



Des Plaines River Watershed Workgroup

Monitoring Committee

1/6/2015

10AM-11:30AM

Lake County Central Permit Facility

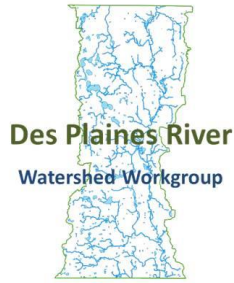
500 W. Winchester Road, Libertyville IL 60048

Outcomes:

- Discuss Bioassessment Contract

Agenda

1. Call the meeting to order
2. Approve Previous Meeting minutes
3. Public Comment
4. Action Item: Discuss Bioassessment Contract Scope
5. Next General Membership Meeting February 11th
6. Next Monitoring Committee February 18 – 9:30AM
7. Adjourn



**Des Plaines River Watershed Workgroup
Monitoring Committee
1/6/2016
10:00-11:30 AM
Lake County Central Permit Facility
500 W Winchester Road, Suite 200, Libertyville, 60048**

Meeting Minutes

1. Call the meeting to order: Joe Robinson called the meeting to order at 10:08 am.
2. Approve Previous Meeting minutes: Mike Adam said under #4, the minutes state "Lake County and Libertyville is March". This should be deleted. Mike Adam made a motion to approve the minutes, Jim Bland seconded the motion. The motion passed unanimously.
3. Public Comment: None.
4. Action Item: Discuss Bioassessment Contract Scope: Chris Yoder from MBI was introduced to the Committee. Chris said that MBI can sample 4-5 sites a day for fish and 8-9 sites a day for macroinvertebrates. The lab work and data analysis is more time consuming than the sampling. It was brought up that under Task 4D: Biological Laboratory in the MBI cost estimate, the third line in the alternate proposal has a \$12,000 error. After discussion, it was determined that this line was correct, but there was an error in Task 4D in the subtotal. Chris will revise the estimate so that the numbers are correct.

Joe stated that dissolved oxygen (DO) monitoring is another reason for the biological monitoring being spread over multiple years. He further explained that the DRWW has thought about using data sondes to continuously monitor DO and other parameters at each site being monitored that year. The program would be done in kind through sondes already purchased by North Shore Water Reclamation District and the Health Department. Some sondes would need to be retrofitted and additional sondes would need to be purchased.

Jim Bland asked about reference sites mentioned in the MBI proposal. How are they defined? Chris answered that reference sites are coordinated with Illinois EPA and IDNR and represent least impacted conditions in the region; they are likely outside the watershed. Normally, MBI completes two passes on the fish sampling for larger streams and rivers. The RFP is written for one. The only variation between the cost proposals is the two years vs. one year.

Mike Warner added account numbers under compensation for MBI contract.

Patty Werner had questions regarding the contract. She asked if Chris would be responsible for the Quality Assurance Project Plan (QAPP) for all monitoring. It was determined that there will be two separate QAPPs, one for the bioassessment including the water and sediment chemistry, which Andrea will coordinate the submittal to SMC for submittal to Illinois EPA and work with Suburban Labs to incorporate the water and sediment chemistry portion. Burns & McDonnell will write a separate QAPP for flow monitoring.

Patty said that the data and report need to be completed by December 2017 for grant purposes. An interim report is needed before December date to allow for comments. The sediment collection task allows for ten weeks until reporting which would not occur before December 2017 in year 2 of sampling. Tasks 6 and 7 start date should be 2015 instead of 2016. Chris could handle the change in the final report date if we did the alternate plan. Mike wants to add in under project deliverables more specific information about the QAPP. The technical information will be supplied by MBI. Coordinated by Geosyntec. Patty said we cannot start monitoring until the QAPP is approved. Patty asked if the US EPA conditions 319 grant conditions are included. Mike answered yes. Patty asked if the MBI proposal would

be attached. Chris offered to revise his proposal so that only the alternate is shown. Mike suggested that Chris include the word “estimate” on the cost spreadsheet to show flexibility between tasks and clarified that the contract was for a do not exceed amount of \$165,000.

Don Hey asked if the flow monitoring is continuous. Brian O’Neill answered that there is continuous monitoring for stage and three event type monitoring measurements. Don asked how many locations will be monitored. There are 21 locations. Don asked if with that data we could calculate the load. Brian answered yes.

Randy said that under compensation, a line should be added that billing should be conducted in accordance with Chris’s fee schedule. It was discussed that invoicing can occur less frequently than monthly, but not more than monthly. Chris would prefer to invoice less frequently.

Chris asked if we have a hard deadline for the QAPP and monitoring plan. Patty answered January 31st. Chris asked about the timeline of the background data compilation and analysis – does it need to be done before sampling begins? No, it should be included in the final report.

Randy asked if MBI is using any Subcontractors? If not then why are they referred to as a Subcontractor in the contract? It will be changed.

Chris asked about site access and having a kick off meeting. Andrea will send Chris an email about site access, the map book, phone numbers and emails for DOT, FPD, and SMC. Randy will notify the rangers. Andrea will make sure there are no sites on private property or if there are that we have access.

Chris asked about leaving a trailer overnight in the area. Joe will ask NSWRD. Also ask DOT. SMC offered. Joe asked if Mike W could go back to the schedule and deliverables for further review. Chris said they were fine.

Andrea will add an interim reporting date. Chris suggested October 31. The final report would be December 15.

A kickoff meeting will be scheduled for the June Monitoring Committee meeting date.

5. Next General Membership Meeting February 11th at NSWRD.
6. Next Monitoring Committee February 18 – 9:30AM at CPF.
7. Adjourn: Randy Seebach made the motion to adjourn, Steve Vella seconded the motion. The motion passed unanimously.

Committee Members Present:

Mike Adam, Lake County Health Department

Jim Bland, Sierra Club

Austin McFarlane, Lake County Public Works

Joe Robinson, North Shore Water Reclamation District

Randy Seebach, Lake County Forest Preserve District

Steve Vella, Village of Libertyville

Other Attendees:

Andrea Cline, Geosyntec

K.C. Doyle, Lake County

Rob Flood, North Shore Water Reclamation District

Don Hey, Wetlands Research Inc.

Mike Novotney, Lake County Stormwater Management Commission

Brian O’Neill, Burns & McDonnell

Kathy Paap, Wetland Research Inc.

Mike Warner, Lake County Stormwater Management Commission

Patty Werner, Lake County Stormwater Management Commission

Chris Yoder, MBI



Des Plaines River Watershed Workgroup

Monitoring Committee

2/18/2016

9:30AM – 11:00AM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

(2nd Floor SMC Conference Room)

Outcomes:

- Discuss Bioassessment Contractor (MBI) Suggested Amendments
- Plan for Post June Sampling Needs from Suburban Labs or Other

Agenda

1. Call the meeting to order
2. Approve Previous Meeting minutes
3. Public Comment
4. Action Item: Discuss Monitoring Strategy Revisions
5. Action Item: Discuss Sampling Contract and Post June 2016 Actions
6. Action Item: 2016 Budget Discussion – Monitoring Contracts Emphasis Post June
7. Next Monitoring Committee March 3rd – 9:30AM
8. Adjourn



Des Plaines River Watershed Workgroup
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1/6/2016
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Kathy Paap, Wetland Research Inc.

Mike Warner, Lake County Stormwater Management Commission

Patty Werner, Lake County Stormwater Management Commission

Chris Yoder, MBI

Warner, Mike D.

Subject: FW: DRWW Monitoring Sites Assessment

From: Chris Yoder [mailto:CYoder@mwbinst.com]

Sent: Thursday, January 28, 2016 3:18 PM

Subject: RE: DRWW Monitoring Sites Assessment

Mike –

Yes, I should be able to make it for the committee calls. Also, there are multiple options available to DRWW to address the results of my review. In the majority of cases these are driven by available budgets so I hope it helps everyone to know that there are reasonable options to deal with the number of sites issue.

Chris

Chris O. Yoder

Research Director

Midwest Biodiversity Institute

4673 Northwest Parkway

Hilliard, OH 43026

P: (614) 457-6000 ext. 1102

C: (614) 403-9592

www.midwestbiodiversity.org

From: Warner, Mike D. [mailto:MWarner@lakecountyil.gov]

Sent: Thursday, January 28, 2016 3:42 PM

Subject: RE: DRWW Monitoring Sites Assessment

Importance: High

- Chris and Andrea, we all gasped when we saw the initial information knowing we have a limited budget and all have very busy schedules. One of the reasons we adopted meeting schedules.
- Andrea's follow up below, which I have edited out some verbiage non-relevant to my request, has helped our understanding.
- The request is for Chris Yoder (via conf call), or another staff from MBI to participate in at least a few of the upcoming Monitoring committee meetings and Lakes committee, so we can ask questions, understand and respond.
- The meeting schedule is attached (with the newly formed Lake Committee info).
- The first Monitoring Committee we would like to start the discussion is 2/18 at 9:30am central time. The call in number is 847-377-7721.
- Chris, Mike Adam had stated he was going to contact you directly on data his group has collected, I think he mentioned this watershed has about 120 lakes.
- Chris, can you make the conf call on 2/18?

