



**ANNUAL REPORT**

**FOR**

**CALENDAR YEAR 2011**

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

**March 2012**

## **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.

The availability of monitoring data for Zion Creek was discussed with DNR at the Upper Fox River Group MS4 Permit Meeting on February 9, 2011. The DNR stated that data was available on their website. The information on the DNR Surface Water Data Viewer shows the monitoring "station with recent data" is at the mouth of Zion Creek. The map shows a symbol for a "new pending" station at Oakton Road. Details for Zion Creek on the DNR impaired waters section states only that it is impaired due to Total Phosphorus and Sediment/Total Suspended Solids.

The Upper Fox River Group stated that more information on the pollutant levels in impaired streams was required to properly develop plans to reduce the pollutants. 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. If additional monitoring is required, the Town will contact the UW-Extension to see if their existing volunteers can obtain extra samples for the Town to have tested for phosphorus and suspended solids.

Review of the existing and/or proposed monitoring results will help determine the level of pollutant reduction required to remove Zion Creek from the impaired list. After that determination is made, the Town will determine a strategy to reduce pollutants from the Town's MS4 drainage to Zion Creek, if required.

### **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 2011 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 2010 WPDES Permit Annual Report on March 30, 2011. No negative feedback was received by the Chairman during his review of the document.
- The Town Engineer has informally discussed storm water issues with the Town's Highway Superintendent and staff throughout 2011, 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 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](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 2011, 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 August of 2011. 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 completed inspection report and photograph taken during these dry weather field screenings is 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. The Town requested a modification in their permit requirements for the inspection frequency for this program from twice per year to once per year. This request was approved by Maureen McBroom on December 23, 2009.

#### **Part II.D. Construction Site Pollutant Control**

Waukesha County conducts the erosion control inspections for developments within the Town of Delafield. In 2011, Waukesha County reported that a total of 36 erosion control inspections were conducted for construction sites located within the Town.

Permits in 2011

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

Enforcement Actions - 1

The Town did not complete any projects that required erosion control measures in 2011.

#### **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 prepare an inventory of all post-construction storm water management facilities. The inventory will be used to track maintenance of these facilities as well as inspection frequency. The existing Waukesha County BMP database includes much of the required information and links the data to the County GIS mapping. The County has stated that they will allow municipalities to enter data into the system.

The Town presented a proposal to DNR that the Town will work with the County to add categories into the County database to fulfill the DNR requirements. The existing database includes some of the required data including BMP type, location (provided in town/range/section format and GIS coordinates), age of facility (as-built verification date), owners (“maintained by”), and whether a Long-Term Maintenance Agreement exists (documents starting with a “3” have LTMA). The County database also includes other useful information like BMP description, project under which the BMP was built, contributing watershed area, and the names of the watershed and subwatershed where the BMP is located. The data proposed to be added to the database would include general condition, inspection results, required maintenance, date maintenance completed, and other comments.

In 2011, the Town of Delafield inspected 6 wet detention ponds, 5 dry detention ponds, 1 bioswale, and 1 bioretention area, for a total of 13 BMP inspections. The results of the inspections can be seen along with data from Waukesha County’s BMP database in Exhibit B. An example of the inspection form used and example photos can be seen in Exhibit C.

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 2011, 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 2011 totaled less than 1 cubic yard of material. The solids collected were taken directly to the Veolia Environmental Services transfer station in Hartland, Wisconsin for proper disposal.

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 2011 and less than 1 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.

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

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 2011. 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 2011 the estimated amount of salt used was 684.5 tons. The salt usage in 2011 was a decrease compared to the approximate 2010 total salt usage of 858 tons.

The Town updated their winter roadway management plan which was submitted to DNR on March 31, 2011 to comply with the requirements set forth in the latest WPDES permit. The Town also submitted the seasonal winter roadway management data to DNR by April 30, 2011 as required in the latest WPDES permit.

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 Town updated their Storm Water Pollution Prevention Plan for the Municipal Facilities and was submitted to DNR on March 31, 2011 to comply with the requirements set forth in the latest WPDES permit.

