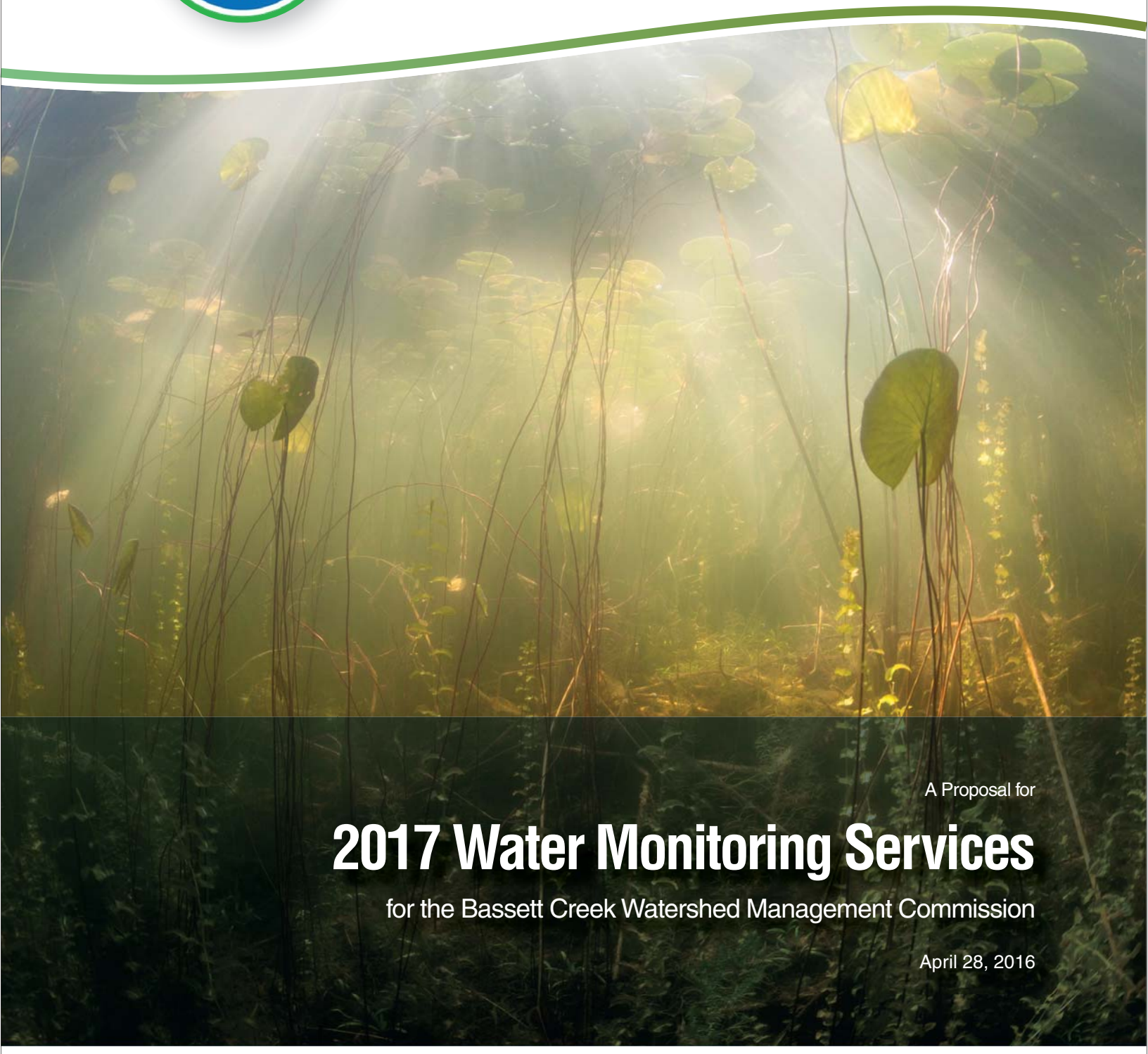

A Proposal for

2017 Water Monitoring Services

for the Bassett Creek Watershed Management Commission

April 28, 2016

Building a legacy – *your* legacy.

701 Xenia Avenue South
Suite 300
Minneapolis, MN 55416
Tel: 763-541-4800
Fax: 763-541-1700

April 28, 2016

Laura Jester
BCWMC Administrator
c/o 16145 Hillcrest Lane
Eden Prairie, MN 55346

Re: Proposal to Provide 2017 Water Monitoring Services

Dear Ms. Jester:

WSB & Associates, Inc. (WSB) is pleased to submit the following proposal for 2017 Water Monitoring Services. Our project team has the capability to provide the BCWMC with the services discussed in the RFP in a professional, timely, and cost-effective manner. We believe that our experience in performing an extensive and broad range of water monitoring and modeling particularly qualifies us for this project.

