



Des Plaines River Watershed Workgroup

Executive Board

4/19/2018 2:30-4:00 pm

Lake County Stormwater Management Commission Medium Conference Room

500 W. Winchester Road, Libertyville IL 60048

Agenda

1. Call the meeting to order
2. Roll Call
3. Approve Previous Meeting minutes (3/15/18)
4. Public Comment
5. Financial Report
6. Agenda Format
7. Lake Monitoring Contract
8. Burns & McDonnell
9. Late Joiner Fee
10. Monitoring/Water Quality Improvements Committee Update
 - a. NIP Update
 - b. QHEI Training by MBI
 - c. TALU Pilot Study
11. Lakes Committee Update
12. Task Force Update
13. Old Business
14. Other Business
15. Next Executive Board Meeting June 21, 2018 @ 2:30 pm, Lake County Central Permit Facility
16. Adjourn



Des Plaines River Watershed Workgroup

Executive Board

3/15/2018

2:30-3:30 PM

Lake County Stormwater Management Commission

500 W. Winchester Road, Libertyville IL 60048

Meeting Minutes

1. Call the meeting to order: Al Giertych called the meeting to order at 2:55 pm.
2. Roll Call: Al Giertych, Mike Adam, Joe Robinson, Jim Anderson and Michael Talbett – a quorum was present.
3. Approve Previous Meeting minutes (1/18/18): 2 minor changes were requested, under items #5 and #6, the minutes should reflect that “Motion passed unanimously upon a roll call vote.” Beth will make the changes. Mike A made a motion to approve the minutes with changes, Michael T seconded. Motion passed unanimously upon a roll call vote.
4. Public Comment: None
5. Financial Report: Mike W and Wendy M presented the financial report. Wendy handed out an update. Lake County’s dues, \$25,000, for 2018 have been received. Invoices to NSWRD and LCDOT already went out – DRWW needs cash this time of year to cover bills so invoices to these couple of entities go out early. Invoices to other members will go out end of March. Mike W explained that contractor billings which are not sent in the fiscal year it was spent, or invoices coming in at the end of LCSMC’s fiscal year are creating problems with accurately estimating the carryover amount for the next year. LCSMC and Beth will be conducting an annual contractor invoicing reconciliation on the first Monday of December. Jim Anderson made a motion to ratify expenditures or deposits. Michael Talbett seconded. The motion passed unanimously upon a roll call vote.
6. Prospective New Members – Joe R reported for Brian Dorn. Brian was talking to Prospect Hts’ contractor about joining the DRWW – they are in Cook County, but in a “no-man’s land” between the DRWW and DRSCW Workgroups. DRWW provided dues information to Prospect Hts, but they decided not to join at this time. Joe asked the Committee what their opinion about late joiners being required to pay a late joining fee? Michael Talbett offered that JAWA requires a late joining fee. Joe suggested the Committee consider what would be equitable going forward, and to find out how other groups like DRSCW, FRSG and JAWA handle it. Beth reported that Hey & Assoc. has signed the member agreement and is waiting to be invoiced – DRWW’s first new member of 2018. Beth also sent an invitation to all non-member permit holders in the Watershed an invitation to join the DRWW and our 2017 Accomplishments report. Palatine responded requesting info on what their dues would be. Dues info was sent to Palatine but have not heard back from them.
7. May General Membership Meeting – Jim Anderson led the discussion. Ethel’s Woods project may not have much to see. Other possible LCFPD projects would be Pine Dunes, a LCFPD and IL Tollway joint project or Rollins Savannah, a collaborative project with LCDOT. There is also

LCFPD's native seed nursery at Rollins Savannah. After some discussion it was agreed that Rollins Savannah would be a great choice for our May General Membership meeting which is a field trip into the Watershed.

