



CITY OF
Crystal Lake
ILLINOIS

May 30, 2012

VIA Email and Certified Mail, Return Receipt Requested

Illinois Environmental Protection Agency
Water Pollution Control
Compliance Assurance Section #19
1021 North Grand Avenue East
Post Office Box 19276
Springfield, IL 62794-9276

RE: Permit ILR400179 2012 Annual Report

Greetings:

Transmitted herein, please find the 2012 Annual Report for the City of Crystal Lake's MS4 Permit covering the period of March 2011 through March 2012.

Please contact me should you have any questions or require any additional information.

Sincerely,

Victor Ramirez
Director of Public Works

Attachments



Illinois Environmental Protection Agency

Bureau of Water • 1021 N. Grand Avenue E. • P.O. Box 19276 • Springfield • Illinois • 62794-9276

Division of Water Pollution Control ANNUAL FACILITY INSPECTION REPORT

for NPDES Permit for Storm Water Discharges from Separate Storm Sewer Systems (MS4)

This fillable form may be completed online, a copy saved locally, printed and signed before it is submitted to the Compliance Assurance Section at the above address. Complete each section of this report.

Report Period: From March, 2011 To March, 2012

Permit No. ILR40 0179

MS4 OPERATOR INFORMATION: (As it appears on the current permit)

Name: City of Crystal Lake Mailing Address 1: 100 W. Woodstock Street
Mailing Address 2: _____ County: McHenry
City: Crystal Lake State: IL Zip: 60014 Telephone: 815-459-2020
Contact Person: Victor Ramirez Email Address: vramirez@cystallake.org
(Person responsible for Annual Report)

Name(s) of governmental entity(ies) in which MS4 is located: (As it appears on the current permit)

City of Crystal Lake

THE FOLLOWING ITEMS MUST BE ADDRESSED.

A. Changes to best management practices (check appropriate BMP change(s) and attach information regarding change(s) to BMP and measurable goals.)

- | | | | |
|--|--------------------------|---|--------------------------|
| 1. Public Education and Outreach | <input type="checkbox"/> | 4. Construction Site Runoff Control | <input type="checkbox"/> |
| 2. Public Participation/Involvement | <input type="checkbox"/> | 5. Post-Construction Runoff Control | <input type="checkbox"/> |
| 3. Illicit Discharge Detection & Elimination | <input type="checkbox"/> | 6. Pollution Prevention/Good Housekeeping | <input type="checkbox"/> |

B. Attach the status of compliance with permit conditions, an assessment of the appropriateness of your identified best management practices and progress towards achieving the statutory goal of reducing the discharge of pollutants to the MEP, and your identified measurable goals for each of the minimum control measures.

C. Attach results of information collected and analyzed, including monitoring data, if any during the reporting period.

D. Attach a summary of the storm water activities you plan to undertake during the next reporting cycle (including an implementation schedule.)

E. Attach notice that you are relying on another government entity to satisfy some of your permit obligations (if applicable).

F. Attach a list of construction projects that your entity has paid for during the reporting period.

Any person who knowingly makes a false, fictitious, or fraudulent material statement, orally or in writing, to the Illinois EPA commits a Class 4 felony. A second or subsequent offense after conviction is a Class 3 felony. (415 ILCS 5/44(h))


Owner Signature:
Victor Ramirez
Printed Name:

5/30/12
Date:
Director of Public Works
Title:

EMAIL COMPLETED FORM TO: epa.ms4annualinsp@illinois.gov

or Mail to: ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
WATER POLLUTION CONTROL
COMPLIANCE ASSURANCE SECTION #19
1021 NORTH GRAND AVENUE EAST
POST OFFICE BOX 19276
SPRINGFIELD, ILLINOIS 62794-9276

IL 532 2585 WPC 691 Rev 6/10 This Agency is authorized to require this information under Section 4 and Title X of the Environmental Protection Act (415 ILCS 5/4, 5/39). Failure to disclose this information may result in: a civil penalty of not to exceed \$50,000 for the violation and an additional civil penalty of not to exceed \$10,000 for each day during which the violation continues (415 ILCS 5/42) and may also prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

CITY OF CRYSTAL LAKE

NPDES Phase II

Annual Report

(Reporting Year March 2011 to March 2012, Permit No. ILR400179)

Prepared by The City of Crystal Lake Public Works Department

The City of Crystal Lake has been increasing its vigilance to its ever expanding Municipal Separate Storm Sewer System (MS4) Program. While the maintenance and management of the storm sewer system has been a priority of the City in the past, Crystal Lake's MS4 Program will be developed further and incorporated into more aspects of the City's operations. This report will reflect the changes made to the BMPs, the City's status of compliance with permit conditions and a history of the construction projects conducted over the last year. In addition, this document will report the City's new goals and objectives for the coming years, and the status and summary of the past year's stormwater activities among other facts and analysis. The City of Crystal Lake has worked diligently over the last year to increase the status of its MS4 Program. This document it intended to report the status of the City's program, and to establish a foundation for the future of the MS4 Program in Crystal Lake.

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Section A: Changes to Best Management Practices

- A. Public Education and Outreach**
- B. Public Participation/Involvement**
- C. Illicit Discharge Detection and Elimination**
- D. Construction Site Runoff Control**
- E. Post-Construction Runoff Control**
- F. Pollution Prevention/Good Housekeeping**

Section B: Status of Compliance with Permit Conditions

The status of BMPs and measurable goals performed over the last year are described below.

A. Public Education and Outreach

A.1 Distribute Paper Materials

Measureable Goals –

- *The ongoing task of developing questionnaires pertaining to stormwater management continued throughout the year. Staff was able to obtain feedback from the public at its many functions.*

A.3 Public Service Announcements

Measureable Goals –

- *Two articles were produced for the City's newsletter. They focused more on the proper care and maintenance of sanitary sewers, however the content can still be considered educational in the fact that the reader can obtain a better understanding of the differences between the two types of sewer systems present in their community. The summer 2011 edition newsletter made the community aware that April 22, 2011 marked the celebration of Earth Day in which the City highlighted its environmental awareness by completing three pilot projects.*

A.4 Community Event

Measureable Goals –

- *Final construction of the Community Rain garden was completed in spring of 2011. A formal planting invitation dated May 9th, 2011 was publicized. The rain garden ended up being planted on May 9th and May 10th with various members of the Clean Air Counts Committee and local Girl Scout Troops attending. Approximately 40 people assisted with the planting making it a big success.*
- *Once again the City's Police Department sponsored its annual Drug Take Back Initiative Program in April and October 2011. There were a total of 16 boxes collected during these two events.*
- *The City continues to work with local organizations and events to educate the public about sustainable items.*

A.6 Other Public Education

Measureable Goals –

- *The City's website is continually updated to ensure the latest information is available to the public. The Crystal Lake Watershed brochure contains the most up-to-date information and therefore a specific update was not required this year.*

- A "Green Initiatives" page was included on the City webpage with basic information such as Rain Barrels and Bicycle Friendly Community Initiatives.

B. Public Participation/Involvement

B.2 Educational Volunteer

Measureable Goals –

- Throughout the year elementary school tours of City departments gave the Public Works staff an opportunity to educate students about storm sewers and proper stormwater management in their daily lives. In addition to this, the Public Works Department was part of a "Trucks on Parade Day" which gave staff the opportunity to educate children on the equipment used in sanitary and storm sewer maintenance.

B.3 Stakeholder Meeting

Measureable Goals –

- Staff continued to make progress with regards to the construction of one of the flooding improvements outlined in the Flood Study of 2009. Design of Area 1B and 1D are nearing completion and stakeholder meetings were held on February 29, 2012 and March 19, 2012. Area 2 was put on hold until April of 2012 to focus efforts on Area 1B and 1D.