WSB has extensive experience with a number of similar projects in the Twin Cities area. These have included the Cities of St. Paul, Richfield and Robbinsdale, the Shell Rock River Watershed District, and the Minnehaha Creek Watershed District.

Our project team is very capable and experienced to meet the needs of this project. As Project Manager, Jake has extensive experience in leading teams through water resources projects, including monitoring studies. The remainder of the project team is made up of engineers and scientists with the expertise necessary to assist the BCWMC in a successful, well planned project.

In addition to our highly qualified team and experience, we believe the emphasis our firm places on the following concerns makes us ideally suited for 2017 Water Monitoring Services:

- **Innovative Approach to Problem Solving**
  WSB's project team of scientists and engineers consistently strives for innovative solutions to project development problems. We will work with the BCWMC to "think outside the box" in pursuing and developing new ideas to enhance our deliverables.

- **Approach to Responding to Our Clients' Needs**
  WSB is a locally-owned firm, dedicated to forming solid partnerships with Minnesota agencies in an effort to become an extension of government organization staff. Our relationship with other government organizations is one of trust, commitment, dedication, honesty, and integrity. As Project Manager, Jake will listen to and understand the needs and concerns of the BCWMC's staff and provide clear, concise communication. A large part of our business is comprised of "repeat" customers from our existing clients, because of our commitment to provide quality service.

- **Honesty and Integrity**
  WSB's team will always provide honest answers to the BCWMC based on our best professional judgment, even if the answers may not be popular. We work to provide our clients with long-term value, rather than a quick fix.

- **Competitive Rates**
  WSB has a very competitive fee schedule and can provide cost-effective, quality engineering and monitoring services in a timely manner.

WSB welcomes this opportunity to continue to work with the BCWMC. We look forward to your favorable consideration of WSB for the professional engineering and monitoring services for the BCWMC. WSB commits itself to deliver the BCWMC a quality of services that is consistent with your expectations and WSB's reputation. Please contact Jake at 763-231-4861 if you have any questions regarding this proposal.

Sincerely,

WSB & Associates, Inc.

Jacob Newhall, PE
Project Manager

Todd Hubmer, PE
Water Resources Group Manager

A Proposal for

2017 Water Monitoring Services

for the Bassett Creek Watershed Management Commission

April 28, 2016

Contact:

Jacob Newhall, PE
(763) 231-4861
jnewhall@wsbeng.com

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701 Xenia Avenue South, Suite 300
Minneapolis, MN 55416

Tel: (763) 541-4800 · Fax: (763) 541-1700
wsbeng.com

Firm Overview

Early in their careers, the founders of WSB recognized that outstanding results are born from outstanding cultures. Since 1995, WSB has remained dedicated to creating a culture of relationship building, forward thinking, and collaboration that enables technically-advanced, thoughtful, and creative engineering and design solutions that build a legacy – *your* legacy.

By inspiring each other to look beyond solutions for today, and capitalize on the opportunities of tomorrow, WSB has seen steady growth in staffing and professional service areas. The firm's investment in staff and client education supports the collaborative, knowledge-driven, and inspiring environment that delivers results.

In the last year, we have welcomed over 40 new staff members to the firm, each joining to support the evolving needs of our government, commercial, and energy clients. With this growth, WSB is able to support the innovation and technical excellence you would expect from a national firm, while maintaining the trusting and meaningful relationships found with a local firm.

Work Plan & Approach

Project 1 – Routine Lake Monitoring of Twin Lake, Sweeney Lake, and Lost Lake

Background and Objectives

For the year 2017, the BCWMC Monitoring Plan calls for regular monitoring of Twin Lake (Golden Valley), Sweeney Lake (Golden Valley, two sites in the lake), and Lost Lake (Plymouth). WSB will follow the procedures and criteria for Project 1 detailed in the BCWMC Monitoring Plan.

Assumptions

Data generated from Project 1 will be necessary for the completion of Project 2. WSB assumes that the BCWMC will provide the following in electronic format for all three lakes: lake bathymetry data, all available water quality and quantity data, and all plant survey data prior to project initiation (see Project 1 schedule). Monitoring equipment will be provided by WSB.