8. Monitoring/WQI Committee Update – Joe R gave the update. The annual monitoring report required by permit has been drafted. Joe will incorporate the comments he received and will send it to IEPA by March 31. The Monitoring Strategy Report has also been updated and will be sent to IEPA by Beth to Amy Walkenbach.
9. Lakes Committee Update – Mike A gave the update. Summer 2018 Monitoring. The Lake Committee is proposing to assess the internal/external loading estimates that the WILMS model produced by collecting inlet/outlet samples at Gages, Druce, and Third lakes, which are all hydrologically connected. Flow data would also be collected and each lake would be sampled at the deep hole, collecting nutrient information as well as DO/pH, conductivity and temperature. For Lake County Health Department to do this work it would cost approximately \$20,000. Mike Adam requested an estimate from a local lake consultant and their estimate was between \$30,000-38,000. The Board directed Beth and Mike A to draft a contract for this work for the Board to approve at its next meeting.
10. Task Force Update – Michael Talbett gave the update. The Task Force was formed to find more value for MS4 members. It has identified 3 approaches to do this; (1) enhance MS4 reporting; (2) come up with a list of BMPs/checklists that other members are doing; (3) provide some training using contractors to provide the training. There was a comment that the MS4 permit requires training but is not specific as to what kind of training meets the permit requirement. It was suggested the Task Force gets clarification on this from IEPA.
11. Old Business - None
12. Other Business – Mike Warner announced that Lake County may have a viable candidate for their MS4 coordinator and hopefully he will be on-board next month.
13. Jim A made a motion to adjourn, Mike A seconded. Motion passed unanimously. Meeting adjourned at 4:20 pm.

Executive Board Committee Members Present

Michael Talbett, DRWW Treasurer Village of Kildeere

Joe Robinson, DRWW Monitoring/WQ Improvements Committee Chair, NSWRD

Mike Adam, DRWW Lakes Committee Chairman, LCHD

Al Giertych, DRWW Vice President, LCDOT

Jim Anderson, Member-At-Large, LCFPD

Other attendees:

Beth Adler, DRWW Technical Coordinator

Mike Warner, LCSMC

Wendy Morey, LCSMC

Tom Morthorst, Third Lake

Rob Flood, NSWRD

Des Plaines River Watershed Workgroup BUDGET (January thru December)			FY2017 Actual	Approved FY2018	FY2018 Actual	Projected FY2019	Projected FY2020
REVENUE/Description	Account #						
Dues/Membership dues	775-4220010-46010	\$ 249,437	\$ 235,000	\$ 37,941	\$ 235,000	\$ 235,000	
Expendable Carryover Addition	775-4220010-46010	\$ 192,559	\$ 122,557	\$ 122,557	\$ 28,863	\$ 23,813	
Other State Funds/Illinois EPA 319 Grant	775-4220010-45350	\$ 47,500					
Other (FPD/LCDOT)			-		-	-	
Total Revenue		\$ 489,496	\$ 357,557	\$ 160,498	\$ 263,863	\$ 258,813	
EXPENSES/Description							
Consultants/Technical Coordinator (GeoSyntec thru 4/30/16) PO 154955	775-4220010-71150	\$ 6,317					
Consultants/Tech Coordinator (Beth Adler) PO 166092	775-4220010-71150	\$ 54,874					
Monitoring Strategy and QAPP Refinement (IEPA Reimbursable)	775-4220010-71170						
WQ-Sediment Analysis - (Suburban Labs - July 2016 - April 2017) PO 162822	775-4220010-71310	\$ 111,977					
Suburban Laboratory's Fees/Water Chemistry Monitoring (July 2016 - March 2017)	775-4220010-71310						
SubLabs - Chem All/yr; 1/3 Sediment/yr	775-4220010-71310						
Pollutant Load Initial Flow Analysis - (Burns and McDonnell)	775-4220010-71310	\$ 41,795					
MBI - Initial Bioassessment/Sediment Sample-Analysis-Reporting (to 12/31/17) PO 164167 - FINAL	775-4220010-71310	\$ 121,697					
MBI - Year 1 - 1/3 Watershed Sampling	775-4220010-71310	\$ 30,280					
2018 Tech Coordinator (Beth Adler)	775-4220010-71150		\$ 55,560	\$ 14,240			
2018 Contract 10% Retainage Payout - Burns and McDonnell 2017 Flow Analysis	775-4220010-71310		\$ 6,583				
2018 SubLabs - Chem All/yr; 1/3 Sediment/yr - Work starts in Jan/May/Jul/Aug/Oct	775-4220010-71310		\$ 81,820	\$ 11,957			
2018/2017 MBI - Initial Bioassessment/Sediment Sample-Analysis-Reporting (to 12/31/17) PO 164167 -	775-4220010-71310		\$ 3,411	\$ 3,411			
2018/2017 MBI - Year 1 - 1/3 Watershed Sampling Remainder 2017 Contract Work	775-4220010-71310		\$ 47,720				
2018 MBI - Year 2 - 1/3 WATERSHED SAMPLING -Work Starts in June	775-4220010-71310		\$ 45,600				
2018 MBI IPS Modelling Monitoring Statistics and Project Prioritization	775-4220010-71310		\$ 60,000				
2018 Lakes Committee - WQ Sampling - Work starts spring	775-4220010-71310		\$ 20,000				
2018 SMC Administrative Services (June 1st thru November 30th)	775-4220010-79940		\$ 6,000				
2018 public education (e.g.; printing, workshops,) - Work starts in Jan	775-4220010-79950		\$ 2,000				
2019 Tech Coordinator (Beth Adler)					\$ 59,300		
2019 MBI - 1/3 WATERSHED SAMPLING					\$ 82,750		
2019 SubLabs - Chem All/yr; 1/3 Sediment/yr					\$ 66,000		
2019 Lakes Committee - WQ Sampling					\$ 20,000		
2019 SMC Administrative Services					\$ 12,000		
2020 Tech Coordinator (Beth Adler)						\$ 61,100	
2020 MBI - 1/3 WATERSHED SAMPLING						\$ 82,750	
2020 SubLabs - Chem All/yr; 1/3 Sediment/yr						\$ 66,000	
2020 SMC Administrative Services						\$ 12,000	
2020 Lakes Committee - WQ Sampling						\$ 20,000	
Projected Expenses		\$ 366,939	\$ 328,694	\$ 29,608	\$ 240,050	\$ 241,850	
Projected Unexpended Carryover		\$ 122,557	\$ 28,863	\$ 130,890	\$ 23,813	\$ 16,963	