From: Andrea Cline [mailto:ACline@Geosyntec.com]

Sent: Wednesday, January 27, 2016 10:51 AM

Subject: DRWW Monitoring Sites Assessment

Importance: High

Hi all, I'm working with Chris on coordinating the implementation of the monitoring plan, so I have some insight into some of the points Mike raised. First of all, we are not dealing with a budget or scope adjustment – Chris is committed to working in the budget provided and monitoring all 44 sites as outlined in his scope and contract. The differences in the DRWW monitoring plan and the one Chris is developing for the group is more based on the science of how we monitor so that we get representative results that identify the causes and stressors of the impairments to the waterbodies. This will direct the group to the most cost effective way to implement solutions to water quality issues.

To address Mike's points:

- Work is underway to satisfy the QAPP deadline of January 31. Chris has given me revisions and I have cleared my schedule to integrate his work and ensure that all Illinois EPA comments are addressed to the best of our ability. Burns & McDonnell is also working on the flow monitoring QAPP for the January 31st deadline.
- Chris has agreed to implement the original DRWW monitoring plan of 44 sites this year, as per his contract, and meeting the requirements of SMC's 319 grant. His proposed changes to the monitoring plan are also part of his contract – he was tasked with reviewed and making changes to the monitoring plan to ensure that we get representative and scientific results. The DRWW is to

receive \$47,500 from SMC's 319 grant for this work. The DRWW can choose whether to implement the changes or not, to what degree, and when to implement them, if at all. FY2016 dues can be kept the same and this year can be used to continue to evaluate the monitoring plan and develop a long-term strategy on how to implement changes to the monitoring plan.

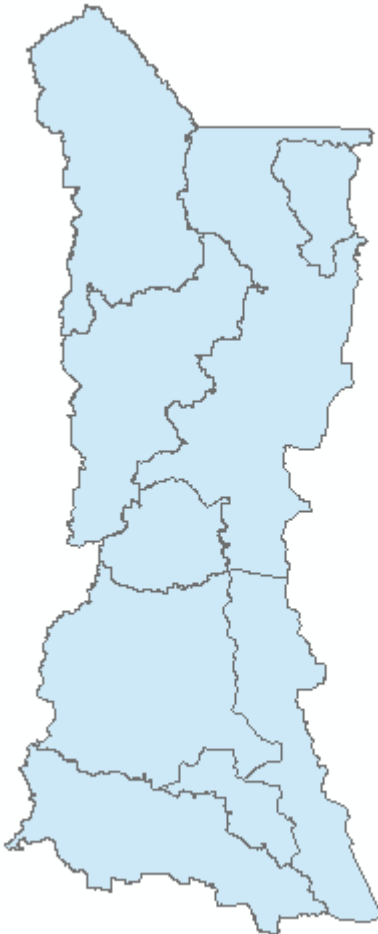
- Chris evaluated the Des Plaines River watershed on a true watershed basis, taking into account the tributary area from Wisconsin, while observing the wishes of the DRWW not to sample in Wisconsin. The watershed that Mike refers to does not take the Wisconsin tributary area into account, instead using the County line to define the watershed. Chris is using a geometric approach for site selection in which a sampling point is located at the bottom of the watershed, and then another is placed halfway back. Then those two tributary areas are further divided in half, and so on. The geometric approach is then supplemented by a targeted approach, bracketing POTWs, tributaries, and other points of interest.
- Chris also presents and is open to input on reducing sampling scale. The DRWW could choose not to sample at sites that are identified in levels 9 and 10 at this time. The group could choose to sample at those areas less frequently. The group could choose to monitor on an annual rotating basis – sampling a subset of sites annually, or all sites every so many years. Chris also proposes a reduced sampling effort at headwater sites. At this point Chris has been directed to monitor the 44 DRWW selected sites within 2016, satisfying the SMC 319 grant requirements.
- The ultimate goal of the group is to improve water quality in a cost effective way. We need to keep that in mind while we work out the details.

From: Warner, Mike D.

Sent: Tuesday, January 26, 2016 3:49 PM

Subject: RE: DRWW Monitoring Sites Assessment

The drainage/planning area for the DRWW Planning is 235 sq. mi. and is shown below.



From: Warner, Mike D.

Sent: Tuesday, January 26, 2016 3:44 PM

Subject: FW: DRWW Monitoring Sites Assessment

Importance: High

- The planning area the DRWW is working with does not include the Upper Des Plaines in Wisconsin. So Chris Yoder's assumption of 316 sq. mi doesn't match the 235. Does that effect his geometric analysis?
- Expanding the Monitoring Strategy will be up to the (Monitoring Committee) and ultimately the DRWW budget but will effect several budgets/contracts, e.g. MBI, Suburban Labs and B&M contracts.

- The summary of site changes is on the second tab of the first excel sheet he sent. The total number of sites proposed is 77 compared with our network of 45. There was a QAPP deadline of 1/31 which SMC is interpreting and recommending changes based on IEPA previously received that are not addressed. Mike Prusila, who has developed several approved QAPP's is working on this to minimize the turnaround time from IEPA QAPP approvers group (Michelle Rousey)
- For the watershed planning grant the stated deliverable was to have the entire county sampled within the two year period ending October 17, 2017. IEPA may approve a modified monitoring strategy, if they can be convinced it's a better way to go, but the deadline won't change, so we may be giving them 2/3rds of the data through 10/17/17 if its decided budgetarily we have to split the county into three - one/year sections.
- Another question is monitoring required every year upstream and downstream of the POTW's to meet your permit requirements.
- Lots of discussion to ensue on this significant change.

| Geo Level | DA Range | Geo Sites | Geo Drop | DRWW Sites | Net Total Sites |
|-----------|-------------|-----------|----------|------------|-----------------|
| 10 | 0-0.99 | 22 | -4 | 0 | 18 |
| 9 | 1.00-2.50 | 7 | 0 | 1 | 8 |
| 8 | 2.51-5.00 | 4 | -1 | 10 | 13 |
| 7 | 5.01-10.00 | 2 | 0 | 8 | 10 |
| 6 | 10.01-20.0 | 3 | -2 | 3 | 4 |
| 5 | 20.01-40.00 | 1 | 0 | 8 | 9 |
| 4 | 40.01-79.00 | 0 | 0 | 2 | 2 |
| 3 | 79.01-158.0 | 0 | 0 | 3 | 3 |
| 2 | 158.01-316 | 1 | -1 | 8 | 8 |
| 1 | >316 | 0 | 0 | 2 | 2 |
| | | 40 | -8 | 45 | 77 |

From: Andrea Cline [<mailto:ACline@Geosyntec.com>]

Sent: Tuesday, January 26, 2016 2:17 PM

To: Joe Robinson; McFarlane, Austin L.; Kolb, Peter; Warner, Mike D.; Werner, Patty S.

Subject: DRWW Monitoring Sites Assessment

Hi all, I got this run through of the monitoring plan from Chris Yoder. There is a lot to think about here. My initial thoughts are:

- We need to go through the additional sites and see where they are and what we think they would add, since we know the area.
- We can use existing info to cost out what water chemistry sampling would cost on the reduced schedule Chris suggests.
- At the end he recommends collection of chlorophyll a and provides an explanation that now makes sense.

Feel free to pass this along to others. I am also in the process of setting up a SharePoint site - like an internal website that members only would have access to. It should be up and running next week.

Andrea

From: Chris Yoder

Sent: Monday, January 25, 2016 2:40 PM

To: Andrea Cline (ACline@Geosyntec.com) <ACline@Geosyntec.com>

Cc: Rachel Day <RDay@mwbinst.com>; Vickie Gordon <VGordon@mwbinst.com>

Subject: DRWW Monitoring Sites Assessment

Andrea –

The attached analysis of the DRWW monitoring sites has two worksheets. The first is a detailed list of geometric sites derived by selecting all possible sites in Lake Co. for the geometric drainage area panels as follows:

| | |
|-----------|-----------------|
| Level 10: | <1 sq. mi. |
| Level 9: | 1-2.5 sq. mi. |
| Level 8: | 2.5-5 sq. mi. |
| Level 7: | 5-10 sq. mi. |
| Level 6: | 10-20 sq. mi. |
| Level 5: | 20-40 sq. mi. |
| Level 4: | 40-79 sq. mi. |
| Level 3: | 79-158 sq. mi. |
| Level 2: | 158-316 sq. mi. |

Level 1: >316 sq. mi.