Scope of Work

Task 1.1: Sample Collection and Analysis
Field and laboratory work will follow the procedures detailed in Section A.1.1 of the BCWMC Monitoring Plan. Plankton analysis will follow the procedures detailed in Section A.1.2 of the BCWMC Monitoring Plan. WSB will work with Pace Analytical and Phyco Tech to complete the laboratory work. Phyco Tech will complete zooplankton and phytoplankton assessments. Pace Analytical will complete all other labratory work. The specific analytical methods described for ortho-phosphate, total phosphorus and Nitrate + Nitrite as N on Page MP-2 of the BCWMC 2015 monitoring cannot meet the required MDLs and MRLs through Pace Analytical. To meet the required limits we propose submitting for methods SM4500 P E for total and ortho phosphorus and EPA 300.0 for Nitrate + Nitrite as N. Both methods are certified through the state of Minnesota. Lab expenses assume methods to meet detection limits.

Task 1.2: Aquatic Plant Survey
Aquatic plant monitoring will follow the procedures detailed in Section A.1.3 of the BCWMC Monitoring Plan. The monitoring will occur in June and August for each of the three lakes.

Task 1.3: Data Submittal to State EQuIS Database
Upon receipt of the final data from the previous two tasks, WSB will review the data with BCWMC staff for quality and completeness prior to uploading the data to the EQuIS database.

Task 1.4: Final Reports
WSB will prepare a draft report for BCWMC review. After addressing the BCWMC's written comments, WSB will revise and submit a final report. Any responses from WSB to an outside reviewer's comments will be considered out of scope but could be billed on an hourly basis. WSB will provide two reports. The first report will be focused on the lay audience and present the results in a highly visual format. The second report will be a concise technical presentation and discussion of the data.

Task 1.5: Presentation of Results
WSB will present the results of the project to the BCWMC at a time to be determined (early 2018).

Project 1: Deliverables

- *Data set in electronic format which WSB will also upload to EQIS.*
- *Reports containing results and analysis of information collected in Tasks 1.1 and 1.2, as well as past relevant data for examination of trends.*
- *Presentation to BCWMC Board.*

Schedule

The monthly schedule for Tasks 1.1 and 1.2 follow the requirements in the BCWMC Monitoring Plan. The following table presents the anticipated schedule for Project 1:

TASK	2017									2018
	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
1.1										
1.2										
1.3										
1.4										
1.5										

Budget

The following table presents the anticipated budget for Project 1:

TASK	FIELD LABOR	EQUIPMENT RENTAL	LAB ANALYSES	DATA ANALYSES	REPORT GENERATION	BOARD PRESENTATION
1.1	$18,980	$2,400	$17,500			
1.2	$5,860	$450				
1.3				$1,000		
1.4				$12,800	$5,500	
1.5						$1,040
TOTAL	$24,840	$2,850	$17,500	$13,800	$5,500	$1,040
PROJECT 1 TOTAL COST:						$65,530

