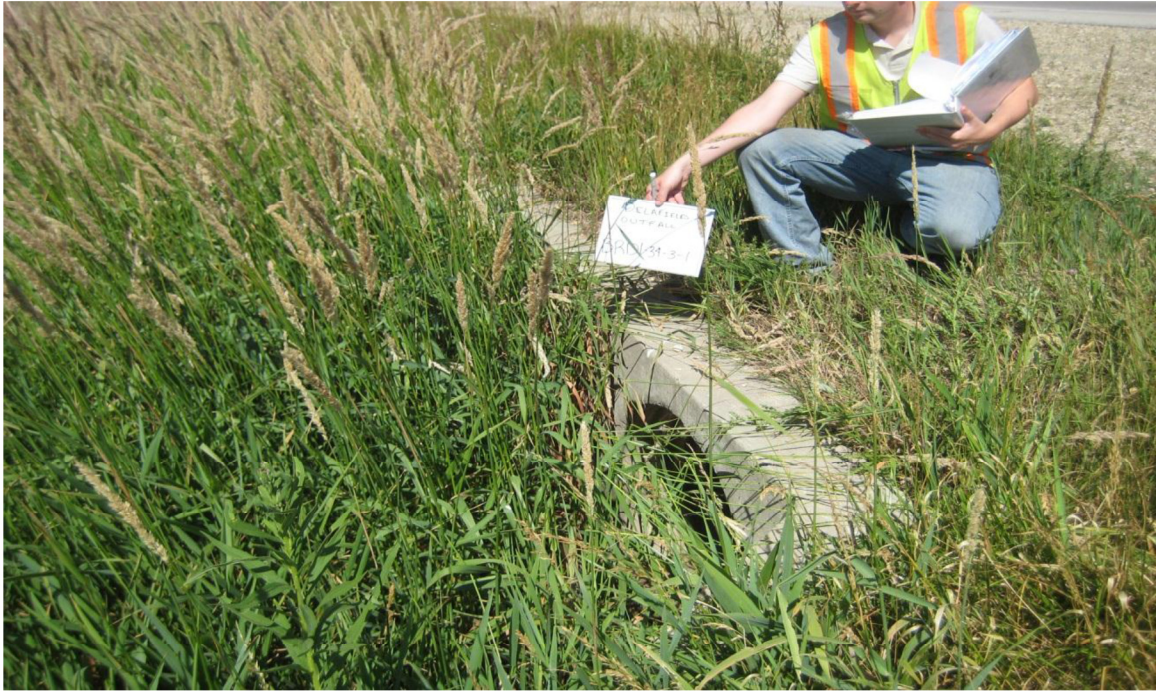
Visual Inspection Form
For Illegal Connection/Illicit Discharge
WPDES Permit No. WI-S050105-2

Outfall ID	BRD1-34-3-1		
Date of Last Rainfall	6/18/12 > .02"		
Date Inspection Performed	6/22/12		
Name of Inspector	DGH JWA		
Receiving Water	Brandy Brook		
M.H. or Outfall (Circle One)	M.H. <u>Outfall</u>		
Pipe Size	2 48" x 30"		
Pipe Material (Circle One)	<u>RCP</u> CMP PVC HDPE Steel DI VCP Other		
Color (Circle One)	Clear Yellow Gray Orange Brown Green Red Other		
Turbidity (Circle One)	Clear Slightly Cloudy Cloudy Opaque		
Surface Sheen (Circle One)	None Oil Gasoline Scum Unknown		
Odor (Circle One)	None Oil Decaying Vegetation SO ₂ Fuel Sewage Methane Unknown		
Pipe Active (Circle One)	<u>No</u> Trickle Moderate Substantial		
IF FLOW IS OBSERVED, WATER SAMPLING MUST BE CONDUCTED TO DETERMINE IF AN ILLICIT DISCHARGE IS PRESENT.			
Parameter	Expected Range	Actual Parameter Reading	
pH Level*	6.0 - 9.0		
Total Chlorine Level*	< 0.2 mg/L		
Total Copper Level*	< 0.1 mg/L		
Total Phenol Level*	< 0.5 mg/L		
Detergents Level*	< 0.25 mg/L		
Water Temperature	-	°F	