We started with 316 sq. mi. since that is the drainage area (DA) of the Upper Des Plaines river. The panels are derived by simply halving each successive "panel" which yields the DA range for the next panel – the panel numbers are assigned in an "upstream" direction hence the smallest DAs have the highest panel number. A Geometric site is then identified for all of the DA panels between the upper and lower cutoffs for each Level using GIS to locate the coordinates for a potential site – doing this yielded a total of 40 Geometric sites in Lake Co. The practice is to then fill any gaps in the spatial coverage by adding targeted sites to cover extended vacant segments, upstream and downstream of point sources, marked changes in habitat, major tributary confluences, etc. The resulting combination of sites is termed an Intensive Pollution Survey Design because the objectives are to capture virtually all CWA jurisdictional streams (i.e., a visible bed and bank) in a watershed and to account for longitudinal pollution gradients resulting from stressor inputs including point, nonpoint source, and other stressors (e.g., habitat) and along the direction in which they exert their effects, i.e., in a downstream direction. DRWW has pretty much fulfilled this step already so we simply accepted the DRWW sites as filling the gaps in the Geometric derivation (for now). However, we may need to add sites to the Des Plaines mainstem as some of the DRWW sites are further apart than I would like. We can address this in the detailed study planning phase – what we have here should be sufficient for your end of January deadline.

The collection of Geometric and DRWW sites were then sorted by DA (smallest to largest) with the current DRWW sites included to determine the extent of any overlap. Column G lists whether the site is Geometric or an existing DRWW site. Next, I used Google Earth to conduct a desktop reconnaissance of each geometric site which was the basis for either listing a site for an on ground reconnaissance or dropping it from further consideration (shaded in red). A stream with a visible bed and bank was retained. A few sites were in lakes or wetland complexes with no visible stream in the immediate vicinity – these were dropped. I also looked at "neighboring" DRWW sites to determine if there was any functional overlap – only 3 Geometric sites were dropped for this reason.

The second worksheet is the summary of the Geometric selection of sites and their overlap with the DRWW sites – Geometric sites were given a G-# code (for now) and in the order they were found via GIS. As expected, the Geometric selection added mostly small headwater sites in panels 9 and 10, i.e., <2.5 sq. mi. DA. The rate of addition falls off rapidly at DAs >5-10 sq. mi. and this is not unexpected in the Upper Des Plaines as it is a trellised watershed as opposed to dendritic. The net result is 77 total sites for Lake County which is a net addition of 32 sites to the DRWW design. This is true only if all panel 10 sites are included – this panel alone adds 18 new sites, some of which may be rejected following the on-ground reconnaissance. Panel 9 adds 7 sites so these two panels alone add 25 of the 32 "new" sites. The good news is that these small streams can be sampled rather quickly for biological assemblages and habitat and they only need to be sampled once. I would expect this to add perhaps one+ week to the fish and macroinvertebrate field effort, which could be covered by the \$7-8K difference between our estimate and the contract total. What I am less sure about is how much this affects the macroinvertebrate lab budget as adding samples tends to be more of a fixed effort than the field work. The bad news is the potential hit on chemical sample analyses even if these sites are done at a lower frequency, i.e., 2 samples per summer-fall index period. I would not recommend doing analyses for toxics or organics nor sediment chemistry at these small stream sites unless there is a good reason to do so.

There are options for dealing with this addition of sites including doing only fish and QHEI as an initial assessment and then ramping up the indicators in a future monitoring cycle or splitting Lake Co. into 2 or 3 areas that are sampled on a rotating basis which allows for a concentration of effort for the same cost. The larger sites could be sampled annually with the attendant subwatersheds rotated in and out on an annual basis. We generally favor the rotating approach because it increases overall sampling density and it results in better coverage as opposed to scattering effort over the entire jurisdiction - this dilutes the potential for having information about condition and stressors by leaving gaps in the spatial coverage, which is a prescription for missing impairments, especially in an urban-suburban-rural setting like Lake Co. This has served us well in the DuPage-Salt Creek watersheds and the concentrated effort has revealed some relationships that would have been missed by less intensive designs.

I have also added detail about the biological, habitat, and chemical sampling by site on the detailed worksheet to show how the sampling is detailed to the size of the stream or river at a site. The current DRWW approach could be inserted into this matrix, options developed, and then decisions made about how to proceed from there. Don't get too caught up with the chemical sampling frequencies as there are options with this as well. I am also attaching the same matrix from part of our Hamilton Co. Ohio project for one of 3 watersheds that were sampled in 2014 as part of a four year rotation among 11 watersheds and 3 mainstem rivers - this particular watershed is about 130 sq. mi.

I am also recommending the collection of chlorophyll a in the water samples and benthic chlorophyll a at the larger stream sites at least once during the summer. Some states (e.g., Ohio, Minnesota) are developing eutrophication based approaches to nutrient criteria as opposed to having the more classic N and P concentration criteria. These procedures determine the trophic status of a site based on the fish and macroinvertebrate IBIs, the diel D.O. flux, chlorophyll a, and the TIN and P concentrations. The assessment of a site is weighted towards the biological indicators and chlorophyll a and less so to the chemical concentrations because they are much more variable by comparison and are not well suited to serve as a not-to-exceed criterion in the WQS. I don't know if IEPA will be looking at this approach as they have been a "follower" state on similar issues, but doing this would put the DRWW in a better position to get an arrangement like what the DRSCWG was able to negotiate for nutrients where POTW limits are being deferred pending other restoration outcomes. This will add to the overall monitoring cost, but the value in the long term may well outweigh it in terms of POTW treatment costs.

Lastly, however you choose to define it there needs to be a unique site id for each site so that the biological, chemical/physical, and habitat results can be merged in the analysis. Because of the peculiarities in how the sampling sites for each is set up relying on coordinates would be hopelessly disorganized. The DRWW sites already have a code which I assume is based on a systematic approach to deriving the numbers. We use an alpha-numeric code for DRSCWG (e.g., West Branch DuPage is WB##, etc.). We will also need to assign river miles to each DRWW sampling site – we already have a method of doing this for Illinois. Again, this can all wait until we develop the detailed study plan.

Let me know if you want to discuss this via a Webex (MBI can set this up) – I am booked until Thursday so maybe we can talk then or sometime the week after.

Chris O. Yoder
Research Director
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C: (614) 403-9592
www.midwestbiodiversity.org