DRWW

**Des Plaines River Watershed Workgroup-Expense-Revenue Activity
For Period Jan 2018 - December 2018**

500 W Winchester Rd
Libertyville, Illinois 60048
Phone 847 377 7700
mwarner@lakecountyil.gov
wmorey@lakecountyil.gov

Revenues Received	Current Period	Date Received	Date Deposited	DRWW Ratification	
Carryover	\$ 122,557.00				
Lake County	\$ 25,000.00	3/13/2018	3/14/2018	3/15/2018	
LCFPD	\$ 12,941.00	3/28/2018	4/4/2018		
Other Contributions Received					
Total Received:	\$ 37,941.00				
Total Received + Carryover	\$ 160,498.00				

Expenditures Paid:		Date Received	Paid Date	DRWW Ratification	
Beth Adler #00031	\$ 2,085.75	1/5/2018	1/31/2018	3/15/2018	
Beth Adler #00032	\$ 2,188.75	1/26/2018	1/31/2018	3/15/2018	
MBI # 1524	\$ 3,411.33	1/11/2018	1/31/2018	3/15/2018	
Beth Adler #00033	\$ 2,214.50	1/31/2018	2/8/2018	3/15/2018	
Beth Adler #00034	\$ 2,008.50	2/20/2018	2/26/2018	3/15/2018	
Beth Adler #00035	\$ 2,060.00	3/2/2018	3/5/2018	3/15/2018	
Suburban Labs Inc	\$ 11,957.00	3/9/2018	3/15/2018		
Beth Adler #00036	\$ 2,111.50	3/21/2018	3/21/2018		
Beth Adler #00037	\$ 1,570.75	4/6/2018	4/9/2018		
Total Expenditures Paid	\$ 29,608.08				
Revenue-Expenditures					\$ 130,889.92

2018 TECHNICAL SERVICES AGREEMENT between the
DES PLAINES RIVER WATERSHED WORKGROUP
and the
LAKE COUNTY HEALTH DEPARTMENT for
LAKE WATER CHEMISTRY MONITORING

This is an agreement (Agreement) by and between the DES PLAINES RIVER WATERSHED WORKGROUP (DRWW), 500 West Winchester Road, Libertyville, Illinois 60048 and LAKE COUNTY HEALTH DEPARTMENT (LCHD), 500 West Winchester Road, Libertyville, Illinois 60048.