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 | 0          |
| Number of Meetings with SW Education                | 1          |
| Waste Oil (from trucks)                             | 200 gal    |
| Illicit Connections Found / Eliminated              | 0 / 0      |
| Storm Sewer Inlets Stenciled                        | 0          |
| Leaves Collected                                    | 20 CY      |
| Solids from Catch Basin Cleaning                    | <1 CY      |
| Solids from Street Sweeping                         | <1 CY      |
| Street Sweeper Miles/Hours                          | 40 Hours   |
| Construction Erosion Control Inspections            | 36         |
| Erosion Control Enforcement Actions                 | 1          |
| Erosion Control Plans Approved                      | 4          |
| BMP's Applied For                                   | 1          |
| Salt Used   | 684.5 Tons |

**Part II.G. Storm Water Quality Management**

The WinSLAMM pollutant loading analysis for the Town of Delafield was prepared and submitted to WDNR in 2005. Since there have been upgrades to the WinSLAMM program, the WDNR required communities to rerun their models with a newer version of the program. 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 2011 included:

- a. \$28,022 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.
- b. \$3,500 for Street sweeping charges (includes staff time, equipment costs and disposal of debris).
- c. \$2,350 payment to Waukesha county for the I&E program
- d. \$2,000 annual permit fee
- e. 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 2012 includes:

- \$10,300 for the completion of the annual report, dry weather screening for illicit connection/discharges, updating the Storm Water Pollution Prevention Plan, updating the Winter Road Management Plan, mapping revisions required in the revised permit, meetings with the WDNR and Upper Fox River Watershed Communities Group, and follow-up on the local information and education program.
- \$3,500 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, 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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Paul L. Kanter, Town Chairman

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Date

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

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

|                              |   |
|------------------------------|---|
| <b>Outfall ID</b>            | <b>PWK1-22-2-1</b>  |
| Date of Last Rainfall        | 7/29/11 → .21"  |
| Date Inspection Performed    | 8/0/11  |
| Name of Inspector            | JWH & BGH   |
| Receiving Water              | Pewaukee Lake   |
| M.H. or Outfall (Circle One) | M.H. <u>Outfall</u>   |
| Pipe Size                    | DUAL 36"  |
| Pipe Material (Circle One)   | <input checked="" type="radio"/> RCP <input type="radio"/> CMP <input type="radio"/> PVC <input type="radio"/> HDPE<br>Steel                      DI                      VCP                      Other                                      |
| Color (Circle One)           | <input checked="" type="radio"/> Clear <input type="radio"/> Yellow <input type="radio"/> Gray <input type="radio"/> Orange<br>Brown                      Green                      Red                      Other                           |
| Turbidity (Circle One)       | <input checked="" type="radio"/> Clear <input type="radio"/> Slightly Cloudy <input type="radio"/> Cloudy <input type="radio"/> Opaque  |
| Surface Sheen (Circle One)   | <input checked="" type="radio"/> None <input type="radio"/> Oil <input type="radio"/> Gasoline<br>Scum                      Unknown   |
| Odor (Circle One)            | <input checked="" type="radio"/> None <input type="radio"/> Oil <input type="radio"/> Decaying Vegetation <input type="radio"/> SO <sub>2</sub><br>Fuel                      Sewage                      Methane                      Unknown |
| Pipe Active (Circle One)     | No <input checked="" type="radio"/> Trickle <input type="radio"/> Moderate <input type="radio"/> 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      | 8.3                      |
| Total Chlorine Level* | < 0.2 mg/L     | 0                        |
| Total Copper Level*   | < 0.1 mg/L     | 0                        |
| Total Phenol Level*   | < 0.5 mg/L     | 0                        |
| Detergents Level*     | < 0.25 mg/L    | 0                        |
| Water Temperature     | -              | 60 °F                    |

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

| NOTES                                |
|--------------------------------------|
| WATER ONLY FLOWING IN<br>SOUTH PIPES |
| SAMPLE TAKEN AT SOUTH<br>EAST INVERT |
|                                      |