B.6 Program Coordination

Measureable Goals –

- November 17th, 2011 marked the kick-off meeting for the Woods Creeks Watershed Study which is a collaborative effort between the Village of Algonquin, Village of Lake In The Hills, City of Crystal Lake and the Crystal Lake Park District. Staff continues to attend the various meetings regarding this study.
- The City has been attending and participating in the Silver Creek and Sleepy Hollow Creek Watershed planning coalition meetings.
- On May 17th, 2011 the City Council approved The Rain Barrel Incentive Program to further promote water conservation and the use of rain barrels.
- Staff did not formally create a Citywide Sustainable Infrastructure Program; however, the Departments continue to coordinate with each other with sustainability now added as an agenda item in our monthly coordination meetings.

B.7 Other Public Involvement

Measureable Goals –

- The Annual Clean-Up Day hosted by the Chamber of Commerce and Park District organization was held in April 2011.

- *Staff was able to distribute over two dozen rain barrel brochures to the public during the annual Chamber of Commerce Expo.*

C. Illicit Discharge Detection and Elimination

C.5 Illicit Source Removal Procedures

Measureable Goals –

- *The discussion of sales and application of coal tar sealants has escalated to a higher level in the governmental system therefore the City has taken a step back for now until we obtain more information. City staff continues to attend the McHenry County Groundwater Taskforce meetings.*
- *The discussion of a salt storage ordinance for commercial and industrial properties remains under review for consideration at this time.*

C.6 Program Evaluation and Assessment

Measureable Goals –

- *The City's pre-treatment coordinator continues to play a vital role in the inspection program. While performing the inspection process at the sanitary level, this gives the individual an opportunity to review the user's stormwater management practices. Please see Section C of this document for examples of this. While the City's storm sewer layer of GIS remains in development, staff has discussed initiating an outfall inspection program.*

C.8 Pollutant Field Testing

Measureable Goals –

- *Sampling, testing, and documenting of influent and effluent flows to various lakes and stream throughout the community have continued. See Section C of this document.*
- *Sampling is completed quarterly to establish a baseline for the watershed area. See Section C of this document for priority pollutant testing results.*

C.10 Other Illicit Discharge Controls

Measureable Goals –

- *Broaden integrated pest management and naturalized lawn care programs throughout other City owned properties.*
- *The discussion of non-phosphorous fertilizer usage within the community remains under review for consideration at this time. The City has eliminated the usage of this product at many of its properties.*

D. Construction Site Runoff Control

D.1 Regulatory Control Program

Measureable Goals –

- *The City is in the process of finalizing recertification with the County for its stormwater management ordinance.*
- *Recertification with McHenry County is in process.*
- *An amendment was proposed by staff with regard to watershed requirements in existing urbanized areas; however, City Council directed staff to refer any variations from the watershed requirements for existing urbanized areas to the Council for case-by-case consideration.*
- *The City continues to work with the County on enforcing watershed requirement in unincorporated areas. The County is working to include the watershed requirements into their ordinance; however, due to limited staff is not complete at this time. Targeting 2012 completion for McHenry County Stormwater Commission consideration.*

D.2 Erosion and Sediment Control BMP's

Measurable Goals –

- *Enforcement and documenting erosion and sediment control continues on a regular basis.*
- *Explore ways of enhancing the documentation process Inspectors are utilizing comprehensive forms developed by the City's stormwater consultant. Staff worked with the City's Stormwater Consultant to enhance the documentation process.*

D.3 Other Waste Control Programs

Measureable Goals –

- *An ordinance regulating waste and debris within construction sites remains under review for consideration.*

D.4 Site Plan Review Procedures

Measurable Goals –

- *Plan review procedures are followed on a continual basis.*
- *One Civil Engineer is CFM certified and one Civil engineer and two Engineering Technicians are CPESC certificated. Staff is working towards identifying possible certification areas which would be valuable to the City.*

D.5 Public Information Procedures

Measureable Goals –

- *Responding and tracking to all complaints continues on a regular basis.*
- *A proposed agreement with McHenry County Soil and Water Conservation District to coordinate water quality related complaints remains under review for consideration at this time.*
- *The development of a Watershed Developer's Handbook, which will summarize the requirements both before and after a development is constructed in the watershed, has not been completed at this time due to the lack of construction in this area.*

D.6 Site Inspection/Enforcement Procedures

Measureable Goals –

- *Site review inspection procedures continue on a regular basis.*
- *Staff is working towards identifying possible certification areas which would be valuable to the City.*

E. Post-Construction Runoff Control

E.2 Regulatory Control Program

Measureable goals -

- *Enforcement of the Crystal Lake Stormwater Ordinance continues on a regular basis.*

E.3 Long Term O&M Procedures

Measureable Goals -

- *Annual site inspections will be enhanced and continue on a regular basis.*
- *Develop and distribute a sample maintenance plan.*

E.4 Pre-construction Review of BMP Designs

Measureable Goals –

- *This review process continues on a regular basis.*

E.5 Site Inspections During Construction

Measureable Goals –

- *Track all site inspections continues on a regular basis.*

F. Pollution Prevention/Good Housekeeping

F.1 Employee training Program

Measureable Goals –

- *Public Works staff attending McHenry County's "Sensible Salting" workshop. Programs like this help in educating operators on the affects winter salting operations can have on our waters as well as the surrounding environment.*

Engineering continues to attend classes regarding soil erosion and sediment control and sustainability.

F.2 Inspection and Maintenance Program

Measureable Goals –

- The street sweeping has collected and discarded 3,081 cubic yards of debris from the roadways. The City also collected 1,688 leaf bags at its brush drop off site.*
- With the last three winter seasons producing record breaking snow falls to virtually no snow fall, salting and de-icing agent quantities are inconsistent. However, data in Section C of this document does clearly show a reduction in salt and calcium products and an increased use in less harmful de-icing agents.*
- Public Works has decided to make the organization of its sanitary sewer plan the basis of its storm sewer cleaning program. There will be areas of the community that will be cleaned annually due to aging pipes and mature tree growth while newer sections will be on staggered intervals.*
- The City's GIS System is currently going through a considerable revision; therefore progress on the storm layer has been postponed. The new format will allow for more users to access data and easily edit the information.*

F.3 Municipal Operations Storm Water Control

Measureable Goals –

- The creation of a rain garden ordinance and brochure, similar to the rain barrel ordinance and brochure is still in development.*

F.6 Other Municipal Operations Controls

Measureable Goals –

- Public Works management has attended workshops on the CCDD regulation and has implemented changes in its dumping practices. Piles of debris are separated in better detail and the potential for debris runoff from these piles has been isolated to that specific area.*
- Quarterly scheduling of the Spill Prevention Control and Countermeasure (SPCC) program was completed.*

Section C: Information and Data Collection Results

Documentation and recordkeeping supporting the many areas of this annual report are retained with the various Divisions of the organization and are available for review at any time. Below you find some samples for review.

Street Sweeping Collection Totals (in cubic yards)

March, 2011	121
April, 2011	157
May, 2011	148
June, 2011	122
July, 2011	66
August, 2011	72
September, 2011	111
October, 2011	1,060
November, 2011	1,050
December, 2011	125
January, 2012	21
February, 2012	21
March, 2012	79
Total Cubic Yards	3,081

Leaf Collection Totals

The City collected 1,688 leaf bags at its brush drop off site.