Project 2 – Sweeney Lake Aeration Study

Background and Objectives

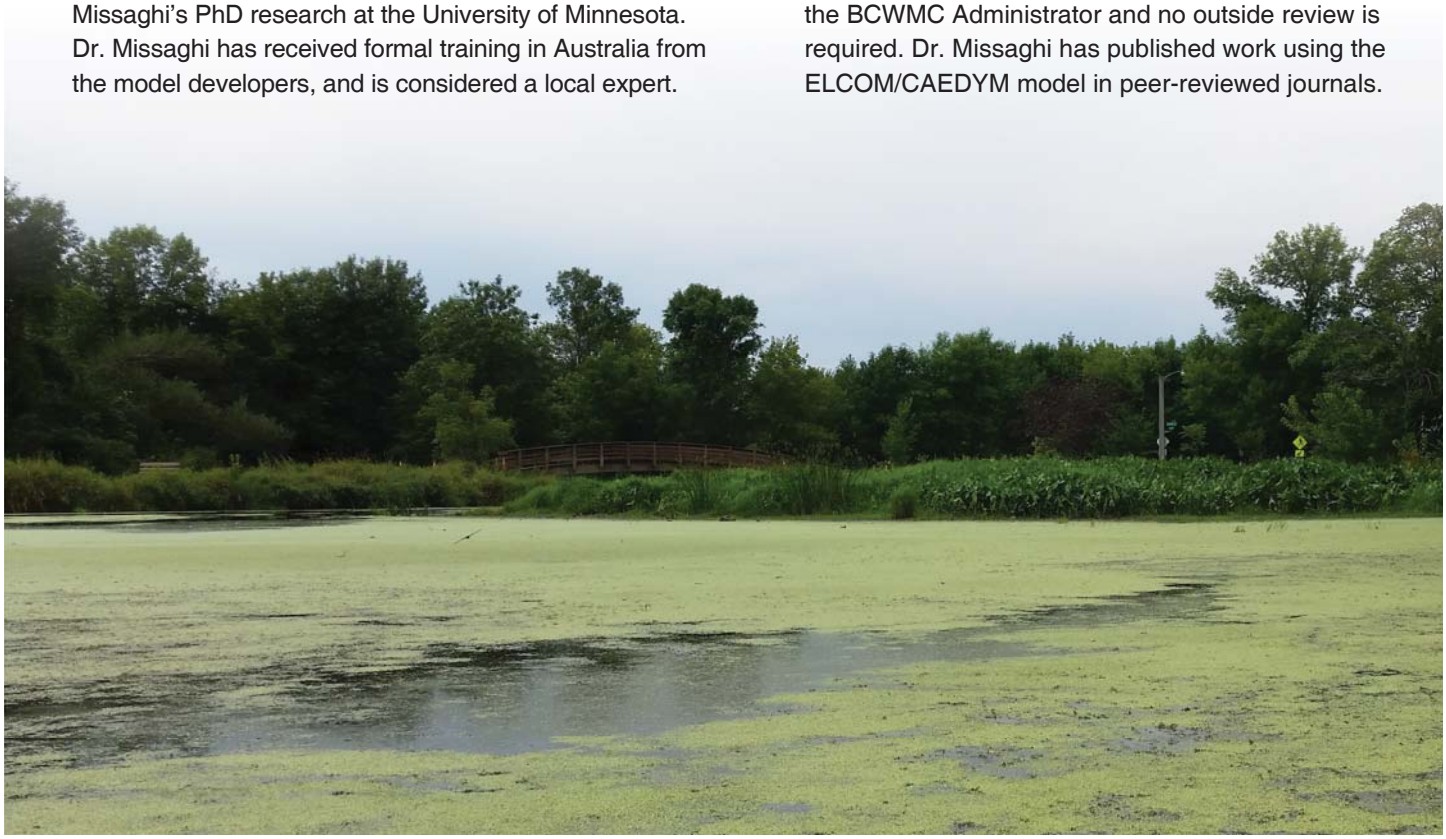
Surface water quality in Sweeney Lake is affected by the use of lake aeration devices, but confusing and often conflicting results have occurred. For example, in 2014 lake aerators resulted in complete thermal destratification of the lake, yet anoxia was evident in the deeper waters (2014 Lake Water Quality Study: Sweeney Lake and Twin Lake). Attempts to model lake behavior using a BATHTUB model and a finite difference lake model have not produced satisfactory results, and a more detailed lake model has been suggested (Sweeney Lake Total Phosphorus TMDL, 2011). The objective is to develop a more detailed model to be calibrated to aerated and non-aerated conditions. The model will then be used to evaluate in-lake scenarios to suggest the best management strategies for TMDL attainment.

Dr. Lorin Hatch and Dr. Shahram Missaghi will utilize the ELCOM/CAEDYM modeling suite for Project 2. They have used this model for Lake Minnetonka as part of Dr. Missaghi's PhD research at the University of Minnesota. Dr. Missaghi has received formal training in Australia from the model developers, and is considered a local expert.

Assumptions

Data generated from Project 1 and Project 3 will be necessary for completion of Project 2. WSB assumes that the BCWMC will provide the following in electronic format: Sweeney Lake bathymetry data, the Schaper Pond P8 model, the Sweeney Lake BATHTUB model, and all available Schaper Pond and Sweeney Lake water quality and quantity data. Given our recent success with modeling Lake Minnetonka with field data less comprehensive than has been collected for Sweeney Lake and Schaper Pond in the past, we do not anticipate additional field data needing to be collected beyond what is indicated in Projects 1 and 3. An exception to this is that a continuous sampling probe will be installed at the Schaper Pond outlet location to measure temperature, dissolved oxygen, pH, and conductivity. Data collected here will provide input data to the ELCOM/CAEDYM model.

WSB assumes that a final report will be delivered to the BCWMC Administrator and no outside review is required. Dr. Missaghi has published work using the ELCOM/CAEDYM model in peer-reviewed journals.



Scope of Work

Task 2.1: Acquire Data from BCWMC

The BCWMC will provide WSB with the electronic data listed in the Project 2 Assumptions section prior to project initiation (see Project 2 schedule).

Task 2.2: ELCOM/CAEDYM Model Set-Up

The model will be discretized into an appropriately-sized surface grid with a uniform 0.5 m depth layer resolution to create the 3D Cartesian mesh of computational cells required by ELCOM. Boundary conditions will be identified in the bathymetry file. The time step will initially be set to 120 seconds with output data recorded every four hours. Model output files will be monitored regularly to insure that the model time step (temporal) and grid sizes (spatial) are adequately selected.

Select data acquired in Task 2.1 will be used in this task, as well as data to be collected from other sources (meteorological data, precipitation, and solar radiation).