Legend

DRWW Site

● DRWW Site

Geometric Sites

Geometric Level

◆ 2

◆ 5

◆ 6

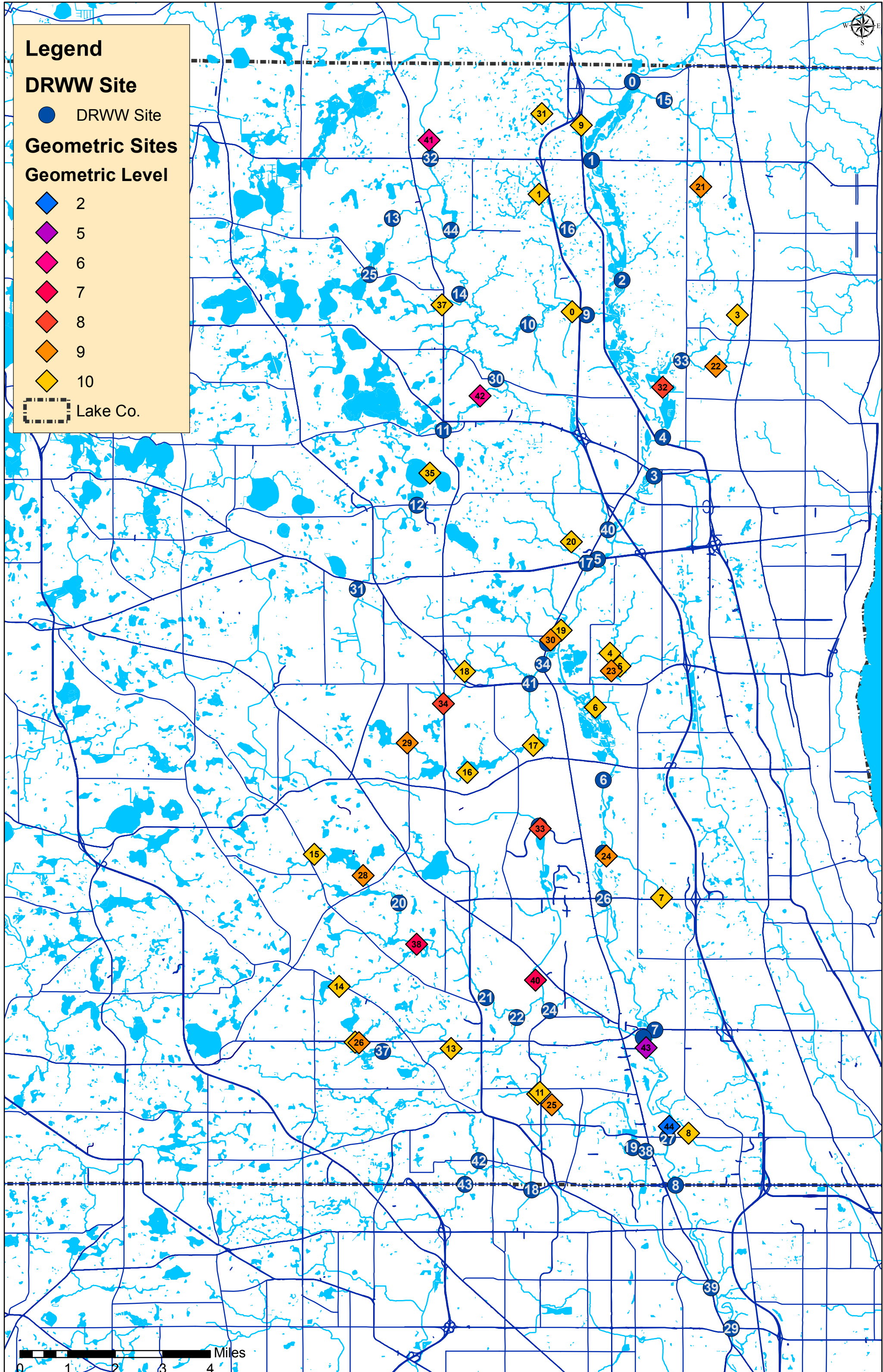
◆ 7

◆ 8

◆ 9

◆ 10

⬜ Lake Co.





MEMORANDUM

Date February 12, 2016
TO: Des Plaines River Watershed Workgroup
FR: Mike Warner, DRWW Administrative Agent
RE: Contract Amendment for Suburban Labs

**ACTION REQUESTED: Discussion at 2/18/16 Monitoring Committee
Approval of Contract Amendment at 2/18/16 Executive Board**

SMC has had several discussion with Suburban Labs on changing the excel file deliverable in their current contract to match the data formatting required by the IEPA grant (STORET format) that is supported by DRWW monitoring efforts. An example excel file is attached.

STORET Data Formatting: Based on discussions and going back and forth with revisions to the excel format, that effort has been quantified and format tentatively approved. The cost to execute and amendment is also attached. Final approval will need to be in a contract amendment with Suburban Labs increasing their contract for a one time system modification of \$3000 from \$66,508 to \$69,508, approved by the Executive Board. There is funding available for this amendment.

Contract End Date: The start of the six (6) contractual samplings was moved back from the original contract date of July 2015 to September 2015 due to delays in the RFP process and finalizing monitoring locations. Suburban Labs was able to complete 3 samplings in 2015 starting in September 2015 and is planning on starting sampling (weather permitting) in March 2016. To accommodate the collection of the three additional samplings, this letter of agreement would extend the original contract through the end of June 2016, and Suburban labs would provide three (3) additional samplings during the period of March 2016 to June 2016.

Signature of this agreement amendment cover document will constitute agreement with the extension and additional cost associated with data management.

For the DRWW:

Attest:

Peter Kolb, President

Date:

Signature, Title

Suburban Labs

Dan Galeher

Date

Vice President of Sales and Service Suburban Laboratories, Inc.

SUBURBAN LABORATORIES, Inc.



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January 29, 2016

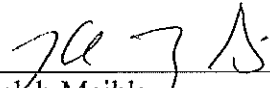
Mike Warner
Des Plaines River Workgroup

Subject: Amendment to Agreement for Des Plaines River Sampling

Mike Warner with the Des Plaines River Workgroup has inquired with Suburban Labs for formatting a spreadsheet (STORET form) for analytical results for the Des Plaines River sampling. The price for completion of this is \$3,000.

Please sign below, agreeing to the quoted price.

Yours very truly,

 1/29/16
Kaleb Meihls
Suburban Labs

Mike Warner
Des Plaines River Workgroup



| Client/SampID | Analyte | Units | EDDFinalQual | MDL | 9/21/2015 12:54:00 PM | 10/22/2015 10:54:00 AM | 12/1/2015 11:35:00 AM |
|---------------|----------------------------------|-----------|--------------|-------|-----------------------|------------------------|-----------------------|
| 13-2 | Conductivity | umhos/cm | | | 1298 | | 1257 |
| 13-2 | Dissolved Oxygen | mg/L | | | 8.79 | | 8.59 |
| 13-2 | pH, Field | | | | 8.11 | | 8.15 |
| 13-2 | Temperature | C | | | 20.61 | | 14.17 |
| 13-2 | Chloride | mg/L | | 20 | | 102 | 170 |
| 13-2 | E. Coli | MPN/100mL | | 1 | 236 | | 816 |
| 13-2 | Mercury | ng/L | | 0.5 | | | 1.21 |
| 13-2 | Nitrogen, Ammonia (As N) | mg/L | ND | 0.1 | 0.1 | | 0.1 |
| 13-2 | Nitrogen, Kjeldahl, Total | mg/L | J | 0.5 | 1.2 | | 0.97 |
| 13-2 | Nitrogen, Kjeldahl, Total | mg/L | JS | 0.5 | | 0.83 | |
| 13-2 | Orthophosphate (As P) | mg/L | | 0.026 | 0.17 | | 0.16 |
| 13-2 | Orthophosphate (As P) | mg/L | | 0.13 | | 1 | |
| 13-2 | Residue, Non-Filterable | mg/L | | 0.2 | 8.2 | 6 | 16.4 |
| 13-2 | Sulfate | mg/L | | 2 | 32.2 | | |
| 13-2 | Sulfate | mg/L | | 4 | | | 46.4 |
| 13-2 | Sulfate | mg/L | | 10 | | 75.6 | |
| 13-2 | Total Nitrates (Nitrate+Nitrite) | mg/L | | 0.05 | 1.3 | 0.454 | |
| 13-2 | Total Nitrates (Nitrate+Nitrite) | mg/L | | 0.1 | | | 2.78 |
| 13-2 | Total Organic Carbon | mg/L | ND | 1 | 1 | 1 | |
| 13-2 | Total Organic Carbon | mg/L | ND | 1.43 | | | 1.43 |
| 13-2 | Turbidity | NTU | | 0.1 | | 5.21 | 30.1 |
| 13-2 | Turbidity | NTU | H | 0.1 | 9.36 | | |
| 13-2 | Volatile Suspended Solids | mg/L | J | 0.2 | 2.8 | 1.4 | 4.4 |
| 13-2 | Arsenic | mg/L | | 8E-04 | | 0.00939 | |
| 13-2 | Calcium | mg/L | | 0.015 | | 72.2 | |
| 13-2 | Copper | mg/L | | 0.001 | | 0.00166 | |
| 13-2 | Hardness (As CaCO3) | mg/L | | 0.05 | | 313 | |
| 13-2 | Iron | mg/L | | 0.012 | | 0.354 | |
| 13-2 | Magnesium | mg/L | | 0.011 | | 32.1 | |
| 13-2 | Manganese | mg/L | | 0.002 | | 0.0638 | |
| 13-2 | Nickel | mg/L | | 4E-04 | | 0.00134 | |
| 13-2 | Phosphorus | mg/L | | 0.02 | 0.236 | 1.06 | 0.183 |
| 13-2 | Sodium | mg/L | | 0.1 | | 96.5 | |
| 13-2 | Zinc | mg/L | | 0.005 | | 0.00753 | |
| 13-2 | 1,1,1-Trichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,1,2,2-Tetrachloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,1,2-Trichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,1-Dichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,1-Dichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,2-Dibromo-3-chloropropane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,2-Dichlorobenzene | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,2-Dichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,2-Dichloropropane | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,3-Dichlorobenzene | ug/L | ND | 1 | | 1 | |
| 13-2 | 1,4-Dichlorobenzene | ug/L | ND | 1 | | 1 | |
| 13-2 | 2-Butanone | ug/L | ND | 10 | | 10 | |
| 13-2 | 2-Chloroethyl vinyl ether | ug/L | ND | 10 | | 10 | |
| 13-2 | 2-Hexanone | ug/L | ND | 25 | | 25 | |
| 13-2 | 4,4'-DDD | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | 4,4'-DDE | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | 4,4'-DDT | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | 4-Methyl-2-pentanone | ug/L | ND | 25 | | 25 | |
| 13-2 | Acenaphthene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Acenaphthylene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Acetone | ug/L | ND | 25 | | 25 | |
| 13-2 | Acrolein | ug/L | ND | 25 | | 25 | |
| 13-2 | Acrylonitrile | ug/L | ND | 25 | | 25 | |
| 13-2 | Aldrin | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | alpha-BHC | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | alpha-Chlordane | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Anthracene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1016 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1221 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1232 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1242 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1248 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1254 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Aroclor 1260 | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Benzene | ug/L | ND | 1 | | 1 | |
| 13-2 | Benzo(a)anthracene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Benzo(a)pyrene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Benzo(b)fluoranthene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Benzo(g,h,i)perylene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Benzo(k)fluoranthene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | beta-BHC | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Bromodichloromethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Bromoform | ug/L | ND | 1 | | 1 | |
| 13-2 | Bromomethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Carbon disulfide | ug/L | ND | 1 | | 1 | |
| 13-2 | Carbon tetrachloride | ug/L | ND | 1 | | 1 | |
| 13-2 | Chlordane | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Chlorobenzene | ug/L | ND | 1 | | 1 | |
| 13-2 | Chloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Chloroform | ug/L | ND | 1 | | 1 | |
| 13-2 | Chloromethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Chrysene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | cis-1,2-Dichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | cis-1,3-Dichloropropene | ug/L | ND | 1 | | 1 | |
| 13-2 | delta-BHC | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Dibenzo(a,h)anthracene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Dibromochloromethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Dichlorodifluoromethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Dieldrin | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | Endosulfan I | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Endosulfan II | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | Endosulfan sulfate | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | Endrin | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | Endrin aldehyde | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | Endrin ketone | ug/L | ND | 0.05 | | 0.05 | |
| 13-2 | Ethylbenzene | ug/L | ND | 1 | | 1 | |
| 13-2 | Fluoranthene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Fluorene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | gamma-BHC | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | gamma-Chlordane | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Heptachlor | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Heptachlor epoxide | ug/L | ND | 0.025 | | 0.025 | |
| 13-2 | Indeno(1,2,3-cd)pyrene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | m,p-Xylene | ug/L | ND | 2 | | 2 | |
| 13-2 | Methoxychlor | ug/L | ND | 0.25 | | 0.25 | |
| 13-2 | Methyl tert-butyl ether | ug/L | ND | 1 | | 1 | |
| 13-2 | Methylene chloride | ug/L | ND | 5 | | 5 | |
| 13-2 | Naphthalene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | o-Xylene | ug/L | ND | 1 | | 1 | |
| 13-2 | Phenanthrene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Pyrene | ug/L | ND | 0.1 | | 0.1 | |
| 13-2 | Styrene | ug/L | ND | 1 | | 1 | |
| 13-2 | Tetrachloroethene | ug/L | ND | 1 | | 1 | |
| 13-2 | Toluene | ug/L | ND | 1 | | 1 | |
| 13-2 | Total Xylenes | ug/L | ND | 2 | | 2 | |
| 13-2 | Toxaphene | ug/L | ND | 0.2 | | 0.2 | |
| 13-2 | trans-1,2-Dichloroethane | ug/L | ND | 1 | | 1 | |
| 13-2 | trans-1,3-Dichloropropene | ug/L | ND | 1 | | 1 | |
| 13-2 | Trichloroethene | ug/L | ND | 1 | | 1 | |
| 13-2 | Trichlorofluoromethane | ug/L | ND | 1 | | 1 | |
| 13-2 | Vinyl chloride | ug/L | ND | 1 | | 1 | |