De-icing Product Totals

NOI	Salt	Calcium	Supermix
Year	(tons)	(gallons)	(gallons)
2011-2012	2525.25	3835.00	13853.50
2010-2011	4723.00	9269.00	1825.00
2009-2010	4208.00	4955.00	3370.00

Illicit Discharge Detection and Elimination:

(March 2011 thru March 2012)

1) Businesses

- There were no illicit discharges documented during this reporting period.

2) Residential and Commercial Areas

- Hydraulic Fluid on Streets in Village Road Area (April 28, 2011) - A refuse disposal truck from MDC Environmental Services, Inc. leaked hydraulic oil

onto the street in various places around a two block area north of Village Road. The incident occurred during routine trash pick-up. As part of the cleanup, approximately 1000 pounds of oil dry was spread over the two block radius.

The City inspected the areas affected by the oil leak, and nearby storm sewers. There was no oil observed in the sewers, and oil residues did not discharge into the storm drains. MDC subsequently cleaned the streets, and an experimental product was also used on the stains in June. It was determined that the weathering away of the stains should ultimately occur.

- Gasoline Spill / Leak at Pingree and Three Oaks Road (November 30, 2011) – An automobile hit a street sign at this location. The gas tank was damaged and leaked on the street to a parking lot, which extended about two and one half blocks. The City Fire Department was first on the scene, and oil dry was applied to the gasoline spill below the auto's gas tank. There was no visual evidence that the spill discharged into any storm or sanitary sewers. The adjacent Three Oaks Recreation Area was not affected.
- Film on Storm Water Retention Basin after Neighborhood Fire (July 26, 2011) – A resident at 1324 Snowberry Lane was concerned about storm water runoff onto his empty lot, which contains the retention pond. A scum of white / grey film was observed on the water surface after the fire, which occurred at 1344 Gardina Vista. Water samples were subsequently collected from the floating scum layer as well as the clear water in the pond. Elevated fecal concentrations were noted in the scum layer. All constituents within the clear water were within acceptable ranges for urban runoff. No other action was taken.
- Red Sediment in Pond / Ditch to Cove Pond (March 2012) – There is a rusting pipe believed to be from old farm tile connected to Lippold Park that discharges into Cove Pond. The water in this ditch is clear, but the rusting pipe is corroding creating the red looking sediment. Water samples reflected the higher iron content within the ditch. No further action was necessary.

3) Storm Water Receiving Bodies – Monitoring

- Crystal Lake – samples are collected every other week at the following locations:
 - Cove Pond discharge pipe into the lake off of North Shore Drive
 - Lake influent into Crystal Creek at Riverside Dr. and Lake Avenue
 - Pinewood and Honeysuckle Dr. inlet into Crystal Lake
 - Effluent discharge manhole from Lippold Park wetlands (off Thornwood Lane)
 - Influent discharge manhole adjacent to Lippold Park golf driving range and wetlands (collected quarterly)
 - Lippold Park – East, Center, and West (all are adjacent to Route 176)
- Cove Pond – samples are collected every other week at the following locations:

- Influent culvert pipe into Cove Pond near Green Oaks Drive / Crystal Lake Avenue
- Effluent discharge pipe from Cove Pond along North Shore Drive
- Groundwater Monitoring
 - Six (6) watershed wells northwest of Crystal Lake are monitored quarterly.

Note: Water elevations are recorded at some of the above locations during the monitoring events. Water volumes and depths are recorded at each well location.

The parameters analyzed at the above locations include the following:

- Total Suspended Solids (TSS)
- Carbonaceous Biological Oxygen Demand (CBOD)
- Ammonia-N
- Total Phosphorous
- Fecal Coliform
- Total Coliform
- Chlorides
- Zinc

The following locations from the wastewater plants are sampled weekly:

- Drainage Ditch to Squaw Creek /unnamed ditch to Sleepy Hollow along railroad tracks downstream from Wastewater Treatment Plant #3 (collected once per week). Parameters include the following:
 - Temperature
 - pH
- Wastewater Treatment Plant #2 (collected once per week) – Crystal Creek (Upstream), (Cooling Pond Outfall to Crystal Creek), and Downstream

The parameters analyzed in the receiving stream include the following:

- Dissolved Oxygen (DO)
- Ammonia-N
- Total Phosphorous
- Total Suspended Solids (TSS)
- TKN (Monthly)

The following locations into Sleepy Hollow Creek from Wastewater Treatment Plant #3 are sampled once per month:

- Effluent to Drainage Ditch (Squaw Creek / unnamed ditch to Sleepy Hollow)
- Terra Cotta Road downstream of drainage pond
- Illinois Route 31 north of east Brighton Lane
- Illinois Route 31 between Squaw Creek Road and Half Mile Road
- Along Ames Road downstream of Thunderbird Lake

- Where Sleepy Hollow crosses on Colby Point Road

The parameters analyzed for Sleepy Hollow Creek include the following:

- Total Phosphorous
- Sulfate
- Chloride
- Total Dissolved Solids (TDS)
- Total Suspended Solids (TSS)
- Hardness
- pH
- Temperature

The following location is sampled from Silver Creek once per month as part of the Fox River Study and managed by the Friends of the Fox:

- Lake Shore Drive and East Park Lane

Three Oaks Recreation Area (TORA)

- Three samples are collected from the South Lake for clarity (Secchi Disks)
- Three samples are collected from the North Lake and analyzed for the same parameters as the Crystal Lake samples

Note: the monitoring at TORA is part of the Volunteer Lake Management Program (VLMP), which is managed through the Illinois Environmental Protection Agency (IEPA)

Other Receiving Waters with no Documented Monitoring

- Kishwaukee River
- Hampton Hills Unnamed Wetlands
- Woods Creek – North & South Branches
- Veterans Acres Pond

Pollution Prevention /Good Housekeeping

(April 2011 thru March 2012)

- 1) The City has a Storm Water Management Ordinance (No. 6535). The Storm Water Ordinance documents an illicit discharge and connection section.
- 2) All public works divisions have prepared and implemented Spill Prevention Control and Countermeasure Plans (SPCC). As a requirement of the SPCC Plan, quarterly inspections are conducted and documented at each of the facility divisions.
- 3) All employees in Public Works are trained in spill and clean-up procedures. This includes storm water control and flood management practices.

4) Chemicals and waste products in each division are stored following the SPCC guidelines.

5) Crystal Lake businesses with the potential for accidental or illicit discharges are required at a minimum to fill out a Wastewater Discharge Questionnaire, and in some cases a Slug Control Plan or Accidental Spill Plan. The Plans document the potential for spills and the prevention of pollutants into both sanitary and storm water sources.