| PHOTO INSET  |
|--------------|
| PHOTO # 38 E |
| PHOTO # 39 W |





PWK1-22-2-1 E



PWK1-22-2-1 W

## EXHIBIT A 3 of 3

TABLE 1 - ILLICIT DISCHARGE INSPECTION SUMMARY 8/1/11

| 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 weeds and soil from both inverts                                    |
| 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                 | Clear debris from North invert  |
| PWK1-15-4-1 | Pewaukee Lake     | CMP           | 48" x 36" Ellipse       | No      | NO                 |   |
| PWK1-15-4-2 | Pewaukee Lake     | RCP           | 48" x 24" Ellipse       | Yes     | NO                 | Clear vegetation from around both inverts                                 |
| PWK1-22-1-1 | Pewaukee Lake     | RCP           | 24" Circle              | No      | NO                 |   |
| PWK1-22-2-1 | Pewaukee Lake     | RCP           | Dual 36" Circle         | Yes     | NO                 |   |
| PWK1-22-4-1 | Pewaukee Lake     | CMP           | 36" Circle              | No      | NO                 | Clear soil and grass from West invert                                     |
| PWK1-23-1-1 | Pewaukee Lake     | RCP           | Dual 24" Circle         | No      | NO                 |   |
| PWK1-23-2-1 | Pewaukee Lake     | CMP           | Dual 36" Circle         | Yes     | NO                 | Stabilize North section of pipe by invert to prevent more heaving of pipe |
| PWK1-23-4-1 | Pewaukee Lake     | CMP           | 30" x 36" Ellipse       | Yes     | NO                 |   |
| PWK1-24-3-1 | Pewaukee Lake     | CMP           | 54" Circle              | Yes     | NO                 | Clear vegetation from around North invert                                 |
| PWK1-24-4-2 | Pewaukee Lake     | RCP           | 6' x 6' Box             | No      | NO                 |   |
| PWK1-26-1-1 | Pewaukee Lake     | CMP           | Dual 45" Circle         | Yes     | 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                 | Remove tree from entrance of south invert on east side of outfall         |
| PWK1-26-2-2 | Pewaukee Lake     | RCP           | 60" x 36" Ellipse       | Yes     | NO                 |   |
| SCP1-31-3-1 | Scuppernong Creek | CMP           | 40" x 16" Box + 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                 | Cut down tree on east outfall   |
| SCP2-33-4-1 | Scuppernong Creek | CMP           | 52" x 36" Ellipse       | No      | NO                 | Clear vegetation from east invert   |

Town of Delafield Storm Water Facility Inventory - Waukesha County Database & Inspection Results (Exhibit B - 1 of 3)