TECHNICAL SERVICES AGREEMENT between the
DES PLAINES RIVER WATERSHED WORKGROUP
and
SUBURBAN LABORATORIES, INC. for
WATER CHEMISTRY MONITORING

This is an agreement (Agreement) by and between the DES PLAINES RIVER WATERSHED WORKGROUP, 500 West Winchester Road, Libertyville, Illinois 60048 (DRWW) and SUBURBAN LABORATORIES 1950 S Batavia Avenue, Geneva, IL 60134 (Subcontractor).

PURPOSE

The DRWW wishes to engage the Subcontractor to provide technical services to assist the DRWW in conducting water chemistry monitoring in the Des Plaines River watershed located in central Lake County, Illinois. The water chemistry monitoring will satisfactorily collect and process water column chemistry monitoring samples within the service area. The group has selected approximately 44 sampling locations within the Des Plaines River watershed in Lake County, Illinois.

SERVICES

The Subcontractor will conduct water column chemistry sampling by collecting samples, analyzing the samples collected, and providing the data to the DRWW based on the approved DRWW Quality Assurance Project Plan. The Scope of Services to be provided by the Subcontractor to accomplish the DRWW's objectives for the water column chemistry monitoring is set forth in Attachment A, Suburban Laboratories Quote.

COMPENSATION

1. The Subcontractor agrees to perform the Scope of Services and furnish the items included in the Scope of Services for a fee (Agreement Amount) not to exceed \$66,508 according to the rates in the Project Budget Attachment B.
2. The DRWW agrees to pay the Subcontractor for a total project cost not to exceed \$66,508 using the compensation schedule identified in Attachment B. The final ten percent 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 Subcontractor shall furnish the DRWW with an itemized invoice on a monthly basis. Invoices shall describe the work completed; show the actual number hours worked by team member; and actual travel and other expenses that have occurred. Payments by the DRWW shall be made within 60 days of receipt of the invoice from the Subcontractor.

SCHEDULE AND DELIVERABLES

All sampling shall be completed by March 30, 2016. The project, including all reporting, shall be completed by April 15, 2016 and proceed according to the schedule details outlined and as follows. Generally, sampling will be conducted at all sites within one week per month and approximately the same week every month.

Sampling Schedule

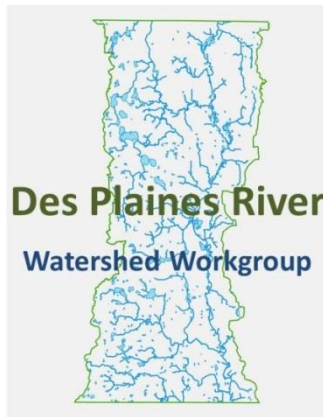
- July 2015
- August 2015
- September 2015
- November 2015
- March 2016

Project Deliverables:

- Monthly reports including electronic data deliverables (EDDs) and the sample results in an editable Microsoft Excel file.
- 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.

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 Subcontractor'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 Subcontractor's expense. The Subcontractor 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 Subcontractor 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. The Subcontractor agrees to comply with the Conditions/Certifications outlined in Lake County Stormwater Management Commission's (SMC's) grant agreement #3191506 with the Illinois Environmental Protection Agency. The Certifications/Conditions are provided in Attachment C. Please note that "Recipient" refers to SMC, not the Subcontractor.



Des Plaines River Watershed Workgroup

Monitoring Committee

3/3/2016

9:30AM – 11:00AM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

(2nd Floor SMC Conference Room)

Outcomes:

- Discuss Bioassessment Contractor (MBI) Suggested Amendments
- Plan for Post June Sampling Needs from Suburban Labs or Other

Agenda

1. Call the meeting to order
2. Agenda Changes/Approval
3. Approve Previous Meeting minutes
4. Public Comment
5. Action Item: Discuss Monitoring Strategy/QAPP Revisions
6. Action Item: Discuss Sampling Contract (Sediment Analysis) and Post June 2016 Actions
7. New Business
8. Next Monitoring Committee April 7th – 9:30AM
9. Adjourn



Des Plaines River Watershed Workgroup

Monitoring Committee

2/18/2016

9:30-11:00 AM

Lake County Central Permit Facility

500 W Winchester Road, Suite 200, Libertyville, 60048

Meeting Minutes

1. Call the meeting to order: Joe Robinson called the meeting to order at 9:33 am.
2. Approval of 12/10/15 meeting minutes: Al Giertych motioned to approve the minutes, Mike Adam seconded. The motion passed unanimously.
3. Public Comment: Steve Vella asked about the annual report for the POTWs that is due March 31st. Joe will put together first draft. Most of it that will include other committee reports. There was a discussion whether the POTWs needed to submit the report or the DRWW. Steve pointed out that the Libertyville permit states that the DRWW will submit a report. Austin said that Lake County Public Works has additional material to submit and will submit the DRWW report with their overall report. Joe said the reporting period would be from January 1- December 31st, not including Suburban Labs' March sampling event. A discussion was had regarding the formatting of the data. Mike Warner said that this was an agenda item for the Executive Board today. Mike said that yesterday the Illinois EPA gave us a new format instead of STORET. Mike said one page is the same and that SL will fill out that page. The rest of the pages will be filled out by an SMC intern hired as a part of the 319 grant.
4. Action Item: Discuss Monitoring Strategy Revisions. Chris Yoder talked about how the geometric sites were delineated. They used the USGS watershed delineation program. It is a more geographic, equitable distribution of sites. Not every stream is necessarily sampled. One square mile is a rough, rule of thumb that with that drainage area in the midwest, it would have bed and bank and support aquatic life. The spreadsheet is ordered from the smallest drainage area to the largest. There are more level 10 sites, than level 9, etc. The number of sites becomes smaller in the larger drainage areas. The next step is to do a desktop reconnaissance using Google Earth. Sites that are highlighted in red were not found and were dropped. The sites could have been filled, or a culvert put in. The rest of the sites had visible bed and bank. To complete the process, their needs to be a field reconnaissance to determine whether the site should be kept. If there isn't sufficient water there will not be biota. If water depths are 20-40 cm deep at a site, the site could have sufficient biota to be considered jurisdictional under Illinois' general use. MBI also tried to determine where the geometric sites were close enough to an existing DRWW site. Those geometric sites were dropped as well. This starts occurring at the 3-4 square mile drainage area. In the spreadsheet, in the column labeled "Fish", F stands for back pack, E is long line, D is barge mounted electroshocking. They are all wadeable methods. The P method is a raft for the mainstem. This has all been determined by Google Earth and would all be verified in the field. Macroinvertebrates are all sampled by the same method which