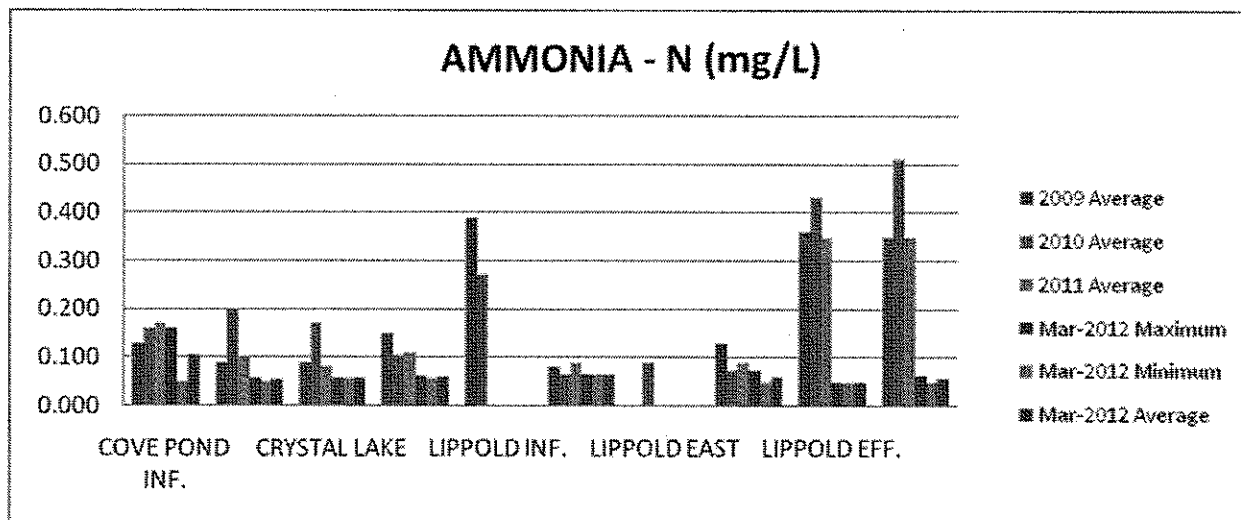
6) All employees are trained in observing the potential for illicit discharges from industrial, commercial, and residential sources.

Education and Outreach

- The City has been attending and participating in the Silver Creek and Sleepy Hollow Creek Watershed planning coalition meetings.

AMMONIA - N (mg/L)

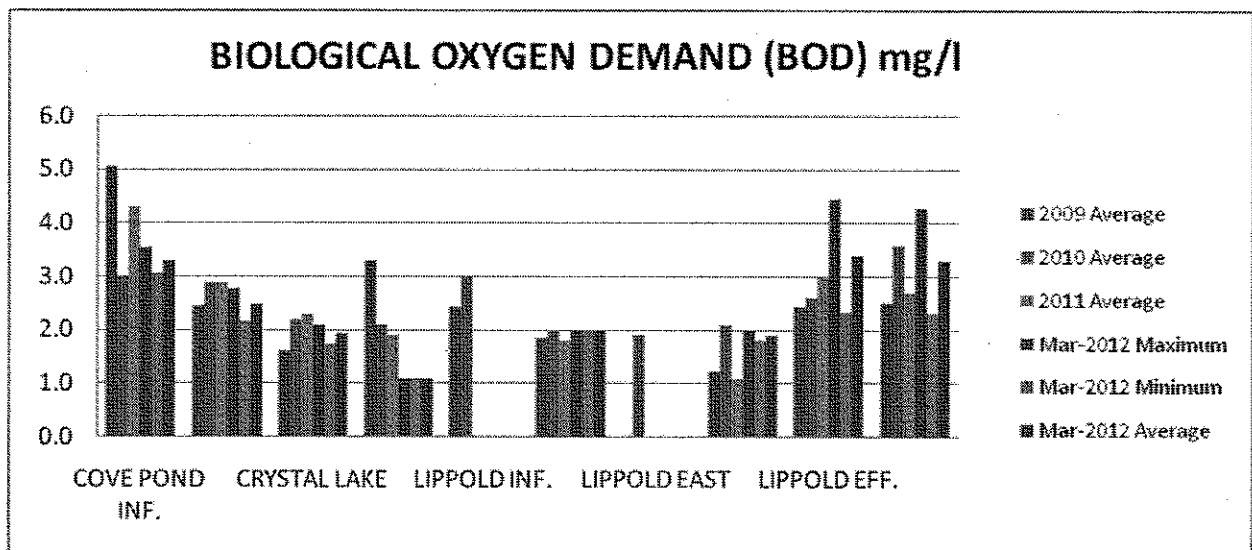
Location	2009	2010	2011	Mar-2012	Mar-2012	Mar-2012
	Average	Average	Average	Maximum	Minimum	Average
COVE POND INF.	0.13	0.16	0.17	0.161	0.050	0.106
COVE POND EFF.	0.09	0.20	0.10	0.057	0.050	0.054
CRYSTAL LAKE	0.09	0.17	0.08	0.057	0.057	0.057
CREEK	0.15	0.11	0.11	0.062	0.058	0.060
LIPPOLD INF.	0.39	0.27	No Data			
LIPPOLD CENTER	0.08	0.07	0.09	0.065	0.065	0.065
LIPPOLD EAST	No Data	0.09	No Data			
LIPPOLD WEST	0.13	0.07	0.09	0.072	0.050	0.061
LIPPOLD EFF.	0.36	0.43	0.35	0.050	0.050	0.050
SOD	0.35	0.51	0.35	0.062	0.050	0.056



Comments: Low level ammonia nitrogen may be present in water naturally as a result of the biological decay of plant and animal matter. Ammonia is a major component of fertilizers. This is consistent with the spikes at Lippold Influent (down stream from the golf driving range); Lippold Effluent and the Sod are also down stream from the driving range and the extensive wetlands of Lippold Park.

BIOLOGICAL OXYGEN DEMAND (BOD) mg/l

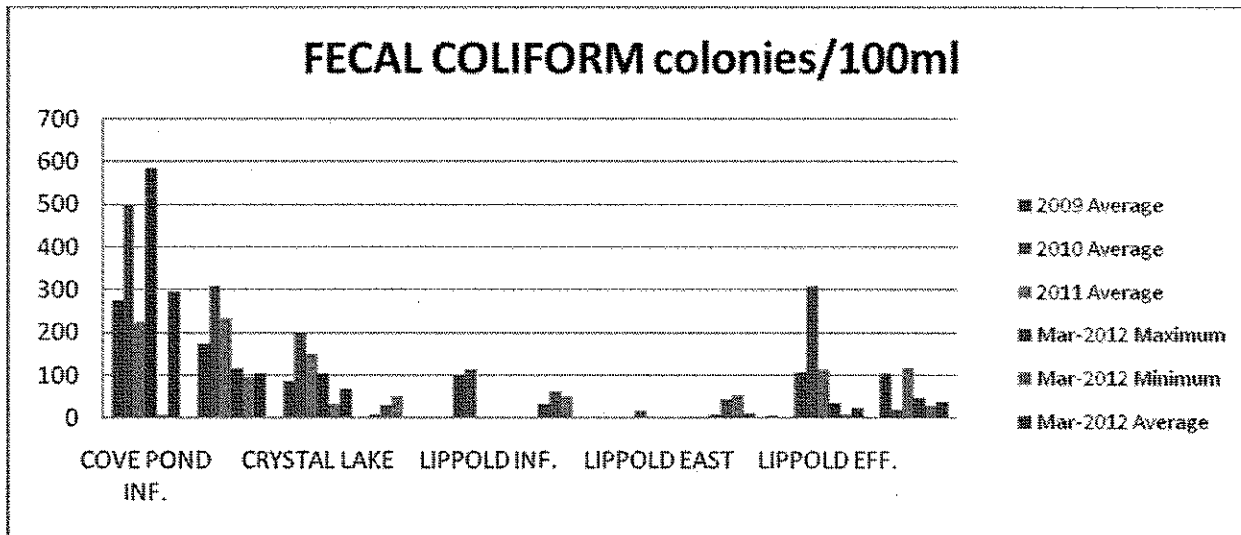
Location	2009 Average	2010 Average	2011 Average	Mar-2012 Maximum	Mar-2012 Minimum	Mar-2012 Average
COVE POND INF.	5.1	3.0	4.3	3.5	3.1	3.3
COVE POND EFF.	2.5	2.9	2.9	2.8	2.2	2.5
CRYSTAL LAKE	1.6	2.2	2.3	2.1	1.7	1.9
CREEK	3.3	2.1	1.9	1.1	1.1	1.1
LIPPOLD INF.	2.4	3.0	No Data			
LIPPOLD CENTER	1.9	2.0	1.8	2.0	2.0	2.0
LIPPOLD EAST	No Data	1.9	No Data			
LIPPOLD WEST	1.2	2.1	1.1	2.0	1.8	1.9
LIPPOLD EFF.	2.4	2.6	3.0	4.5	2.3	3.4
SOD	2.5	3.6	2.7	4.3	2.3	3.3



Comments: The BOD is a chemical procedure for determining how fast biological organisms use up oxygen in a body of water. It is used as a measure of the degree of water pollution. A low BOD is an indicator of good quality water. The numbers above range from very good (1-2 mg/L) to moderately clean (3-5 mg/L). The highest number at Cove Pond Influent seems logical as more urban and street runoff discharges into this location. The cleanest location appears to be Lippold West which is logical since there is mostly open fields or farmland that discharge into this location.