| BMP TYPE                      | PROJECT   | BMP DESCRIPTION                              | CONTRIB.<br>WATERSHED<br>(AC) | MAINTAINED BY  | MUNICIPALITY      | TOWN,<br>RANGE | SECTION |
|-------------------------------|---|--|-------------------------------|--|-------------------|----------------|---------|
| Wet Detention Basin           | Enclave Of Delafield                            | Lined wet basin on west side                 | 37.46                         | Owners of Lots 1 - 12 of Enclave of Delafield                            | Town of Delafield | 0718           | 11      |
| Permanent Sediment Trap       | Enclave Of Delafield                            | Permanent Sediment B                         | 10                            | Owners of Lots 1 - 12 of Enclave of Delafield                            | Town of Delafield | 0718           | 11      |
| Rain Garden                   | Enclave Of Delafield                            | Regional Rain Gardens                        | 10                            | Owners of Lots 1 - 12 of Enclave of Delafield                            | Town of Delafield | 0718           | 11      |
| Wet Detention Basin           | Lakeside Conservancy Subdivision                | Wet Detention in Outlot 7                    | 30.11                         | Titleholders of Lots 1-32 of Lakeside Conservancy Subdivision            | Town of Delafield | 0718           | 12      |
| Infiltration Basin            | Lakeside Conservancy Subdivision                | Natural Infiltration Area                    | 27.62                         | Titleholders of Lots 1-32 of Lakeside Conservancy Subdivision            | Town of Delafield | 0718           | 12      |
| Wet Detention Basin           | Creekside Meadows Condos Phase I                | Basin 1                                      | 11                            | Creekside Meadows Condominium Association, Inc.                          | Town of Delafield | 0718           | 23      |
| Dry Detention Basin           | Creekside Meadows Condos Phase II               | Basin 2                                      | 3                             | Creekside Meadows Condo Association                                      | Town of Delafield | 0718           | 23      |
| Wet Detention Basin           | Ridge Pointe Center                             | Water Quality Pond SE of Parking Lot         | 1.8                           | Titleholder  | Town of Delafield | 0718           | 22      |
| Infiltration Basin            | Ridge Pointe Center                             | Infiltration Basin SE of Wet Detention Basin | 1.8                           | Titleholder  | Town of Delafield | 0718           | 22      |
|                               |   |  |                               |  |                   |                |         |
| Infiltration Basin            | Shepherds Pass South                            | Basin#1 in Outlot 5                          | 10.89                         | Owners of Lots 1-12 of Shepards Pass South                               | Town of Delafield | 0718           | 25      |
| Wet Detention Basin           | Shepherds Pass South                            | Basin#2 in Outlot 2                          | 6.18                          | Owners of Lots 1-12 of Shepards Pass South                               | Town of Delafield | 0718           | 25      |
| Infiltration Basin            | Equitable Bank                                  | Infiltration Basin NW of Bank                | 0.4                           | Titleholder  | Town of Delafield | 0718           | 22      |
| Underground Storage/Detention | Equitable Bank                                  | Wet Detention Basin North of Proposed Bank   | 2.79                          | Titleholder  | Town of Delafield | 0718           | 22      |
| Wet Detention Basin           | Prairie Wind Farm                               | Wet Detention Basin #1 North of Subdivision  | 14                            | Titleholders of Lots 1 - 24 and 31 - 50 of Prairie Wind Farm Subdivision | Town of Delafield | 0718           | 2       |
| Permanent Sediment Trap       | Prairie Wind Farm                               | Forebay to Wet Pond #3 NE of Subdivision     | 42.6                          | Titleholders of Lots 1 - 24 and 31 - 50 of Prairie Wind Farm Subdivision | Town of Delafield | 0718           | 1       |
| Wet Detention Basin           | Prairie Wind Farm                               | Wet Detention Basin#3                        | 42.6                          | Titleholders of Lots 1 - 24 and 31 - 50 of Prairie Wind Farm Subdivision | Town of Delafield | 0718           | 1       |
| Infiltration Basin            | Grandhaven                                      | Infiltration Basin North Located in Outlot 2 | 3.9                           | Titleholders of Lots 1 - 12 of Grandhaven Subdivision                    | Town of Delafield | 0718           | 15      |
| Infiltration Basin            | Grandhaven                                      | Infiltration Basin South Located in Outlot 1 | 7.9                           | Titleholders of Lots 1 - 12 of Grandhaven Subdivision                    | Town of Delafield | 0718           | 15      |