PURPOSE

The DRWW wishes to engage the LCHD to provide technical services to assist the DRWW in conducting lake water chemistry monitoring in the Des Plaines River watershed located in Lake County, Illinois. The lake water chemistry monitoring will satisfactorily collect and process lake water chemistry monitoring samples at inlets, outlets, deep hole locations, and after 3 storm events for Gages, Druce, and Third Lakes within the watershed. This study will help verify the estimated phosphorus loading rates generated previously by the Wisconsin Lakes Modeling (WiLMS) software. This information will be used to guide management recommendations for these and other lakes.

SERVICES

The LCHD will conduct lake water chemistry sampling by collecting samples, analyzing the samples collected, and providing the data to the DRWW. Monthly water samples (May – September), plus three (3) storm event samples, will be taken at 21 sites during 2018. Flow rates will be collected during sampling if applicable.

Inlet/outlet samples will be analyzed for chloride, total suspended solids, and total phosphorus, as well as dissolved oxygen, pH, water temperature, and conductivity. Deep hole samples (2 at each lake monthly) will be analyzed for the water quality parameters listed in Table 2 of Attachment A. In addition, in-lakes samples will have epilimnetic and hypolimnetic water samples and a depth profile analysis during each month visit which will be used to calculate anoxic volumes.

COMPENSATION

1. The LCHD agrees to perform the Scope of Services (Attachment A) and furnish the items included in the Scope of Services for a fee (Agreement Amount) not to exceed \$19,655 for the project in according to the rates in the Project Budget Attachment B.
2. The DRWW agrees to pay the LCHD for a total project cost not to exceed \$19,655. The final invoice of the Agreement Amount shall be retained by the DRWW until the project is successfully completed and all deliverables have been received and approved.

3. The LCHD shall furnish the DRWW with an itemized invoice. Invoices shall describe the work completed. Payments by the DRWW shall be made in accordance with the Illinois Local Prompt Payment Act (50 ILCS 505/1 et seq.).

SCHEDULE AND DELIVERABLES

All sampling shall be completed by October 30, 2018, with a final report completed by February 2019. Generally, sampling will be conducted at all sites within one week per month and approximately the same week every month, except for storm event samples.

Sampling Schedule – Inlet/Outlet and Deep Hole (21 samples)

May, 2018

June, 2018

July, 2018

August, 2018

September, 2018

Sampling Schedule – Storm Event

Storm event sampling will occur 3 times during the project period (May – Sept, 2018) at all inlet/outlet and deep hole sites (21 samples).

Project Deliverables:

- Electronic data deliverables (EDDs) and the sample results in an editable Microsoft Excel file, as specified by the DRWW.
- A final report consisting of a pdf file of all analytical results, analytical methods, chain(s) of custody, and a field log. Any sampling or testing observations which may have affected accuracy will be noted in the report narrative. Any applicable data qualifiers (e.g., matrix spike failure) will also be noted in the project specific comments portion of the report narrative page.
- Within one month of completion of the final report, LCHD shall send a full invoice reconciliation for the Scope of Work to DRWW.

TERMS and CONDITIONS

1. The DRWW may, by written Order, make changes in the Scope of Work if such changes are within the general scope of the Agreement. If such changes cause an increase or decrease in the LCHD's cost or the time required to complete the project, the parties hereto shall agree to an adjustment in the Agreement Amount, prior to issuance of the Change Order. Adjustment of the Agreement Amount shall be based on the estimated change in the number of staff hours required plus any changes in the LCHD's expense. The LCHD will not be compensated for additional services performed without an approved Change Order.

- 2. The DRWW may at any time terminate this Agreement in whole or in part by ten day written or telegraphic notice or verbal notice confirmed in writing. Upon termination for convenience of the DRWW, the DRWW will assume responsibility for services rendered and costs incurred prior to notification. Any and all services, property, publications or materials provided during or resulting from the LCHD shall be the property of the DRWW.
- 3. This Agreement shall be governed by and construed according to the laws of the State of Illinois.
- 4. This Agreement shall not be assigned, altered or modified without the express written consent of both parties. The LCHD shall not reject any reasonable change proposed in the best interest of the project by DRWW.