FECAL COLIFORM colonies/100ml

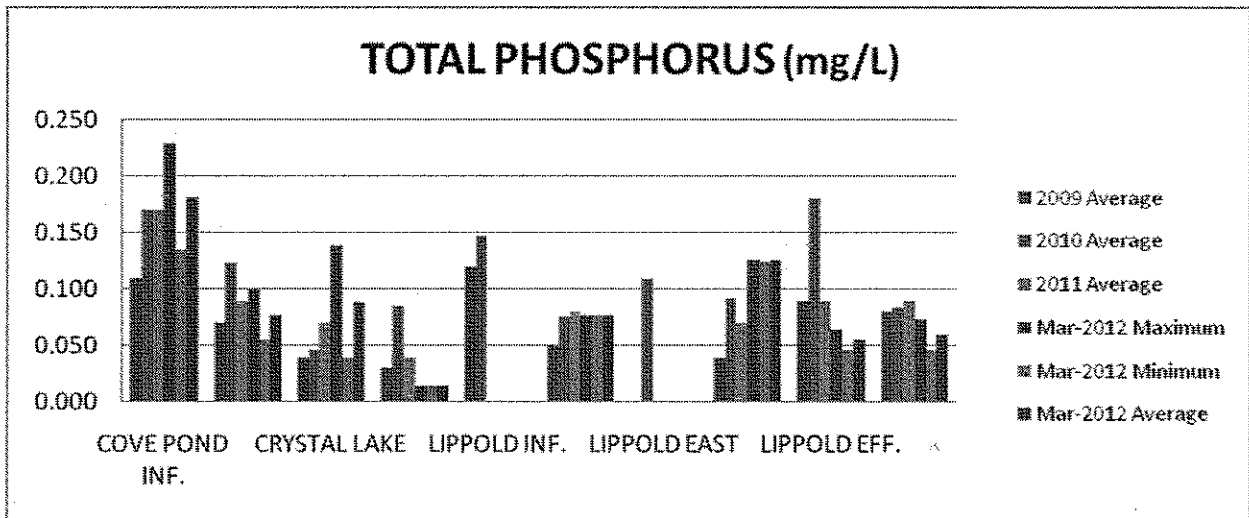
Location	2009	2010	2011	Mar-2012	Mar-2012	Mar-2012
	Average	Average	Average	Maximum	Minimum	Average
COVE POND INF.	276	498	226	584	10	297
COVE POND EFF.	173	310	233	117	95	106
CRYSTAL LAKE	87	202	149	104	34	69
CREEK	10	30	51	2	1	2
LIPPOLD INF.	102	114	No Data			
LIPPOLD CENTER	33	63	50	3	3	3
LIPPOLD EAST	No Data	17	No Data			
LIPPOLD WEST	10	44	53	11	1	6
LIPPOLD EFF.	107	308	114	37	10	24
SOD	105	21	118	48	31	40



Comments: Fecal Coliform bacteria are a group of bacteria (organisms) that are passed through the fecal excrement of humans, livestock and wildlife. This bacteria can enter aquatic areas through direct discharges of waste from mammals and birds, from agricultural and storm runoff, human sewerage, decaying plant material, and some industrial activity. The graph above would indicate that Cove Pond and the usual Lippold Park areas are affected by Fecal Coliform, especially during the warmer months.

TOTAL PHOSPHORUS (mg/L)

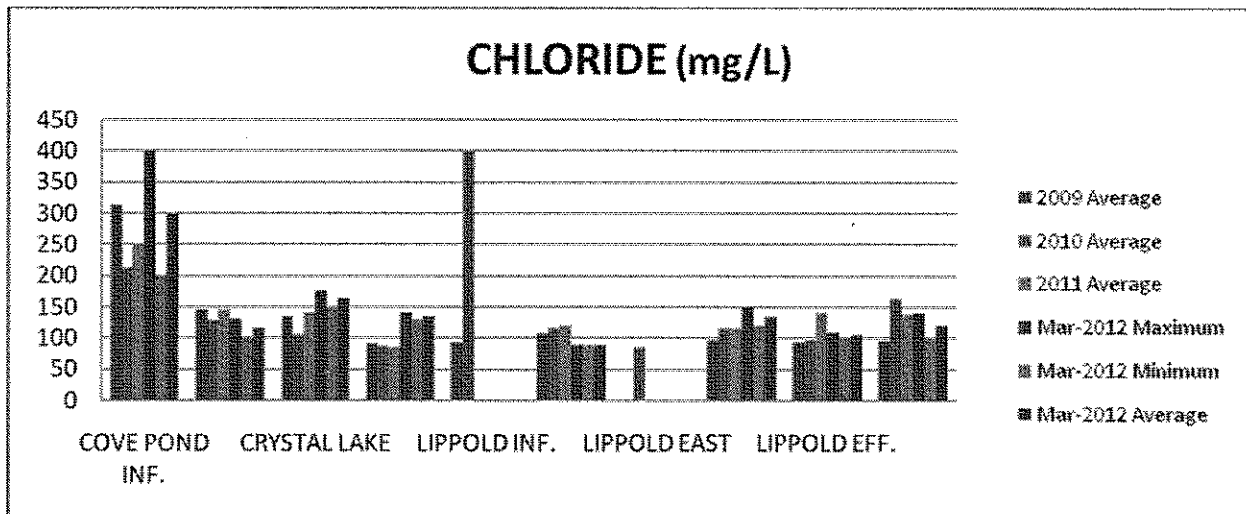
Location	2009 Average	2010 Average	2011 Average	Mar-2012 Maximum	Mar-2012 Minimum	Mar-2012 Average
COVE POND INF.	0.11	0.17	0.17	0.23	0.14	0.18
COVE POND EFF.	0.07	0.12	0.09	0.10	0.06	0.08
CRYSTAL LAKE	0.04	0.05	0.07	0.14	0.04	0.09
CREEK	0.03	0.09	0.04	0.02	0.02	0.02
LIPPOLD INF.	0.12	0.15	No Data			
LIPPOLD CENTER	0.05	0.08	0.08	0.08	0.08	0.08
LIPPOLD EAST	No Data	0.11	No Data			
LIPPOLD WEST	0.04	0.09	0.07	0.13	0.13	0.13
LIPPOLD EFF.	0.09	0.18	0.09	0.06	0.05	0.06
SOD	0.08	0.08	0.09	0.07	0.05	0.06



Comments: Most of the available phosphorus found in our waterways can be traced directly to human sources. Phosphorus is used in many detergents, boiler treatments, fertilizers, and in some water supply treatments. When this phosphorus reaches the environment through runoff or through wastewater discharges, accelerated eutrophication usually takes place. Eutrophication is when a body of water becomes rich in dissolved nutrients. Again the higher spikes above would be the direct result of fertilizers and street runoff (Cove Pond Influent and Lippold Influent).