| Wet Detention Basin           | Maple Fields                                    | Wet Basin East of Cul-de-sac                 | 11.1                          | Titleholders of Lots 1 - 5 of Maplefields                                | Town of Delafield | 0718           | 27      |
| Kettle                        | KE Willows Subdivision                          | Kettle on Lot 3                              | 32.7                          |  | Town of Delafield | 0718           | 27      |
|                               |   |  |                               |  |                   |                |         |
| Dry Detention Basin           | High Point Estates                              | Area 1 Basin in Outlot 3                     | 5.57                          | Lots 1 - 25 of High Point Estates Subdivision                            | Town of Delafield | 0718           | 23      |
| Dry Detention Basin           | High Point Estates                              | Area 2 Basin in Outlot 3                     | 2.55                          | Lots 1 - 25 of High Point Estates Subdivision                            | Town of Delafield | 0718           | 23      |
| Dry Detention Basin           | High Point Estates                              | Area 4 Basin in Outlot 1                     | 5.4                           | Lots 1 - 25 of High Point Estates Subdivision                            | Town of Delafield | 0718           | 23      |
| Dry Detention Basin           | High Point Estates                              | Area 6 Basin in Outlot 2                     | 8.77                          | Lots 1 - 25 of High Point Estates Subdivision                            | Town of Delafield | 0718           | 23      |
| Wet Detention Basin           | Churchside                                      | Detention Basin in NE corner of site         | 10                            |  | Town of Delafield | 0718           | 12      |
| Wet Detention Basin           | St Anthony's Church                             | Basin in Northeast Corner                    | 5.69                          | Titleholder of Basin   | Town of Delafield | 0718           | 24      |
| Grassed Swale                 | Brandybrook Senior Center Parking Lot Extension | Grass swale                                  | 0                             |  | Town of Delafield | 0718           | 35      |
| Infiltration Basin            | Summerhill Subdivision                          | Basin in Outlot 3                            | 90.19                         |  | Town of Delafield | 0718           | 11      |
| Dry Detention Basin           | Summerhill Subdivision                          | Basin in Outlot 2                            | 13.67                         |  | Town of Delafield | 0718           | 11      |
|                               |   |  |                               |  |                   |                |         |
| Wet Detention Basin           | Somerset Moors Subdivision                      | Wet Pond South                               | 40                            | Lake Pewaukee Sanitary District (owner)                                  | Town of Delafield | 0718           | 1       |
|                               |   |  |                               |  |                   |                |         |
| Wet Detention Basin           | Somerset Moors Subdivision                      | Wet Pond North                               | 64                            | Lake Pewaukee Sanitary District (owner)                                  | Town of Delafield | 0718           | 1       |
| Infiltration Basin            | Scuppernong Springs Condominiums                | Infiltration Basin                           | 5.95                          | Owners of Buildings 1 - 22 of Scuppernong Springs Condominiums           | Town of Delafield | 0718           | 28      |
| Bioretention Area             | Scuppernong Springs Condominiums                | Bioretention Device                          | 14.5                          | Owners of Buildings 1 - 22 of Scuppernong Springs Condominiums           | Town of Delafield | 0718           | 28      |
|                               |   |  |                               |  |                   |                |         |
| Constructed Wetland           | Shepherd's Pass                                 | Southwest Water Quality Basin #2             | 10.9                          | Owners of Lots 1 - 32 of Shepard's Pass Subdivision                      | Town of Delafield | 0718           | 25      |
| Grassed Swale                 | Shepherd's Pass                                 | Bioswale                                     | 30.63                         | Owners of Lots 1 - 32 of Shepard's Pass Subdivision                      | Town of Delafield | 0718           | 25      |
|                               |   |  |                               |  |                   |                |         |
| Wet Detention Basin           | Shepherd's Pass                                 | Northwest Water Quality Basin #1             | 27.31                         | Owners of Lots 1 - 32 of Shepard's Pass Subdivision                      | Town of Delafield | 0718           | 25      |