is the Illinois multivariate. QHEI is used for habitat sampling. Field chemistry would be sampled three times. Cost savings could be realized by splitting the sites into different years – a rotating approach where not everything is sampled every year. Or the DRWW could choose to table this approach and continue to do what you are doing now. The resolution of the current sampling plan is down to a 4-5 square mile drainage area. There is some merit for looking at headwater sites. We need to collect the right type of data.

Jim Bland asked about the metric for sampling macroinvertebrates. Chris answered that mBI is used. MBI is the older index. They have consulted Illinois EPA many times regarding this.

Jim also asked how contingencies relating to weather are dealt with. Chris answered you can't sample a dry stream. This is summer and fall normal weather sampling. If they are dry, they do not get sampled.

Chris said that 6-7 sites can be sampled for fish per day. Macroinvertebrates take more time. Joe asked if water chemistry for levels 9 and 10 could be handled by biological sampling team. Chris answered yes. Chris added that the small sites in DuPage had a lot lower phosphorous and nitrogen. In DuPage sites are also uniformly biologically impaired. In Des Plaines this does not seem to be the case, probably due to less urban land use.

It was pointed out that line 27 in the spreadsheet is not correct. There was confusion surrounding sites 13-10 and 13-11.

GIS people from MBI and SMC will get together and review sites. Then divide sites amongst committee members and review.

Chris will do a revised cost estimate.

For the March water chemistry sampling we will continue with the 44 sites.

5. Action Item: Discuss Sampling Contract and Post June 2016 Actions. Amendment to SL's contract for data formatting. This is on the agenda for the Executive Board. The amount needs to be changed from \$66,508 to 69,508 and the time needs to be extended through June 2016. Mike Adam made the motion, Joe says let's wait until next meeting.
6. Action Item: 2016 Budget Discussion – Monitoring Contracts Emphasis Post June
7. Next Monitoring Committee meeting March 3 – 9:30 AM
8. Adjourn: Motion to adjourn was made by Mike Adam, seconded by Randy Seebach. Passed unanimously.

Committee Members Present:

Mike Adam, Lake County Health Department

Jim Bland, Sierra Club

Austin McFarlane, Lake County Public Works

Joe Robinson, North Shore Water Reclamation District

Steve Vella, Village of Libertyville

Other Attendees:

Andrea Cline, Geosyntec

Brian Dorn, North Shore Water Reclamation District

Rob Flood, North Shore Water Reclamation District

Jeff Laramy, Lake County Stormwater Management Commission

Brian O'Neill, Burns & McDonnell

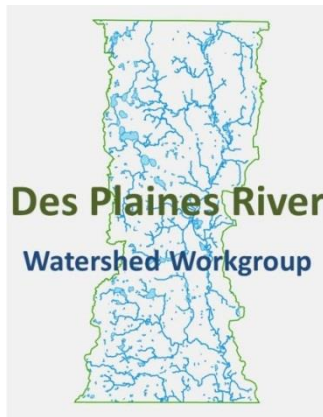
Sharon Osterby, Lake County Stormwater Management Commission

Mike Prusila, Lake County Stormwater Management Commission

Randy Seebach, Lake County Forest Preserve District

Mike Warner, Lake County Stormwater Management Commission

Patty Werner, Lake County Stormwater Management Commission



**Des Plaines River Watershed Workgroup
Monitoring Committee
4/21/2016
1PM
Lake County Central Permit Facility
500 W. Winchester Road, Libertyville IL 60048
(2nd Floor SMC Conference Room)**

Outcomes:

- Post June Monitoring and WQ Sampling Needs from Suburban Labs or Other?

Agenda

1. Call the meeting to order
2. Agenda Changes/Approval
3. Approve Previous Meeting minutes
4. Public Comment
5. Action Item: Discuss Monitoring Program Items
6. New Business
7. Next Monitoring Committee June 16th – 1PM
8. Adjourn

Committee Members in Attendance: Joe Robinson; Jim Bland; Mike Adam; Steve Vella; Rob Flood
Others: Mike Warner, Andrea Cline; Jim Anderson; Leslie Berns; Tom Morthorst

Meeting Follow Ups:

General Membership Meeting May 19 – George Wells ppt (verify with Peter, Brian); Future WQ sampling contract, Geosyntec Database, B&M Update on Flow monitoring

Future Task Identification – Monitoring Up/Down of two FPD dam removals (Starting July 2016)

Andrea to send SL WQ data to Leslie, send out info on Sharepoint, Presentation at GM on DRSCW database, GM draft meeting agenda

MBI Insurance Certificate (needed! Naming SMC, County of Lake, DRWW, LCFPD)

Jim Bland volunteered to shadow SL on WQ sampling sites (no charge!) – Tx Jim

Future Task Identification – QA/QC of sampling data per point, per testing period

Future Task Identification – analysis of data collected (statistics, load allocations and TMDL's, etc.)



Des Plaines River Watershed Workgroup

Monitoring Committee

3/3/2016

9:30AM – 11:00AM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

Outcomes:

- Discuss Bioassessment Contractor (MBI) Suggested Amendments
- Plan for Post June Sampling Needs from Suburban Labs or Other

Meeting Minutes

9. Call the meeting to order: Joe Robinson called the meeting to order at 9:35.
10. Agenda Changes/Approval: Joe asked if there were any changes to the agenda. There were none. Mike Adam made a motion to approve the agenda. Al Giertych seconded. The motion passed unanimously.
11. Approve Previous Meeting minutes: Al made a motion to approve the minutes from 2/18, Mike Adam seconded the motion. Al was not recorded on the attendance. The minutes will be amended to reflect that. The motion passed unanimously.
12. Public Comment: Jim Bland brought up the chloride/conductivity correlation. Mike Adam is working with the lab to resolve this. Jim requested that the units be identified in the monitoring reports, Excel spreadsheets, and that exceedances are identified. Andrea Cline said that that would be post processing that DRWW would do. Jim also noticed Hg hits. Jim asked that Chris Yoder from MBI looks at impervious cover in his analysis. Andrea asked if SMC has an impervious cover layer. Mike Prusila said it could be made. Would need to determine the drainage areas to the monitoring sites. Jim also brought up the Army Corps of Engineers proposal to do work on the Des Plaines. Not clear on what the status of this work is. At some point in time this needs to be discussed. It calls for \$1 million of monitoring. Mike Warner said it calls for a local sponsor to pay at least 35%. Jim Anderson said it's a feasibility study that will not go anywhere.
13. Action Item: Discuss Monitoring Strategy/QAPP Revisions: Chris shows 45 sites instead 44. Andrea will identify which site that is. Mike Adam thinks it's a tier 1 site, that the total went from 11 to 10. Chris listed 77 sites, the spreadsheet Mike W is showing shows 69 sites. Joe said that there are sites on private land, 7 sites, that are on private land that need to be removed from the spreadsheet Chris sent yesterday. Chris also said he wants to add two to three additional sites on the mainstem. Jim Bland made a motion to approve Version 3 of Patty's budget to add to the Monitoring Strategy to send to Illinois EPA, Austin McFarland seconded the motion. The motion passed unanimously.
The red color on Joe's sheet indicates sites that need to be removed. Orange sites are changes Joe made to the spreadsheet, some are stream names or additional location. Blue sites are ones

that are currently not part of our plan that should be. Blues would become tier 3 or 4. After June bring in level 9 sites to SL contract. Possible removal of sediment from Tier 3, depending on cost.

Continuous Monitoring: sonde in the stream to take measurements on a continuous basis.