CHLORIDE (mg/L)

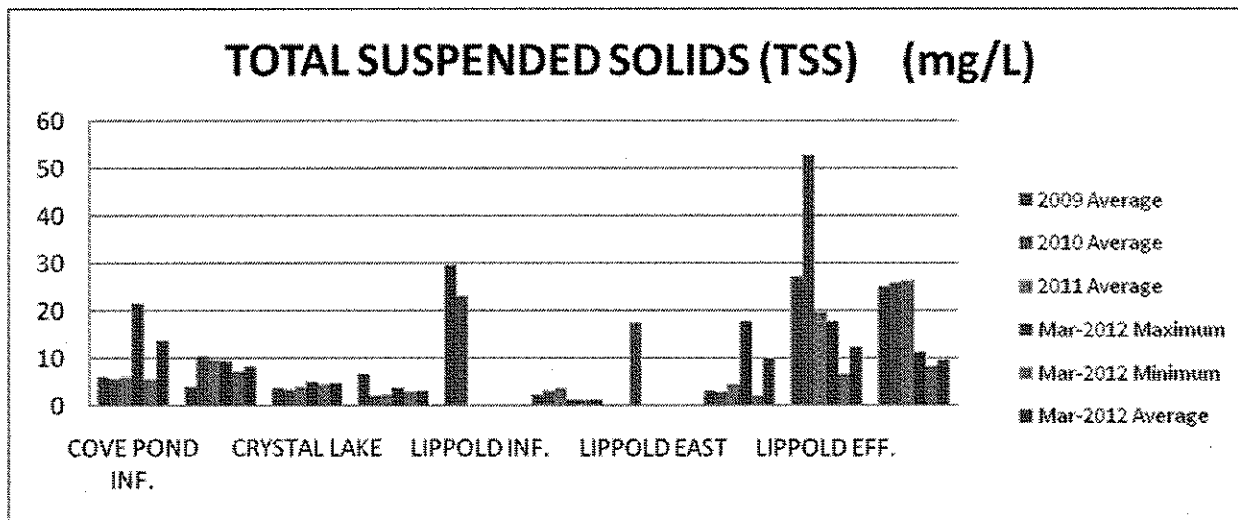
Location	2009 Average	2010 Average	2011 Average	Mar-2012 Maximum	Mar-2012 Minimum	Mar-2012 Average
COVE POND INF.	315	213	252	400.0	200.0	300.0
COVE POND EFF.	145	129	144	130.0	100.0	115.0
CRYSTAL LAKE	134	105	140	175.0	150.0	162.5
CREEK	92	87	85	140.0	130.0	135.0
LIPPOLD INF.	93	403	No Data			
LIPPOLD CENTER	108	115	121	90.0	90.0	90.0
LIPPOLD EAST	No Data	86	No Data			
LIPPOLD WEST	98	115	115	150.0	120.0	135.0
LIPPOLD EFF.	94	98	140	110.0	100.0	105.0
SOD	95	163	138	140.0	100.0	120.0



Comments: Chloride is a useful and reliable chemical indicator of river / groundwater fecal contamination, as chloride is a non-reactive solute and is ubiquitous to sewerage and potable water. The graph above would indicate runoff into Cove Pond Influent. Probably the main source of contamination is the use of sodium chloride as a deicing agent from the local roads, sidewalks, and nearby paved parking lots. The other sample locations are fairly consistent at lower concentrations.

TOTAL SUSPENDED SOLIDS (TSS) (mg/L)

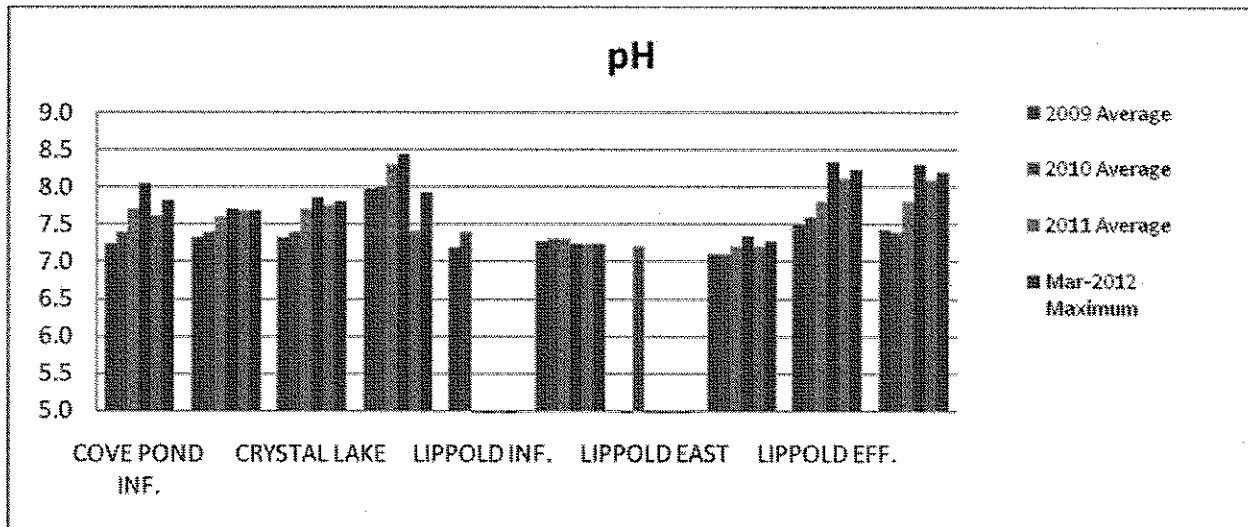
Location	2009	2010	2011	Mar-2012	Mar-2012	Mar-2012
	Average	Average	Average	Maximum	Minimum	Average
COVE POND INF.	6.1	5.5	6.2	21.6	5.6	13.6
COVE POND EFF.	4.1	10.5	9.6	9.4	7.2	8.3
CRYSTAL LAKE	3.6	3.4	3.9	5.2	4.6	4.9
CREEK	6.7	2.1	2.5	3.8	2.8	3.3
LIPPOLD INF.	29.6	23.1	No Data			
LIPPOLD CENTER	2.5	3.2	3.8	1.4	1.4	1.4
LIPPOLD EAST	No Data	17.6	No Data			
LIPPOLD WEST	3.1	3.0	4.6	17.8	2.2	10.0
LIPPOLD EFF.	27.3	52.9	19.8	17.8	6.8	12.3
SOD	25.0	25.8	26.5	11.4	8.2	9.8



Comments: Total Suspended Solids (TSS) are solids in water that can be trapped by a filter. TSS can include a wide variety of material, such as silt, decaying plant and animal matter, industrial wastes, and sewerage. High TSS in a water body can mean higher concentrations of bacteria, nutrients, pesticides, and metals in the water. These pollutants may attach to sediment particles on the land and be carried into water bodies with storm water. The graph above would indicate that runoff from the golf driving range and the Lippold Park wetlands increases TSS at those down stream monitoring points.