Town of Delafield Storm Water Facility Inventory - Waukesha County Database & Inspection Results (Exhibit B - 2 of 3)

| QUARTER<br>SECTION | WATERSHED            | SUBWATERSHED      | VERIFICATION<br>DATE | VERIFYING ENGINEER    | VERIFYING COMPANY                  | LAST<br>INSPECTION<br>DATE | BMP<br>REFERENCE<br>NUMBER | AS BUILT<br>SURVEY DATE | PROJECT ID |
|--------------------|----------------------|-------------------|----------------------|-----------------------|------------------------------------|----------------------------|----------------------------|-------------------------|------------|
| SE                 | Fox River Watershed  | Pewaukee Lake     | 16-Feb-05            | Igor Vaynberg, PE     | Welch Hanson Associates            | 31-Jan-06                  | 1                          | 16-Feb-05               |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     | 16-Feb-05            | Igor Vaynberg, PE     | Welch Hanson Associates            |                            | 2                          | 16-Feb-05               |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     | 16-Feb-05            | Igor Vaynberg, PE     | Welch Hanson Associates            |                            | 3                          | 16-Feb-05               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     | 18-Jan-04            | Debra A. Tarnow, PE   | Jahnke & Jahnke Associates Inc.    |                            | 25                         | 28-Dec-03               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 26                         |                         |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     | 17-Oct-04            | Robert Williams Jr    | TDI Associates                     |                            | 30                         | 14-Oct-11               |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     | 17-Oct-04            | Rob Williams Jr       | TDI Associates                     |                            | 31                         | 14-Oct-11               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 68                         |                         |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 69                         |                         |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 70                         | 14-Oct-11               |            |
| SW                 | Fox River Watershed  | Pebble Creek      |                      |                       |                                    |                            | 71                         | 14-Oct-11               |            |
| SW                 | Rock River Watershed | Bark River        | 30-Oct-08            | James P Hansen        | Graef                              | 10-Sep-10                  | 85                         | 30-Oct-08               |            |
| SW                 | Rock River Watershed | Bark River        | 30-Oct-08            | James P Hansen        | Graef                              |                            | 86                         | 30-Oct-08               |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     | 21-Mar-04            | Hans D. Hollanger, PE | Jahnke & Jahnke Associates, Inc.   |                            | 87                         | 11-Mar-04               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     | 21-Mar-04            | Hans D. Hollanger, PE | Jahnke & Jahnke Associates, Inc.   |                            | 88                         | 11-Mar-04               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     | 21-Mar-04            | Hans D. Hollanger, PE | Jahnke & Jahnke Associates, Inc.   |                            | 89                         | 11-Mar-04               |            |
| NE                 | Fox River Watershed  | Pewaukee Lake     | 17-Nov-05            | Anthony Zanon, PE     | Jahnke and Jahnke Associates, Inc. |                            | 140                        | 17-Nov-05               |            |
| NE                 | Fox River Watershed  | Pewaukee Lake     | 17-Nov-05            | Anthony Zanon, PE     | Jahnke and Jahnke Associates, Inc. |                            | 141                        | 17-Nov-05               |            |
| SE                 | Fox River Watershed  | Pebble Creek      | 30-Sep-03            | Anthony S. Zannon, PE | Jahnke & Jahnke Associates, Inc.   |                            | 219                        | 21-Oct-03               |            |
| NE                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 258                        |                         |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 259                        | 14-Oct-11               |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 260                        | 14-Oct-11               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 261                        | 14-Oct-11               |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 262                        | 14-Oct-11               |            |
| NW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 263                        |                         |            |
| NE                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 264                        |                         |            |
| SW                 | Fox River Watershed  | Pebble Creek      |                      |                       |                                    |                            | 265                        |                         |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 270                        |                         |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 271                        |                         |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| SW                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 277                        | 14-Oct-11               |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| SE                 | Fox River Watershed  | Pewaukee Lake     |                      |                       |                                    |                            | 278                        | 14-Oct-11               |            |
| SE                 | Rock River Watershed | Scuppernong Creek |                      |                       |                                    |                            | 448                        |                         |            |
| SE                 | Rock River Watershed | Scuppernong Creek |                      |                       |                                    |                            | 449                        |                         |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| NW                 | Fox River Watershed  | Pewaukee Lake     | 17-May-04            | Igor Vaynberg, PE     | Welch Hanson Associates            |                            | 475                        | 14-Oct-11               |            |
| NW                 | Fox River Watershed  | Pewaukee Lake     | 17-May-04            | Igor Vaynberg, PE     | Welch Hanson Associates            |                            | 476                        | 14-Oct-11               |            |
|                    |                      |                   |                      |                       |                                    |                            |                            |                         |            |
| NW                 | Fox River Watershed  | Pewaukee Lake     | 17-May-04            | Igor Vaynberg, PE     | Welch Hanson Associates            |                            | 477                        | 14-Oct-11               |            |



Town of Delafield Storm Water Facility Inventory - Waukesha County Database & Inspection Results (Exhibit B - 3 of 3)