NOTICES AND COMMUNICATION

All notices and communications given to either party by the other relative to this Agreement shall be addressed to the respective parties as follows:

To the DRWW: Des Plaines River Watershed Workgroup
 500 West Winchester Road
 Libertyville, Illinois 60048
 ATTENTION: Mike Warner, Administrative Agent
 mwarner@lakecountyil.gov

To the LCHD: Mike Adam, Senior Biologist
 500 West Winchester Road, Suite 102
 Libertyville, Illinois 60048
madam@lakecountyil.gov
 (847) 377-8002

For the DRWW:

 Brian Dorn, President
 DRWW

Attest:

 DRWW

Date: _____

For the LCHD:

 Mark Pfister, Executive Director
 Lake County Health Department

Attest:

 LCHD

Date: _____

ATTACHMENT A

**DRWW Lakes Inlet/Outlet, Deep Hole and Storm Event Water Quality Monitoring
SCOPE OF SERVICES**

A. PROJECT/TASK ORGANIZATION

The Lake County, Water Quality Monitoring Program is staffed by the following positions:

Senior Biologist, Project Manager.....	Michael Adam
Water Quality Specialists.....	Alana Bartolaj, Gerry Urbanozo, Summer Interns

"Senior Biologist" serves as Project Manager, responsible for project implementation, data evaluation, public notification and the overall supervision of the Water Quality Specialists. He will assure that the project proceeds in compliance with grant requirements. He is also responsible ensuring that technical and scheduling objectives as specified in the QAPP are achieved successfully and for maintaining the official, approved QAPP. (Water Quality Monitoring in Lake County Lakes, Quality Assurance Project Plan, August, 2007)

Principal Data Users

- Des Plaines River Watershed Workgroup (DRWW)

1. Program Description

Many communities within Lake County are built around lakes. The composition of these communities is dependent on the quality of the water and the lakeshore. However, increased lakeshore development, inadequate sewage disposal, polluted storm water runoff and other improper land use practices are degrading our water quality. Some lakes have become choked with plants while others have become green and murky. As water quality continues to deteriorate, recreational activities such as fishing, boating and swimming are impaired, the local economy suffers and the general health of Lake County residents is threatened.

Protecting the quality of our lakes is an increasing concern of Lake County residents. Each lake is a valuable resource that must be properly managed if it is to be enjoyed by future generations. To assist with this endeavor, the Health Department has a Lakes Management Unit (LMU) that provides technical expertise essential to the management and protection of Lake County surface waters.

The goal of the LMU is to monitor the quality of the county's surface water in order to:

- Maintain or improve water quality and alleviate nuisance conditions
- Promote healthy and safe lake conditions
- Protect and improve ecological diversity

Services provided are either of a technical or educational nature and are provided by a professional staff of scientists to government agencies (county, township and municipal), lake property owners' associations and private individuals on all bodies of water within Lake County.

2. Project/Task Descriptions

a) Inlet/Outlet and Storm Event Water Sampling and Analysis

Water sampling at inlets/outlets of Gages, Druce, and Third Lakes will occur at 15 locations, once a month in May, June, July, August and September 2018. LCHD will sample 15 sites (9 at Gages Lake, 4 at Druce Lake and 2 at Third Lake). These collected samples will be tested for the following water quality monitoring parameters:

- Temperature
- pH
- Conductivity
- Dissolved Oxygen
- Total Phosphorus
- Total Suspended Solids
- Chlorides

Storm event sampling will be conducted 3 times during the project period (May – Sept, 2018) at the same locations as inlet/outlet sampling and at the deep hole of each lake.

b) Deep Hole Water Sampling and Analysis

Water sampling at the deep hole in each of the 3 lakes will be collected –2 samples will be collected from each lake for a total of 6 samples per sampling event (once a month). Deep Hole samples will be tested for the water quality parameters listed in Table 1.