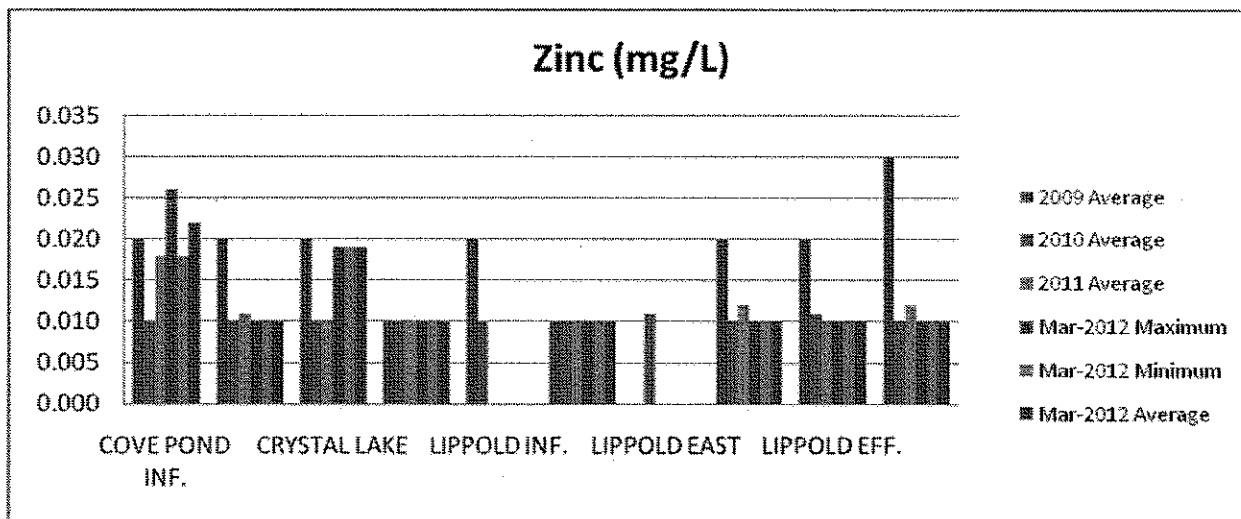
pH

Location	2009 Average	2010 Average	2011 Average	Mar-2012 Maximum	Mar-2012 Minimum	Mar-2012 Average
COVE POND INF.	7.2	7.4	7.7	8.0	7.6	7.8
COVE POND EFF.	7.3	7.4	7.6	7.7	7.7	7.7
CRYSTAL LAKE	7.3	7.4	7.7	7.9	7.8	7.8
CREEK	8.0	8.0	8.3	8.4	7.4	7.9
LIPPOLD INF.	7.2	7.4	No Data			
LIPPOLD CENTER	7.3	7.3	7.3	7.2	7.2	7.2
LIPPOLD EAST	No Data	7.2	No Data			
LIPPOLD WEST	7.1	7.1	7.2	7.4	7.2	7.3
LIPPOLD EFF.	7.5	7.6	7.8	8.3	8.1	8.2
SOD	7.4	7.4	7.8	8.3	8.1	8.2



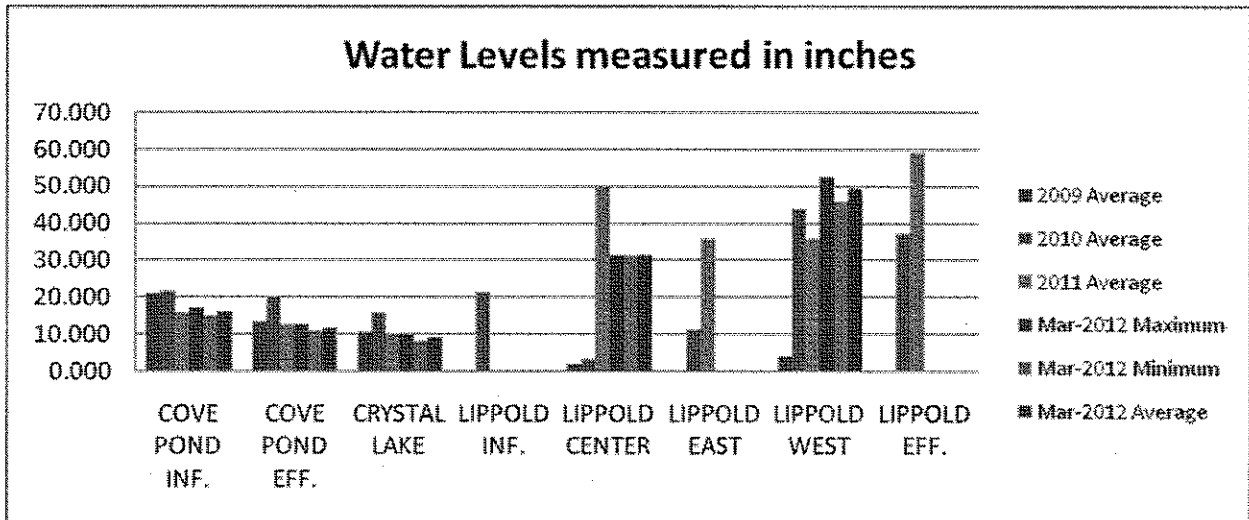
Zinc (mg/L)

Location	2009 Average	2010 Average	2011 Average	Mar-2012 Maximum	Mar-2012 Minimum	Mar-2012 Average
COVE POND INF.	0.020	0.010	0.018	0.026	0.018	0.022
COVE POND EFF.	0.020	0.010	0.011	0.010	0.010	0.010
CRYSTAL LAKE	0.020	0.010	0.010	0.019	0.019	0.019
CREEK	0.010	0.010	0.010	0.010	0.010	0.010
LIPPOLD INF.	0.020	0.010	No Data			
LIPPOLD CENTER	0.010	0.010	0.010	0.010	0.010	0.010
LIPPOLD EAST	No Data	0.011	No Data			
LIPPOLD WEST	0.020	0.010	0.012	0.010	0.010	0.010
LIPPOLD EFF.	0.020	0.011	0.010	0.010	0.010	0.010
SOD	0.030	0.010	0.012	0.010	0.010	0.010



Water Levels measured in inches

Location	2009	2010	2011	Mar-2012	Mar-2012	Mar-2012
	Average	Average	Average	Maximum	Minimum	Average
COVE POND INF.	21.1	21.8	15.9	17.0	15.0	16.0
COVE POND EFF.	13.4	19.9	12.5	12.5	11.0	11.8
CRYSTAL LAKE	10.7	15.6	10.2	10.0	8.0	9.0
LIPPOLD INF.	No Data	21.3	No Data			
LIPPOLD CENTER	2.0	3.4	49.6	31.5	31.5	31.5
LIPPOLD EAST	No Data	11.2	35.8			
LIPPOLD WEST	3.8	43.7	35.8	52.5	46.0	49.3
LIPPOLD EFF.	No Data	37.4	59.2	59.0	57.0	58.0