| DOC. NUMBERS              | GEONorthing | GEOEasting | NEXT INSPECTION DATE | GENERAL CONDITION | INSPECTION RESULTS  | REQUIRED MAINTENANCE   | DATE MAINTENANCE COMPLETED | COMMENTS |
|---------------------------|-------------|------------|----------------------|-------------------|---|--|----------------------------|----------|
| 1000006, 3202627          | 397596.3    | 2445277.69 | 31-Aug-12            |                   |   |  |                            |          |
| 1000006, 3202627          | 397476.16   | 2446807.92 | 31-Aug-12            |                   |   |  |                            |          |
| 1000006, 3202627          | 397506.1    | 2446713.11 | 31-Aug-12            |                   |   |  |                            |          |
| 1000010, 3050076          | 398220.32   | 2449938.69 | 31-Aug-12            |                   |   |  |                            |          |
| 1000010, 3050076          | 397079.19   | 2449773.49 | 31-Aug-12            |                   |   |  |                            |          |
| 1000019, 2867539          | 386604.07   | 2447626.33 | 14-Oct-13            | GOOD              | POND DOES NOT SEEM TO HAVE A PERMENANT POOL   | NONE   |                            |          |
| 1000003, 3229465          | 386134.43   | 2446573.68 | 14-Oct-13            | GOOD              | NO DEFECTS PRESENT  | NONE   |                            |          |
| 3452574                   | 387266.47   | 2438384.81 | 31-Aug-12            |                   |   |  |                            |          |
| 3452574                   | 387232.64   | 2438436.33 | 31-Aug-12            |                   |   |  |                            |          |
| 3576349                   | 383058.12   | 2448081.85 | 14-Oct-13            | GOOD              | PRETREATMENT FOREBAY IS COMPLETELY COVERED BY ALGAE, VEGETATION SHOULD BE MONITORED FOR OVERGROWTH                        | NONE   |                            |          |
| 3576349                   | 382593.64   | 2449768.45 | 14-Oct-13            | GOOD              | BARE SOIL WAS VISIBLE DUE TO LOW WATER LEVEL  | NONE   |                            |          |
| 1000146, 3420505, 3622131 | 387624.71   | 2437314.67 | 31-Aug-12            |                   |   |  |                            |          |
| 1000146, 3420505, 3622131 | 387570.92   | 2437562.04 | 31-Aug-12            |                   |   |  |                            |          |
| 1000038                   | 404027.89   | 2447786.98 | 31-Aug-12            |                   |   |  |                            |          |
| 1000038                   | 403226.85   | 2448722.21 | 31-Aug-12            |                   |   |  |                            |          |
| 1000038                   | 403365.24   | 2448918.93 | 31-Aug-12            |                   |   |  |                            |          |
| 1000037                   | 394297.12   | 2440410.66 | 31-Aug-12            |                   |   |  |                            |          |
| 1000037                   | 394137.57   | 2440386.41 | 31-Aug-12            |                   |   |  |                            |          |
| 1000030                   | 382091.09   | 2440015.74 | 31-Aug-12            |                   |   |  |                            |          |
| 1000031                   | 384888.44   | 2440778.88 | 31-Aug-12            |                   |   |  |                            |          |
| 1000032                   | 387317.71   | 2443570.14 | 14-Oct-13            | FAIR              | TREES AND SHRUBS ARE PRESENT AT OUTLET, TREES AND SHRUBS ARE PRESENT ON THE EMBANKMENT                                    | TREES AND SHRUBS THROUGHOUT POND NEED TO BE REMOVED  |                            |          |
| 1000032                   | 387474.49   | 2443743.61 | 14-Oct-13            | GOOD              | SMALL AMOUNT OF EROSION PRESENT AT OUTLET PIPE  | NONE   |                            |          |
| 1000032                   | 387753      | 2443761.93 | 14-Oct-13            | FAIR              | EROSION PRESENT AT INLET TO POND  | EROSION BY INLET TO POND NEEDS TO BE FIXED   |                            |          |
| 1000032                   | 388097.52   | 2443764.87 | 14-Oct-13            | GOOD              | VEGETATION PRESENT AT INLET   | NONE   |                            |          |
| 1000036                   | 400726.13   | 2449772.22 | 31-Aug-12            |                   |   |  |                            |          |
| 1000033                   | 390510.04   | 2453104.03 | 31-Aug-12            |                   |   |  |                            |          |
| 1000035                   | 376517.97   | 2442962.65 | 31-Aug-12            |                   |   |  |                            |          |
| 1000034                   | 398540.42   | 2446369.56 | 31-Aug-12            |                   |   |  |                            |          |
| 1000034                   | 397593.22   | 2446457.8  | 31-Aug-12            |                   |   |  |                            |          |
| 1000039, 2528235          | 402856.18   | 2449575.54 | 14-Oct-13            | FAIR              | SEDIMENT AND VEGETATION OBSTRUCT FLOW INTO POND, RIP RAP SEEMS TO BE DISPLACED, A FEW TREES ARE GROWING IN THE EMBANKMENT | SEDIMENT AND VEGETATION NEED TO BE REMOVED FROM INLET OF POND AND RIP RAP PRESENT IN FLOW CHANNEL NEEDS TO BE REPOSITIONED |                            |          |
| 1000039, 2528235          | 402901.89   | 2451575.74 | 14-Oct-13            | GOOD              | ALGAE COVERED PORTIONS OF FOREBAY AND MAIN TREATMENT AREA, MULTIPLE SHRUBS ARE GROWING ON EMBANKMENT                      | NONE   |                            |          |
| 3534394                   | 382025.06   | 2435609.59 | 31-Aug-12            |                   |   |  |                            |          |
| 3534394                   | 381361.45   | 2434954.8  | 31-Aug-12            |                   |   |  |                            |          |
| 1000009                   | 383576.11   | 2448032.54 | 14-Oct-13            | FAIR              | TREES ARE PRESENT AT INLTET TO POND, TREES ARE PRESENT ON EMBANKMENT, LOW WATER LEVEL IN POND                             | REMOVE TREES PRESENT AT INLET AND ON EMBANKMENT  |                            |          |
| 1000009                   | 384325.78   | 2448104.56 | 14-Oct-13            | GOOD              | NO VISIBLE SEDIMENT ACCUMULATION  | NONE   |                            |          |
| 1000009                   | 385362.57   | 2449693.2  | 14-Oct-13            | GOOD              | BARE SOIL WAS VISIBLE DUE TO LOW WATER LEVEL, ONE SOFT SPOT WAS IDENTIFIED IN THE SOUTHWEST PORTION OF THE POND           | NONE   |                            |          |