* Expected ranges represent maximum readings as used by the City of Milwaukee in their Illicit Discharge Monitoring Program

NOTES
No Water Present

PHOTO INSET
2 Photos



BRD1-34-3-1 – South Invert



BRD1-34-3-1 – North Invert

Exhibit B

Post-Construction BMP Inspections

Example Inspection Form

And

Photos

Wet Detention Pond Inspection Form
Town of Delafield, WI

Project Identifier: LAKESIDE CONSERVANCY SUBDIVISION
WET DETENTION POND Inspection Date: 8/14/12

BMP Location: OUTLET #7 BMP Identifier: 25
DELT 0767121

Code Key

N/A = Not Applicable	M = Monitor (potential for future problem)
NP = Not a Problem	WN = Work Needed

INFLOW POINTS

Assessment	Code	Comments
Obstruction: vegetation/debris/sediment	NP	
Erosion/undercutting	NP	
Displacement of fabric/rip rap	NP	
Pipe Condition	NP	
Other		

FOREBAY

Assessment	Code	Comments
Sediment/ debris accumulation	N/A	NO FOREBAY IN POND
Side slope erosion	N/A	
Invasive vegetation	N/A	
Other		

VEGETATED SHELF / MAIN TREATMENT AREA

Assessment	Code	Comments
Visible pollution / muddiness	NP	
Sediment / debris accumulation	N/A	TO BE DETERMINED LATER
Plants are dead, diseased, or dying	NP	
Vegetation length (too short/too long)	NP	
Bare soil / erosive gullies	M	BARE SOIL VISIBLE DUE TO LOW WATER LEVEL
Algae cover (estimate %)	0	
Invasive vegetation (estimate %)	0	
Other		

EMBANKMENT

Assessment	Code	Comments
Erosion and/or loss of dam material	NP	
Shrubs / trees present	M	A FEW TREES ARE PRESENT
Animal burrows	NP	
Soft spots or boggy areas	NP	
Other		

OUTLET DEVICE

Assessment	Code	Comments
Obstruction: vegetation / debris / sediment	NP	
Erosion/undercutting	NP	
Joint failure / loss of joint material	NP	
Leaking device	NP	
Other		

MISCELLANEOUS

Assessment	Code	Comments
Trash/debris	NP	
Access	NP	
Vandalism	NP	
Fence Condition (if applicable)	N/A	
Fish/ wildlife observations	M	FROGS AND BIRDS ARE PRESENT
Signage (if applicable)	M	NO SWIMMING & NO TRESPASSING
Other		

PHOTOGRAPHS

Attach color digital photographs of the site and structural BMPs including a caption describing each photo.

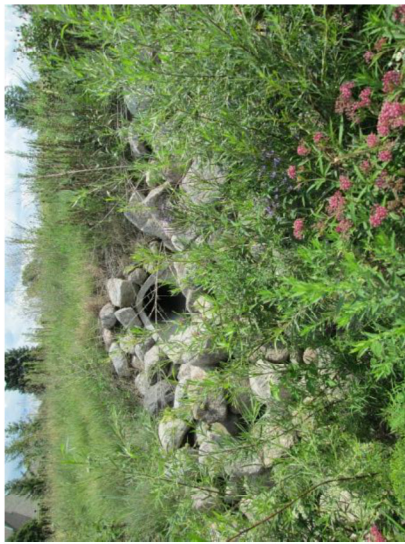
ADDITIONAL COMMENTS

- WATER FLOWS INTO POND BY ONE ROCK LINED SWALE AND TWO RCP CULVERTS. WATER EXITS THE POND VIA AN OUTLET STRUCTURE WHICH DISCHARGES THE WATER TO THE SOUTH.
- WATER LEVEL IN POND IS LOW DUE TO LACK OF RAIN.

Town of Delafield
BMP 25 Inspection
August 14, 2012



Overall BMP 25



Inlet Pipe BMP 25



Outlet BMP 25



Outlet BMP 25