Task 2.3: Calibrate and Validate the Model

The model will be calibrated for the entire simulation period where model results are compared against field data. It is anticipated that the ELCOM portion of the model will require relatively little effort for calibration, but the CAEDYM portion of the model will require greater effort. The 2017 year (no aerators) and previous years where no aerators were used, as well as years when the aerators were operating, will be examined and an iterative approach to CAEDYM calibration will be taken.

Task 2.4: Run Scenarios

WSB will perform up to six scenarios using the calibrated model. A minimum of two scenarios will examine the potential impacts of aerators, while additional scenarios will be determined in consultation with the BCWMC.

Task 2.5: Final Reports

WSB will prepare two final reports for the BCWMC. The first report will be focused on the lay audience and will present the results in a highly visual format. The second report will be a concise technical presentation and discussion of the data. Any responses from WSB to an outside reviewer's comments will be considered out of scope but could be billed on an hourly basis.

Task 2.6: Presentation of Results

WSB will present the results of the project to the BCWMC at a time to be determined (early 2018). In addition, a public engagement meeting will be held to educate and inform the residents regarding the results of the study.

Project 2: Deliverables

- *Reports containing summary of model development and calibration, as well as results of scenarios that were examined.*
- *Presentation to BCWMC Board.*
- *Public engagement meeting*

Schedule

The following table presents the anticipated schedule for Project 2:

TASK							2018
	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
2.1							
2.2							
2.3							
2.4							
2.5							
2.6							

Budget

The following table presents the anticipated budget for Project 2:

TASK	FIELD LABOR	LAB ANALYSES	DATA ANALYSES	REPORT GENERATION	BOARD PRESENTATION
2.1			$200		
2.2			$9,600		
2.3			$4,640		
2.4			$9,280		
2.5				$5,200	
2.6					$1,040
TOTAL	$0	$0	$23,720	$5,200	$1,040
PROJECT 2 TOTAL COST:					$29,960

Project 3 – Schaper Pond Effectiveness Monitoring

Project Background and Objectives

In 2015 the BCWMC installed a floating baffle and curtain in Schaper Pond to direct inflows to the NW section of the pond in an attempt to capture more TSS and TP in the pond. This activity was the outcome of a 2012 feasibility study on the pond. The objective of Project 3 is to repeat the monitoring conducted during the 2012 feasibility study. This will consist of installing an autosampler, a level sensor, and an area velocity meter at each of the following three locations: southern inlet, northern inlet, and the outlet. Monitoring will take place from April/May to September 2017. WSB will work with Pace Analytical to complete the laboratory work for Project 3.

Assumptions

Data generated from Project 3 will be necessary for the completion of Project 2. WSB assumes that the BCWMC will provide the following in electronic format: the most recent Schaper Pond bathymetry data, the Schaper Pond P8 model, and all available Schaper Pond water quality and quantity data prior to project initiation (see Project 3 schedule). Monitoring equipment will be provided by WSB.

Scope of Work

Task 3.1: Install Monitoring Equipment

This task will consist of installing an autosampler, a level logger, and an area velocity meter at the three designated locations (two inlet and one outlet locations). Protective housing will be used, and the equipment will be inspected on a regular basis (between storm events) to ensure that it is functioning properly. Autosampler pacing (i.e. how many samples are collected at what frequency) will be determined in consultation with BCWMC staff. Samples collected by the autosamplers will be retrieved as soon as possible after storm events and delivered to the analytical laboratory.

Task 3.2: Collect and Analyze Water Quality Samples

The goal of Project 3 is to collect six simultaneous runoff events from all three autosamplers to essentially repeat the results of the feasibility study. Continuous flow will be measured at all three locations. Runoff event samples will be analyzed for TP, TDP, TSS, and VSS. Particle size analysis will take place on samples from two of the events, at each of the three locations. In addition, a water quality probe (temperature, dissolved oxygen, pH, and conductivity) will be used at the pond outlet to collect continuous data for use in the ELCOM/CAEDYM model in Project 2.

Task 3.3: Final Reports

WSB will prepare a draft report for BCWMC review. After addressing the BCWMC's written comments, WSB will revise and submit a final report. Any responses from WSB to an outside reviewer's comments will be considered out of scope and could be billed on an hourly basis. WSB will

provide two reports. The first report will be focused on the lay audience and present the results in a highly visual format. The second report will be a concise technical presentation and discussion of the data.

Task 3.4: Presentation of Results

WSB will present the results of the project to the BCWMC at a time to be determined (early 2018).