3. Personnel, Special Equipment or Supplies

a) Personnel

- Water Quality Specialists will be responsible for deploying and calibrating equipment and downloading data.

b) Special Equipment

- Trimble ProXR GPS unit will be used to gather locational data. The GPS unit collects locational data in the WGS 84 format with sub-meter accuracy. The data will be stored in the datalogger and downloaded into the computer using the Pathfinder or Microsoft ActiveSync software. Outfall or suspected illicit discharge points will be projected and mapped in Illinois State Plane 1983 (HARN datum).
- Data sondes will be calibrated prior to each use according to the manufacturer's specifications. Conductivity is calibrated at 1.413 mS/cm. Buffer solutions of pH 7 and pH 10 are used for pH calibration.

4. Special Training Requirements or Certifications

Personnel will be trained in properly deploying and calibrating equipment, as well as downloading the data.

5. Documentation and Records

Storage, access to, and final disposition of all records are subject to the requirements of the Des Plaines River Watershed Workgroup (DRWW).

B. MEASUREMENT/DATA ACQUISITION

1. Water Sampling Methods and Analytical Methods

Water samples will be collected once a month from May through September. For inlet/outlet samples, one grab sample will be collected at the inlet and one at the outlet. At the deep hole, two samples will be taken, unless the maximum depth is less than nine feet, when only one sample (at the three foot depth) will be taken. Sample locations at the deep hole will be three feet below the surface, and 3 feet above the bottom. Samples collected after a storm event will be collected at the inlet/outlet (grab samples) and at the deep hole.

Samples will be collected with a horizontal Van Dorn water sampler. Approximately three liters of water are collected for each sample for all lab analyses. After collection, all samples will be placed in a cooler with ice until delivered to the Lake County Health Department lab, where they are refrigerated.

Analytical methods for the parameters are listed in Table 2. Except nitrate nitrogen, all methods are from the Eighteenth Edition of Standard Methods, (eds. American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1992). Methodology for nitrate nitrogen was taken from the 14th edition of Standard Methods. Dissolved oxygen, temperature, conductivity and pH will be measured at the deep hole with a Hydrolab 4a data sonde or a YSI Incorporated 6600 data sonde. Readings will be

taken at the surface and then every foot (in lakes <15 feet deep) or two feet (in lakes \geq 15 feet deep) until reaching the bottom. See Table 3 for Analytical Methods.

2. Sample Handling and Custody Requirements

The laboratory data form will serve as a Chain-of-Custody record for each sample collected and analyzed. In keeping with laboratory requirements (Standard Methods), all samples must be sealed, chilled, and transported from the sample point to the laboratory for analysis within twenty-four hours after sampling. Sample collectors will have exclusive custody of any sample from the time of collection until the sample is deposited with the laboratory. The laboratory will assume custody of each sample it receives and is responsible for forwarding all sample analysis results to the Project Manager within twenty-four hours to forty-eight hours of receiving the sample.

3. Data Management

This Project stores all data in an Access database. The data is immediately accessible and can be converted to any form usable to the local decision-makers and especially into any Microsoft Office application. A system of quality control checks will be performed to assure that all data is accurately entered into the Excel database. Appropriate user instructions and system documentation will be developed and made available to all staff using the database system.

C. ASSESSMENT/OVERSIGHT

The effectiveness of the monitoring program will be assessed at regular intervals through the use of technical systems audits, performance evaluations, and audits of data quality to verify that sampling and analysis are performed in accordance with the established QA/QC procedures and that all operational aspects of the program are acceptable.

D. RECONCILIATION WITH DATA OBJECTIVES

Data entries and analyses will be verified. Calculations will be reviewed by rechecking the computations, reviewing the assumptions used and checking the input data against the original sources to be sure transcription errors have not occurred.

1. FIELD QA/QC SAMPLES

For every 10 samples collected, LCHD will also collect a blank and duplicate samples. The blank will be made up in the field by pouring deionized water into the same type of sample containers that are used for the surface water. The deionized water will be laboratory grade water from Suburban Laboratories Geneva location. This water will be placed inside a pre-cleaned and certified container.

2. FIELD PARAMETERS

Suburban Laboratories is equipped with an YSI field meter. This meter will be utilized for the following analyses in the field:

- Conductivity
- pH
- Temperature
- Dissolved Oxygen

The results of these parameters will be reported after each sampling event and on the final report along with the results of the analyses performed in the laboratory. The meter will be calibrated each day prior to sampling.