# Wet Detention Pond Inspection Form

## Town of Delafield, WI

Project Identifier: SONGBR SBT MODELS SOUTH POND Inspection Date: 10/14/11

BMP Location: CONTAINERED IN PAVEMENT BMP Identifier: 277

Code Key DEL70724071 - JUST BENTON  
HOMES W/ADJACENT N41W28660 INFILTRAL DRY

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 | WN   | CLEAR OBSTRUCTION FROM THE FLOW POINT TO POND  |
| Erosion/undercutting                    | NP   |  |
| Displacement of fabric/rip rap          | WN   | RIP RAP LOOKS LIKE IT NEEDS TO BE REPOSITIONED |
| Pipe Condition                          | N/A  | A SWALE FEEDS THE POND                         |
| Other                                   |      |  |

Photo 1239  
NORTH

### FOREBAY

| Assessment                    | Code | Comments   |
|-------------------------------|------|--|
| Sediment/ debris accumulation | N/A  | SEDIMENT ACCUMULATION WILL BE DETERMINED AT A LATER DATE |
| Side slope erosion            | NP   |  |
| Invasive vegetation           | NP   |  |
| Other                         |      |  |

### VEGETATED SHELF / MAIN TREATMENT AREA

| Assessment                             | Code | Comments   |
|--|------|--|
| Visible pollution / muddiness          | NP   |  |
| Sediment / debris accumulation         | N/A  | SEDIMENT ACCUMULATION WILL BE DETERMINED AT A LATER DATE |
| Plants are dead, diseased, or dying    | NP   |  |
| Vegetation length (too short/too long) | NP   |  |
| Bare soil / erosive gullies            | NP   |  |
| Algae cover (estimate %)               | NP   | 20%  |
| Invasive vegetation (estimate %)       | NP   |  |
| Other                                  |      |  |

Photo 1240  
WEST

## EMBANKMENT

| Assessment                          | Code | Comments  |
|-------------------------------------|------|---|
| Erosion and/or loss of dam material | NP   |   |
| Shrubs / trees present              | M    | A FEW TREES ARE PRESENT,<br>MAY NEED TO REMOVE THEM |
| Animal burrows                      | NP   |   |
| Soft spots or boggy areas           | NP   |   |
| Other                               |      |   |

## OUTLET DEVICE

| Assessment                                  | Code | Comments   |
|---|------|--|
| Obstruction: vegetation / debris / sediment | M    | ROCKS TOP OF OF OUTLET ARE NEAR<br>TO BE REMOVED |
| Erosion/undercutting                        | NP   |  |
| Joint failure / loss of joint material      | NP   |  |
| Leaking device                              | NP   |  |
| Other                                       |      |  |

Photo 3  
South view

## MISCELLANEOUS

| Assessment                      | Code | Comments                       |
|---------------------------------|------|--------------------------------|
| Trash/debris                    | NP   |                                |
| Access                          | NP   |                                |
| Vandalism                       | NP   |                                |
| Fence Condition (if applicable) | N/A  |                                |
| Fish/ wildlife observations     | NP   | BIRDS AND FISH ARE PRESENT     |
| Signage (if applicable)         | NP   | NO SIGNAGE SEEN AND<br>PRESENT |
| Other                           |      |                                |

## PHOTOGRAPHS

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

## ADDITIONAL COMMENTS

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EXHIBIT C (3 of 4)



Inlet BMP 277 N



Overall BMP 277 W



Outlet BMP 277 SW