Discussion was doing this in kind. Joe asked if Mike Adam and Rob Flood would develop a program. Brian O'Neill mentioned that this might be a good idea to coordinate with the flow monitoring.

14. Action Item: Discuss Sampling Contract (Sediment Analysis) and Post June 2016 Actions. This will be revisited after the sites are finalized at the next meeting.
15. New Business: There was no new business.
16. Next Monitoring Committee April 7th – 9:30AM
17. Adjourn: Mike Adam made a motion to adjourn, seconded by Al Giertych. The motion passed unanimously.

Committee Members Present:

Mike Adam, Lake County Health Department

Jim Bland, Sierra Club

Al Giertych, Lake County DOT

Austin McFarlane, Lake County Public Works

Joe Robinson, North Shore Water Reclamation District

Steve Vella, Libertyville

Others Attendees:

Jim Anderson, Lake County Forest Preserve District

Leslie Burns, Lake County Forest Preserve District

Andrea Cline, Geosyntec

Rob Flood, North Shore Water Reclamation District

Tom Morthorst, Third Lake

Brian O'Neill, Burns & McDonnell

Mike Prusila, Lake County Stormwater Management Commission

Mike Warner, Lake County Stormwater Management Commission



Des Plaines River Watershed Workgroup

Monitoring Committee

6/16/2016

1:00PM – 2:30PM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

(2nd Floor SMC Conference Room)

Outcomes:

- Finalize Monitoring Site Locations
- Plan for Post June Sampling Needs from Suburban Labs or Other

Agenda

1. Call the meeting to order
2. Agenda Changes/Approval
3. Approve Previous Meeting minutes -Attached
4. Public Comment
5. Recognize LCFPD & LCDOT for Additional Funding for Expanded Monitoring Study (MOU/IGA-attached)
6. Action Item: Discuss Update on QAPP Status/Revisions (IEPA Email Attached)
7. Action Item: Discuss Organization Program for Data
8. Action Item: Finalize Monitoring Sampling Points – (SMC GIS Handout and Display)
9. Action Item: Discuss Sampling Contracts and Post June 2016 Actions (SL and MBI Contracts Attached)
10. Action Item: Discuss MS4 Permit Requirements – (SMC Permit Summary Attached)
11. New Business
12. Next Monitoring Committee July 21st – 1:00PM
13. Adjourn



Des Plaines River Watershed Workgroup

Monitoring Committee

4/21/2016

1:00PM – 2:30PM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

Outcomes:

- Discuss Bioassessment Contractor (MBI) Suggested Amendments
- Plan for Post June Sampling Needs from Suburban Labs or Other

Meeting Minutes

1. Call the meeting to order: Joe Robinson called the meeting to order at 1:05.
2. Agenda Changes/Approval: Joe asked if there were any changes to the agenda. There were none.
3. Approve Previous Meeting minutes: Mike Adam made a motion to approve the minutes from 3/9, Al seconded the motion. The motion passed unanimously.
4. Public Comment: None.
5. Action Item: Discuss Monitoring Program Items. Joe brought up the Forest Preserve District Foundation additional funds. Joe said the most important thing is to get all sites sampled for biological parameters to establish a baseline. He wants to bring this idea to the Committee for discussion. What's going to be in the sediment will be there long term. For the first two years we will sample the 79 sites and get initial biological scores. Future years we will divide the watershed into three areas and it will be less intensive for the sampling. We will have more funding available to us in future years. Joe thinks it makes sense to move sediment sampling back for all sites, or alternatively at least Tier 3 sites.

Jim Anderson provided an update that the FPD Foundation will contribute \$40,000 for the monitoring. LCDOT will contribute if there is additional money needed over \$40,000. Under this funding plan, sediment chemistry would be collected at 51 sites – the original Tier 1, 2, and 3 sites plus some.

Andrea asked Jim Anderson if the FPD has any feedback about switching to every third year after the baseline is established. Jim Anderson deferred to Leslie. Andrea also asked if the FPD had any input into which sites were sampled when in subsequent years to the baseline, specifically any projects which they would want before and after data. Jim Anderson said there are two dam removals: MacArthur Woods and Wright Woods in July. It was discussed whether continuous monitoring could be deployed ahead of that. Joe also mentioned that Don Hey's riffle structure would be interesting to get upstream and downstream. There are four data sondes from the Health Department two from NSWRD. Mike Warner mentioned that they have interns coming on at the end of May. Jim Anderson said Leslie could help as well. Mike Adam will take two of the Health Department's sondes and send them to YSI for retrofitting. Joe asked Mike Warner would the DRWW be able to cover that – is there room in the budget. Mike Adam said to refurbish it would be \$5,000 and new would be \$14,000. Rob Flood said YSI is costly there are cheaper ones - \$8,500. Rental price is expensive. They are capable of monitoring DO,

conductivity, and pH. Mike Adam and Rob will continue the conversation and come up with options at the next meeting.

Jim Anderson brought up Ethel's Woods. USGS monitors sediment and turbidity at two locations, one above and one below the project. Mike Warner asked if there are nutrient issues associated with dam removals. Jim said there is not a lot of sediment behind MacArthur Woods dam. Joe said sometimes initially you'll get a phosphorus release with sediment transport.

Mike Adam said the big effect is in DO and biodiversity.

Data management: Andrea will send out the links to SharePoint and DropBox. She asked if the group wants a presentation from Geosyntec who set up the DRSCW database at next meeting.

The Suburban Labs contract ends in June. Discussion took place regarding putting all of the data in one spreadsheet instead of separate spreadsheets. Jim Bland suggested that Illinois EPA standards be added to the data for comparison and exceedances be flagged, color coded. Jim Anderson expressed concern about the QA/QC of the data. Jim Bland said he and Cindy Skrukud would review the data. Jim Anderson asked if Suburban Labs was required to keep the samples for a period of time. Rob asked if split sampling was required. Andrea will look into it. It was stated that we have four months of data - Sept, Oct, Nov, March is coming in now. Joe and Mike Adam will look at data after in the appropriate format.

6. New Business: There was no new business.
7. Next Monitoring Committee June 16th – 1:00PM; General Membership meeting May 19th
8. Adjourn: Mike Adam made a motion to adjourn, seconded by Al Giertych. The motion passed unanimously.

Committee Members Present:

Mike Adam, Lake County Health Department

Jim Bland, Sierra Club

Al Giertych, Lake County DOT

Joe Robinson, North Shore Water Reclamation District

Steve Vella, Libertyville

Jim Anderson, Lake County Forest Preserve District

Others Attendees:

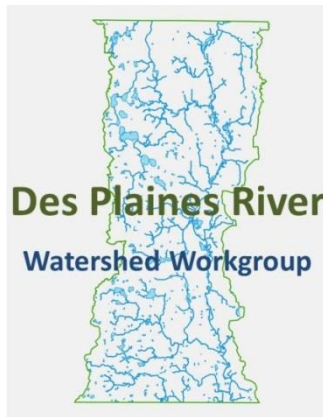
Leslie Burns, Lake County Forest Preserve District

Andrea Cline, Geosyntec

Rob Flood, North Shore Water Reclamation District

Tom Morthorst, Third Lake

Mike Warner, Lake County Stormwater Management Commission



Des Plaines River Watershed Workgroup

Monitoring Committee

10/20/2016

1PM – 2:30PM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

(2nd Floor SMC Conference Room)

AGENDA

1. Call the meeting to order
2. Agenda Changes/Approval
3. Approve Previous Meeting minutes - Attached
4. Public Comment
5. Discussion Item – Monitoring Program Updates
6. Discussion Item – Future 2016 DRWW Accomplishments Report
7. New Business
8. Next Meeting (General Membership Meeting - November 17th at Lake County Public Works Training Facility)
9. Adjourn



Des Plaines River Watershed Workgroup

Monitoring Committee

6/16/2016

1:00PM – 2:30PM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

Outcomes:

- Finalize Monitoring Site Locations
- Plan for Post June Sampling Needs from Suburban Labs or Other

Meeting Minutes

1. Call the meeting to order: Joe Robinson called the meeting to order at 1:05.
2. Agenda Changes/Approval: Joe asked if there were any changes to the agenda. There were none.
3. Approve Previous Meeting minutes: Mike Adam made a motion to approve the minutes from 3/9, Al seconded the motion. The motion passed unanimously.
4. Public Comment: Don Hey and Kathy Paap from Wetlands Research, Inc. requested a letter of support for a project in Vernon Hills with Lake County Public Works to restore wetlands and potentially use in the future for water quality trading. They will provide a template/written information about the project.
5. Recognize LCFPD & LCDOT for Additional Funding for Expanded Monitoring Study
6. Action Item: Discuss Update on QAPP Status/Revisions. Andrea Cline said that SMC had passed along comments on the Bioassessment QAPP and they are working to address them. Jim Bland requested that the QAPP comments from Illinois EPA be passed along to the Committee.
7. Action Item: Discuss Organization Program for Data. Leslie Burns integrated all of the EDDs into a master spreadsheet. The issue is that SL is submitting the data in multiple formats. Leslie said that some of sites were being sampled according to the wrong tiers. Mike Warner said that he will have Jeff Laramy put it on the SMC interns' rainy day list. He would also entertain a separate contract between SMC and SL to get the data in order. Joe Robinson also talked about the high fecal levels. Steve Vella asked for the sampling date.
8. Action Item: Finalize Monitoring Sampling Points. Jim Bland asked if we could put an updated KMZ file on the DRWW website. Jim also said that MBI used attribute tables in Google Maps. Discussion took place regarding site access. SMC has stream maintenance authority. The question was asked how many are on private property owners. A letter has been sent out to all riparian property owners for stream inventory. Mike Warner said sampling should be okay, no further permission will be necessary. Jeff brought up that the letter wasn't sent out in all subwatersheds and asked if it should be sent out to the riparian land owners in subwatersheds

where stream inventories are not being done? Mike Warner said no. Andrea said that the DRWW also has a letter for the sampling teams to carry with them.