3. FIELD REPORTING

Data Sheets

Data sheets will be kept each day that samples are collected. The data sheets will include:

- Name and signature of the field services technician;
- Location of sampling site
- Weather and water conditions (if unordinary condition apply);
- Dates and times of sample collection;
- Field measurements
- Descriptions of any unusual conditions at the sample locations
- Chains of Custody
- Indication of duplicate sample location

D. SAMPLE CUSTODY AND HANDLING

1. Labeling and Storage

All samples will be placed in non-contaminated containers provided by LCHD Laboratory. All containers will be properly labeled. The duplicate sample will be labeled with the sample location and identified as "duplicate". When preservation is required, pre-preserved bottles will be used. Samples will be placed inside a cooler with wet ice until they reach the laboratory.

2. Chain of custody

Proper chain of custody documentation will accompany the collected samples. The chain of custody will contain the sample IDs, analyses to be performed, date and time of collection, type and number of containers, preservatives added, date and time of transfers, and the signature of each person involved in custody transfer. The chain of custody will be placed in a water-resistant plastic bag inside each cooler. Indelible ink will be used on the container labels and chain of custody records. Upon receipt at the laboratory, sample temperature will be recorded on the chain of custody form. A copy of the chain of custody form will be included with the final report.

3. Sample preservation

Preservatives will be added to sample bottles prior to sample collection. Sample containers must only be purchased from reputable suppliers and cannot be re-used.

TABLE 1: Deep Hole Water Quality Sampling Parameters and Frequency

Parameter	Frequency
<u>Demand</u>	1X/mo May – September and during storm sampling events
Chloride	1X/mo May – September and during storm sampling events
Conductivity	1X/mo May – September and during storm sampling events
pH	1X/mo May – September and during storm sampling events
TSS	1X/mo May – September and during storm sampling events
Volatile Suspended Solids	1X/mo May – September and during storm sampling events
DO	1X/mo May – September and during storm sampling events
Temperature	1X/mo May – September and during storm sampling events
Turbidity	1X/mo May – September and during storm sampling events
Alkalinity	1X/mo May – September and during storm sampling events
<u>Nutrients</u>	1X/mo May – September and during storm sampling events
Ammonia	1X/mo May – September and during storm sampling events
Total Nitrates (NO ₂ + NO ₃)	1X/mo May – September and during storm sampling events
TKN	1X/mo May – September and during storm sampling events
Total phosphorus	1X/mo May – September and during storm sampling events
Soluble reactive phosphorus	1X/mo May – September and during storm sampling events

Table 2. Analytical methods used for water quality parameters.

<i>Parameter</i>	<i>Method</i>
Temperature	Hydrolab DataSondeâ 4a or YSI 6600 Sondeâ
Dissolved oxygen	Hydrolab DataSonde â4a or YSI 6600 Sonde
Nitrate and Nitrite nitrogen	USEPA 353.2 rev. 2.0 EPA-600/R-93/100 Detection Limit = 0.05 mg/
Ammonia nitrogen	SM 18th ed. Electrode method, #4500 NH3-F Detection Limit = 0.1 mg/L
Total Kjeldahl nitrogen	SM 18th ed, 4500-Norg C Semi-Micro Kjeldahl, plus 4500 NH3-F Detection Limit = 0.5 mg/L
pH	Hydrolab DataSondeâ 4a, or YSI 6600 Sondeâ Electrometric method
Total solids	SM 18th ed, Method #2540B
Total suspended solids	SM 18th ed, Method #2540D Detection Limit = 0.5 mg/L
Chloride	SM 18th ed, Method #4500C1-D
Total volatile solids	SM 18th ed, Method #2540E, from total solids
Alkalinity	SM 18th ed, Method #2320B, potentiometric titration curve method
Conductivity	Hydrolab DataSondeâ 4a or YSI 6600 Sondeâ
Total phosphorus	SM 18th ed, Methods #4500-P B 5 and #4500-P E Detection Limit = 0.01 mg/L


Soluble reactive phosphorus	SM 18th ed, Methods #4500-P B 1 and #4500-P E Detection Limit = 0.005 mg/L
Clarity	Secchi Disk
Color	Illinois EPA Volunteer Lake Monitoring Color Chart
Photosynthetic Active Radiation (PAR)	Hydrolab DataSondeâ 4a or YSI 6600 Sondeâ, LI-CORâ 192 Spherical Sensor