Project 3: Deliverables

- *Reports containing results and analysis of information collected in Task 3.2, as well as past relevant data for examination of changes.*
- *Presentation to BCWMC Board.*

Schedule

The following table presents the anticipated schedule for Project 3:

TASK	2017									2018
	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY
3.1										
3.2										
3.3										
3.4										

Budget

The following table presents the anticipated budget for Project 3:

TASK	FIELD LABOR	EQUIPMENT RENTAL	LAB ANALYSES	DATA ANALYSES	REPORT GENERATION	BOARD PRESENTATION
3.1	$4,700	$16,150				
3.2	$8,300		$2,400	$11,400		
3.3					$5,700	
3.4						$1,040
TOTAL	$13,000	$16,150	$2,400	$11,400	$5,700	$1,040
PROJECT 3 TOTAL COST:						$49,690

Other

Note that if WSB is awarded all of the projects, cost savings will be achieved. For example, the final reporting could be streamlined, and a single BCWMC Board meeting presentation could be performed.

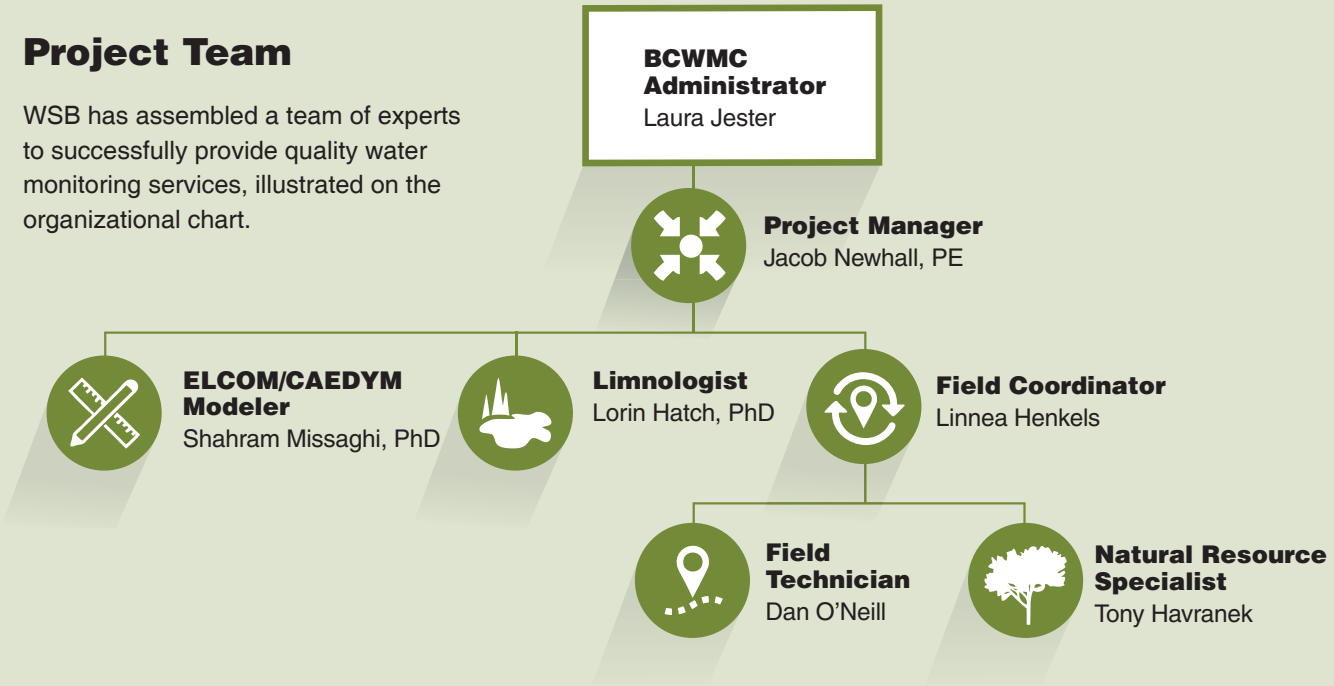
Total Project Costs

Task	Field Labor	Equipment Rental	Lab Analyses	Data Analyses	Report Generation	Board Presentation
Project 1 - Routine Lake Monitoring of Twin Lake, Sweeny Lake, and Lost Lake						
Task 1.1 Sample Collection and Analysis	$18,980	$2,400	$17,500			
Task 1.2 Aquatic Plant Survey	$5,860	$450				
Task 1.3 Data Submittal to EQuIS				$1,000		
Task 1.4 Final Report				$12,800	$5,500	
Task 1.5 BCWMC Board Presentation						$1,040
Project 1 Cost: $65,530						
Equipment rental includes the following: Boat use, YSI water quality meter, and water sampling equipment						
Project 2 - Sweeney Lake Aeration Study						
Task 2.1 Acquire Data from BCWMC				$200		
Task 2.2 ELCOM/CAEDYM Model Set Up				$9,600		
Task 2.3 Calibrate and Validate Model				$4,640		
Task 2.4 Run Scenarios				$9,280		
Task 2.5 Final Report					$5,200	
Task 2.6 BCWMC Board Presentation						$1,040
Project 2 Cost: $29,960						
Project 3 - Schaper Pond Effectiveness Monitoring						
Task 3.1 Monitoring Equipment Installation	$4,700	$16,150				
Task 3.2 Sample Collection and Analysis	$8,300		$2,400			
Task 3.3 Final Report				$11,400	$5,700	
Task 3.4 BCWMC Board Presentation						$1,040
Project 3 Cost: $49,690						
Equipment rental includes three sets of the following: area velocity meter, level logger and an automated water quality sampler (one set at each location)						
TOTAL PROJECT COSTS :						**$145,180**

Qualifications and Experience of Staff

Project Team

WSB has assembled a team of experts to successfully provide quality water monitoring services, illustrated on the organizational chart.



Jake Newhall, PE
Project Manager

Jake has ten years of engineering and project management experience and has completed many types of water resource projects, including design, modeling, planning, construction, and maintenance programs. He has worked with many municipalities, counties, and watersheds throughout Minnesota. Jake has been responsible for the development of numerous maintenance projects, water quality improvement projects, feasibility studies and other water resource planning activities. Jake's role on this project will be to serve as the Project Manager, responsible for coordinating directly with the Watershed and WSB staff on key project components. Jake will be responsible for the key deliverables, budget, schedule, and consistent communication with the project team.

Linnea Henkels
Field Coordinator