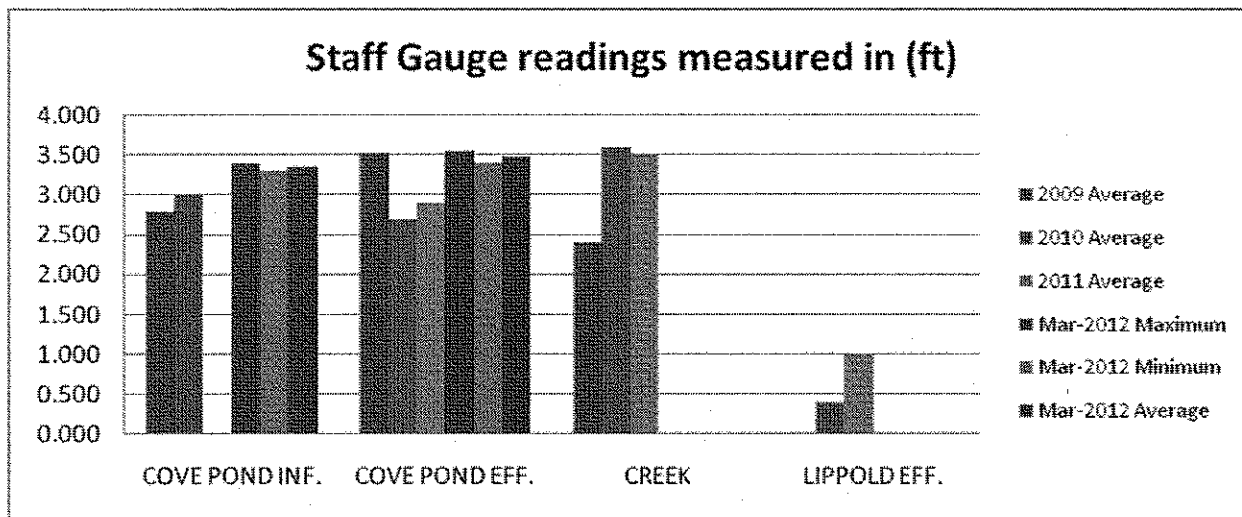


Note: The lower number indicates higher levels of water at the water surface to the top of the culvert.

Note: Measured in feet from the top of the surface water in the manhole to the top of the manhole. Lower values indicate higher water volumes.

Staff Gauge readings measured in (ft)

Location	2009 Average	2010 Average	2011 Average	Mar-2012 Maximum	Mar-2012 Minimum	Mar-2012 Average
COVE POND INF.	No Data	3.0	No Data			
COVE POND EFF.	2.8	2.7	2.9	3.4	3.3	3.4
CREEK	3.5	3.6	3.5	3.6	3.4	3.5
LIPPOLD EFF.	2.4	0.4	1.0			



Note: There is no longer a staff gauge at Lippold Effluent

Section D: Summary of Activities During Next Reporting Cycle

A. Public Education and Outreach

A.1 Distribute Paper Materials

Measureable Goals –

- *Evaluate and assess the program's effectiveness.*

A.3 Public Service Announcements

Measureable Goals –

- *Publish at least one article for the quarterly City Newsletter*
- *Create a "Fact of the Month" to be published on the City's cable access channel monthly.*

A.4 Community Event

Measureable Goals –

- *Explore an event which further educates the public regarding the rain garden at City Hall.*
- *Develop a progress tracking system for the community rain garden and bioswale projects.*
- *Staff is planning to participate in tours of Three Oaks Recreation Area for high school and elementary school students, with discussions on the various water quality BMP's on-site.*
- *Sponsor medication take-back and community clean-up programs.*
- *Continue with community events.*

A.6 Other Public Education

Measureable Goals –

- *Explore other means of public education.*
- *Continue to add additional information to the "Green Initiatives" page on the City webpage.*

B. Public Participation/Involvement

B.2 Educational Volunteer

Measureable Goals –

- *Continue interacting with elementary schools by conducting tours of City departments and functions.*

B.3 Stakeholder Meeting

Measureable Goals –

- *Conduct stakeholder meetings as necessary.*

B.6 Program Coordination

Measureable Goals –

- *Continue coordination with Algonquin and Lake in the Hills with the Woods Creek Watershed assessment.*
- *Continue involvement in Sleepy Hollow and Silver Creek Watersheds taskforce.*

B.7 Other Public Involvement

Measureable Goals –

- *Promote the Annual Clean-Up Day hosted by the Chamber of Commerce and Park District organizations.*
- *Participate in the Chamber of Commerce's Annual Expo.*

C. Illicit Discharge Detection and Elimination

C.5 Illicit Source Removal Procedures

Measureable Goals –

- *Revisit discussions with McHenry County and surrounding communities on the effects of coal tar sealants.*
- *Revisit discussion on the development of a salt storage ordinance for commercial and industrial properties is being reviewed.*

C.6 Program Evaluation and Assessment

Measureable Goals –

- *Create annual inspection schedule for remaining stormwater sites.*

C.8 Pollutant Field Testing

Measureable Goals –

- *Continue sampling and testing of influent and effluent flows at lakes and streams.*
- *Perform priority pollutant testing of the watershed area.*

C.10 Other Illicit Discharge Controls

Measureable Goals –

- *Revisit discussion on the use of non-phosphorous fertilizer products.*

D. Construction Site Runoff Control

D.1 Regulatory Control Program

Measureable Goals –

- *Continue to enforce the storm water management ordinance.*
- *Finalize the recertification with McHenry County.*
- *Continue to work with the County to re-evaluate the watershed requirements with regards to development in existing urbanized areas.*

- Continue to work with the County to establish ways to enforce the City's watershed requirements for unincorporated properties in the Crystal Lake Watershed.

D.2 Erosion and Sediment Control BMP's

Measurable Goals –

- Continue to enforce and document erosion and sediment control standards.

D.3 Other Waste Control Programs

Measurable Goals –

- Revisit discussions regarding an ordinance that regulates waste and debris on construction sites.

D.4 Site Plan Review Procedures

Measurable Goals –

- Continue to follow review procedures.
- Encourage staff to obtain additional certification in erosion control.

D.5 Public Information Procedures

Measurable Goals –

- Track and respond to all complaints.
- Discuss an agreement with McHenry County Soil and Water Conservation District to coordinate water quality related complaints.
- Engineering Division will continue to create a Watershed Developer's Handbook which will summarize the requirements both before and after a development is constructed in the watershed. The goal of the handbook is to provide a concise explanation as to the requirements within the Watershed Implementation Plan.

D.6 Site Inspection/Enforcement Procedures

Measurable Goals –

- Continue to follow and enhance site review inspection procedures.
- Encourage staff to obtain additional certification in erosion control inspection (CISEC or CESSWI)

E. Post-Construction Runoff Control

E.2 Regulatory Control Program

Measurable goals -

- Continue to enforce the Crystal Lake Stormwater Ordinance.

E.3 Long Term O&M Procedures

Measurable Goals -

- Conduct annual inspections.
- Develop and distribute a sample maintenance plan.

E.4 Pre-construction Review of BMP Designs

Measureable Goals –

- Continue to follow review procedures.

E.5 Site Inspections During Construction

Measureable Goals –

- Track all site inspections.

F. Pollution Prevention/Good Housekeeping

F.1 Employee Training Program

Measureable Goals –

- Provide and/or attend training as available.

F.2 Inspection and Maintenance Program

Measureable Goals –

- Continue with annual street sweeping program.
- Continue and enhance the storm conveyance system cleaning and inspection program.
- Revisit the continued development of the GIS storm layer as the system becomes available.

F.3 Municipal Operations Storm Water Control

Measureable Goals –

- Create a rain garden ordinance and brochure, similar to the rain barrel ordinance and brochure.
- Staff is working with a consultant to design the naturalization options for a detention pond located in the rear of the Municipal Complex.

F.6 Other Municipal Operations Controls

Measureable Goals –

- Perform quarterly spill prevention inspections.

E. Notice of Qualifying Local Program

- Collaborative efforts between Algonquin, Lake in the Hills, and Crystal Lake to utilize grant funding for an assessment of the Woods Creek Watershed.
- Collaborative efforts with the Sleepy Hollow and Silver Creek watershed taskforce.

F. Construction Projects Completed During Reporting Year

- *Virginia Street Corridor Streetscape Improvement*
- *Pingree Road from Rakow Road to US Route 14*
- *McHenry County Division of Transportation Rakow Road Improvement Started (Completion in Fall of 2012)*
- *Traffic Signal Upgrades for Remaining City Maintained Signals*