TABLE 3: Test Methods and Reporting Limits

	Method	MDL/Reporting Limit
Demand		
Chloride	325.2, EPA	0.5 mg/L
Conductivity	2510B, SM18th Ed.	2 µmhos/cm
pH	4500-H B, SM18th Ed.	N/A
TSS	2540D, SM18th Ed.	0.2 mg/L
VSS	2540E	0.2 mg/L
DO	4500 YSI field meter	0.1 mg/L
Temperature	170.1	°C
Alkalinity	2320B	3 mg/l
Nutrients		
Ammonia	4500 NH3 D, SM18th Ed.	0.1 mg/L
Total Nitrates (NO2 + NO3)	352.1, EPA	0.05 mg/L
TKN	4500 NH3 C, SM18th Ed.	0.124 mg/L
Phosphorous	200.8, EPA	0.02 mg/L
Soluble Reactive Phosphorus	SM4500P E	0.026 mg/L

ATTACHMENT B

Project Budget – Water Chemistry

2018 North Mill Creek Lakes Project Cost Analysis				
Lake County Health Department Ecological Services 500 W. Winchester Road, Suite 102 Libertyville, IL 60048 (847) 377-8030 (847) 984-5622 (Fax)				
Estimated Costs:				\$19,655
Inlet/Outlet Monitoring				
<i>Equipment</i>				
	Flow meter	Lump	\$ 1,500.00	2 \$3,000
	Misc fitting, hardware	Lump	\$ 750.00	1 \$750
<i>Laboratory</i>				
	Monthly Grab Samples	Lump	\$ 45.00	75 \$3,375
	Storm Event	Lump	\$ 45.00	15 \$675
<i>Personnel</i>				
	Flow Meter Deployment	Hour	\$ 45.00	30 \$1,350
	Monthly Water Sampling	Hour	\$ 45.00	30 \$1,350
	Storm Event (3)	Hour	\$ 45.00	25 \$1,125
	Field Maintenance	Hour	\$ 45.00	24 \$1,080
	Data Analysis/QAQC	Hour	\$ 45.00	20 \$900
	Administration	Hour	\$ 59.00	15 \$885
Monitoring Total				\$14,490
Water Sampling for Chloride (\$12/sample), Total Suspended Solids (\$15/sample), and Total Phosphorus (\$18/sample)				
Monthly samples: 15 sites x 5 visits				
Storm/Event samples: 5 sites x 3 visits				
Lake Monitoring				
<i>Equipment</i>				
	Buffer, turbidity solution, batteries	Lump	\$ 750.00	1 \$750
<i>Laboratory</i>				
	Monthly Grab Samples (Epilimnion and Hypolimnion on 3 lakes)	Lump	\$ 45.00	45 \$2,025
<i>Personnel</i>				
	Monthly Water Sampling	Hour	\$ 45.00	30 \$1,350
	Data Analysis/QAQC	Hour	\$ 45.00	10 \$450
	Administration	Hour	\$ 59.00	10 \$590
Monitoring Total				\$5,165
Water Sampling for Chloride (\$12/sample), Total Suspended Solids (\$15/sample), and Total Phosphorus (\$15/sample)				
Monthly samples: 3 sites x 2 profiles x 5 visits				

LATE JOINER FEE

JAWA

I called Darrell Blenniss, Exec. Director for the Lake County Joint Action Water Agency (847-582-9218). JAWA recently added new members and used the concept of a “connection fee” to have a new member pay its fair share of costs that were already incurred by existing members. Darrell explained to me that the agency first came up with an amount it wanted to recapture and then came up with a formula to apply to new members.

Michael

DRSCW

Beth, so originally we had a late joiners fee which involved paying all the dues they had missed! Two agencies did this in year 2 (so only 1 year of additional dues were applied). We then abandoned the policy in year three as we started to get very nervous and now we just let them join as they wish.

LOWER DES PLAINES WATERSHED WORKGROUP

The Lower DesPlaines is adding a one-time “start-up” fee equaling 25% of their calculated dues for all new members that join going forward.

Jennifer