Linnea is an environmental scientist with four years of experience in water quality and BMP performance monitoring. Her experience includes operation and performance monitoring for a variety of BMP systems which include alum flocculation facilities, iron-enhanced treated ponds, stormwater infiltration galleries, and rain gardens. Linnea is proficient in work plan development and implementation, multimedia sampling, and analytical data management. Her strengths include sampling equipment programing and troubleshooting, laboratory data quality control, and field work coordination. As Field Coordinator, Linnea will be responsible for coordinating field and reporting duties.

Lorin Hatch, PhD
Limnologist

Lorin Hatch has a PhD in Ecology from the University of California-Davis and adjunct professor for University of Minnesota Water Resources Sciences in the Conservation Biology Graduate Programs. He has over 25 years of experience in water quality and aquatic ecosystem management. Trained in limnology, Lorin has worked primarily with sediment and chemical generation, transport, and fate in lakes, streams, watersheds, and estuaries on multiple spatial and temporal scales. He has extensive experience in project and team management, water-related permitting (e.g. NPDES, 316b), and statistical analysis. He has led the development of complex document and modeling deliverables, from the federal to the local scale.
Lorin was a co-advisor for Shahram Missaghi's PhD dissertation research.

Tony Havranek
Natural Resource Specialist

Tony has 15 years of water quality monitoring experience combined with seven years of interpreting water quality monitoring data to develop water quality assessment reports with respect to physical, chemical, and biological factors for a variety of audiences. Monitoring parameters included zooplankton, phytoplankton, lab grab samples (SRP, Total P, and Nitrogen series as well site specific labs), field measurements collected by a wide variety of sampling gear. Tony also implemented monitoring methodology to develop indices of biological integrity for macroinvertebrates and fisheries. Aquatic macrophytye survey experience includes implementation of point-intercept, transect, and bed mapping surveys in Minnesota and Wisconsin and completion of associated reports that included a discussion of SDI, C value comparison, and FQI. Tony will lead an analysis of existing water quality and biological parameters within BCWMC waterbodies.

Shahram Missaghi, PhD
ELCOM/CAEDYM Modeler

Shahram Missaghi holds a PhD in Civil Engineering from the University of Minnesota and is an extension associate professor. He conducts research in ecological modeling and climate change impacts on water resources. He previously evaluated and applied a 3D coupled hydrodynamic and ecological model to a morphologically complex lake and investigated the effects of a changing climate on coolwater fish habitat. The most recent research focused on quantifying the influence of fluid motion on spatial distribution and growth of *Microcystis* (blue-green algae) under controlled laboratory conditions. Shahram is currently, as part of a research team, investigating harmful algal blooms and working to develop predictive models, forecast and public alert, and state wide education, outreach, and training programs. Shahram also develops research-based water resources programs that promote innovative practices to manage and protect clean water. His ELCOM/CAEDYM research has been published in peer-reviewed journals (e.g. Ecological Modelling, Journal of Environmental Quality).