9. Action Item: Discuss Sampling Contracts and Post June 2016 Actions. The contract amendment for MBI is for \$195,351 and 69 sites; originally the contract was for \$165,000 and 44 sites. The new contract with SL is for \$115,000 for six sampling events for water column chemistry and sediment analysis. Mike Zemaitis made a motion to approve the MBI contract amendment and the SL contract. Jim Bland seconded. The motion passed unanimously.
10. Action Item: Discuss MS4 Permit Requirements. Andrea gave an overview of the proposed MS4 monitoring program. The monitoring program is supposed to be designed and implemented by September 1, 2016. She took all sites for the parameters in the draft MS4 permit. She needs to review the match requirements with SMC, but it seems to work out.
11. New Business: There was no new business. Jim Bland had asked for the impairments to be listed on the DRWW website. It was discussed that we should add a data qualifier to that saying that the data is old, etc.
12. Next Monitoring Committee July 21st – 1:00PM
13. Adjourn: Mike Adam made a motion to adjourn, seconded by Jim Bland. The motion passed unanimously.

Committee Members Present:

Mike Adam, Lake County Health Department

Jim Bland, Sierra Club

Leslie Burns, Lake County Forest Preserve District

Austin McFarland, Lake County Public Works

Joe Robinson, North Shore Water Reclamation District

Steve Vella, Libertyville

Mike Zemaitis, LCDOT

Others Attendees:

Andrea Cline, Geosyntec

Brian Dorn, North Shore Water Reclamation District

Rob Flood, North Shore Water Reclamation District

Don Hey, Wetlands Initiative

Jeff Laramy, Lake County Stormwater Management Commission

Tom Morthorst, Third Lake

Kathy Paap, Wetlands Initiative

Mike Warner, Lake County Stormwater Management Commission



Des Plaines River Watershed Workgroup

Monitoring Committee

12/15/2016

1:00 -2:30 PM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

Agenda

1. Call the meeting to order
2. Roll Call
3. Approve Previous Meeting minutes
4. Public Comment
5. Monitoring Program Review and Update
6. Winter chloride data – are we getting enough? (No snow this November)
7. Burns & McDonald contract
8. Suburban Labs Contract - 7 additional Tier 3 sites
9. Staffing for data management for reporting to IEPA – Intern? In-house?
10. Old Business
11. Other Business
12. Next Monitoring Committee Meeting January 19 2017
13. Adjourn



Des Plaines River Watershed Workgroup

Monitoring Committee

12/15/2016

1:00PM – 2:30PM

Lake County Central Permit Facility

500 W. Winchester Road, Libertyville IL 60048

Meeting Minutes

1. Call the meeting to order: Joe Robinson called the meeting to order.
2. Roll Call (see end of these notes for individuals present)
3. Approve Previous Meeting minutes: Mike Adam made a motion to approve the minutes from 10/20, Al Giertych seconded the motion. The motion passed unanimously.
4. Public Comment: None.
5. Monitoring Program Review and Update: Beth Adler prepared a handout: DRWW Deliverables/Deadlines, which was handed out. Joe Robinson led the update. Most of this discussion will be tabled until our next meeting – we want to get all our tables up to date. We want to go back and look at last 2 years to see what we can scale back on and what we want to do going forward. For example, PCBs, if not detected, we would not continue to sample for them. The Suburban Labs (“SL”) contract runs through May, 2017. Joe would like to have their contract run May through March every year. MBI has completed all their sampling. Next year, how do we want to sample? 1/3, 1/3, 1/3? Chris Yoder wants to break it down into subwatersheds. There is a conference call scheduled with Chris Yoder for Jan 12 to discuss how to divide up the watershed into thirds and then 25 or so sampling locations within each of the thirds. The Tier system is not based on subwatersheds so we cannot use that system for biological sampling. It was agreed that a small sub-group of the monitoring committee would meet via conference call with Chris Yoder on 1/12 and then report to the full committee at the next meeting on 1/19.
6. Winter Chloride Data – Are We Getting Enough (no snow this November): Joe Robinson stated that we are currently sampling in Nov and March, which means we are not getting much info on chlorides. Do we want more conductivity and chloride data in the winter? We could collect from one USGS permanent location and one other. The group asked Clint Bailey of USGS to prepare a cost estimate to add continuous conductance and temperature data with monthly chloride samples taken to correlate the data. The proposal should also include a timeframe for installation of the continuous meters. Clint said he would get us a proposal before we meet with Chris Yoder on Jan 12. It was suggested that Chris Yoder be asked to get us his recommendations before the meeting on the 12th.
7. Burns and McDonnell (B&M) Contract Extension – Brian O’Neill, project manager for B&M attended the meeting to discuss the scope of the flow monitoring extension. Brian discussed a proposal to visit the 15 flow monitors 4 additional times (plus 2 visits from the original contract that were not completed) and compile 6 USGS gage station data and a final report (a final report was part of the original K, that deliverable will be moved to the K extension) for \$34,500. Clint Bailey of USGS suggested two protocol changes from the approved QAPP: 1) Obtaining

barometric pressure data from weather stations every 5 miles, as opposed to the current every 20 miles and; 2) installing a metal pipe at each of the 15 flow meter locations so water level is measured from the pipe (above the surface of the water) to the surface of the water, instead of from the bottom of the stream bed to the top of the water surface. This is a standard measurement protocol but was not in the QAPP. Clint said these 2 protocol changes would allow B&M to obtain their accuracy goal of 0.1 which is in the QAPP. Brian agreed these were good suggestions. Patty Werner stated that the Watershed Plan Group needs all data by Oct. 15, 2017 so it can be used in the Watershed Plan. Brian said he would get the DRWW a proposal by 1/5/17.

8. Suburban Labs (SL) Contract – 7 additional Tier 3 sites. Approval of a K change to add 7 additional sites was approved in June 2016, but the sites were not sampled by SL. Mike Adam suggested we direct SL to add these sites starting in March 2017. Mike Warner suggested that 1 DRWW monitoring committee member be assigned to co-manage each contractor with Beth Adler. He suggested Jim Bland co-manage B&M, Mike Adam co-manage SL, and Joe Robinson co-manage MBI. This was agreed upon by Jim, Mike and Joe.
9. Staffing for Data Management for Reporting to IEPA – Intern? In-house? Dan, the intern who did a good job with DRWW's data management last year was contacted and he is interested in helping us again in early 2017. Everyone agreed it would be good to hire an intern. A recommendation would be made at the Executive Board meeting to approve funding not to exceed \$2,000 to hire an intern.
10. Old Business: None
11. New Business: None
12. Next Monitoring Committee Meeting will be January 19, 2017.
13. Adjourn: Mike Adam made a motion to adjourn, seconded by Jim Bland. The motion passed unanimously.

Committee Members Present:

Mike Adam, Lake County Health Department
Jim Bland, Sierra Club
Al Giertych, LCDOT
Joe Robinson, North Shore Water Reclamation District
Leslie Berns, LCFPD
Steve Vella, Village of Libertyville

Others Attendees:

Beth Adler, DRWW Technical Coordinator
Don Hey, Wetlands Research Initiative
Kathy Paap, Wetlands Research Initiative
Jeff Laramy, Lake County Stormwater Management Commission
Mike Warner, Lake County Stormwater Management Commission
Patty Werner, Lake County Stormwater Management Commission
Brian O'Neil, Burns & McDonnell
Clint Bailey, USGS
Tom Morthorst, Village of Third Lake
Leonard Dane, Deuchler Environmental, Inc.
Rob Flood, North Shore WRD