Dan O'Neill
Field Technician

Dan has conducted lake monitoring on metropolitan area lakes while employed by WSB, and participated in aquatic plant surveys while interning with the Department of Natural Resources. Dan is experienced in pond surveys and MS4 inspections. Dan will perform field work for the project, specifically on Projects 1 and 3.

Project Examples

BMP Performance Monitoring (St. Paul, MN)

For the past five years, WSB has assisted the City of Saint Paul with the development and implementation of a stormwater monitoring program. The program was developed to meet the City's Phase I MS4 monitoring requirements and to evaluate effectiveness of BMPs constructed throughout the City. More than 12 BMPs have been monitored over the years. The BMP types include underground infiltration galleries, rain gardens, iron-enhanced sand treated ponds, stormwater ponds, and pervious pavement. The data analysis includes evaluating flows, pollutant removal efficiency, and infiltration rates. Monitoring at sites for consecutive years has provided valuable information to City regarding BMP long-term effectiveness and design improvements for future projects.

Alum Flocculation Facility Performance Monitoring (Robbinsdale, MN)

For three years, WSB has completed operations and treatment effectiveness monitoring for the alum flocculation facility constructed to treat Crystal Lake. Project components include pre-treatment and post-treatment water quality and flow monitoring for NPDES/SDS and MCEC permit compliance. As part of the project Crystal Lake has been monitored for oxygen content, nutrients, secchi depth since 2010. The purpose of the water quality monitoring in Crystal Lake is to track long-term water quality trends and document the water quality benefit provided by the facility.

Stubbs Bay Improvement Project/Classen Wetland Restoration (Minnehaha Creek Watershed District)

Prior to joining WSB, Dr. Lorin Hatch served as the Project Manager and Water Quality Expert for this project. He analyzed water quality issues in this eutrophic bay of Lake Minnetonka and proposed wetland restoration and headwater lake controls to restore hydrology in the Classen Creek subwatershed. Part of project utilized University of Minnesota students for their senior capstone project.

Water Quantity/Quality Monitoring Program (Minnehaha Creek Watershed District)

Prior to joining WSB, Dr. Lorin Hatch served as Minnehaha Creek Watershed District (MCWD)'s Water Quality Specialist. While employed at MCWD, his work included developing and managing a water quantity/quality monitoring program for the MCWD. This program included nearly 50 stream sites and nearly 60 lake sites (including 27 locations on Lake Minnetonka). The program was brought in-house and included the purchase of nearly all necessary field equipment. The program also involved the supervision of two field technicians. Parameters monitored ranged from physical/chemical to biological (e.g. bacteria, phytoplankton, zooplankton). Dr. Hatch wrote the water quality monitoring manual for MCWD and oversaw MCWD's water quantity/quality modeling efforts (e.g., XP-SWMM, PLOAD, FLUX/PROFILE/BATHTUB, P8, WinSLAMM, ELCOM-CAEDYM).

Pelican Lake of St. Anna Clean Water Partnership Phase I Diagnostic Study (Stearns County Environmental Services)

The Pelican Lake Association was assisted by Dr. Lorin Hatch, prior to his time employed by WSB, in writing a CWP grant to monitor lake and stream water quality for two years. Dr. Hatch assisted with writing project reports, modeling, and providing technical advice.

Fountain Lake Plant Survey (Shell Rock River Watershed District)

WSB has completed a variety of aquatic vegetation surveys across areas from Northern Wisconsin to Southern Minnesota. Survey types include point-intercept, transect, stem density, and bed mapping to track density and distribution of native and invasive species and understand the ecological response of management activities carried out by WSB clients. Our staff has also worked with natural resource management agencies, federal and state, to develop alternate survey methodology to capture specific data that allows to develop baselines or track changes in the aquatic vegetation community. BCWMC methodology employs the point intercept plant survey method, which we have formal training with and over nine years of experience. We employed this methodology for the Fountain Lake Plant Survey Project completed in August 2014 for the Shell Rock River Watershed District near Albert Lea, Minnesota. This survey was completed to develop a baseline o-f the aquatic macrophyte community that provided watershed district staff and regulatory agencies an understanding of the spatial distribution, diversity, and density within the plant community of Fountain Lake. A narrative report was provided to the watershed district which included spreadsheet data, graphical representations, and maps to communicate our findings and provide clarity in survey methodology to allow for easy replication of the survey and data comparison to future surveys.

Below are selected examples of previous project reports that we have put together for one of our clients, the Shell Rock River Watershed District.

Clean Water Report

http://www.wsbeng.com/userfiles/ckfiles/files/SRWD%202286-13%20Clean%20Water%20Report%202014.pdf

Fountain Lake Report

http://www.wsbeng.com/userfiles/ckfiles/files/Fountain%20Lake%20Report.pdf