

AGENDA
MUNICIPAL COUNCIL
Bridgewater, NS
Tuesday, March 26, 2019 – 9:00 a.m.

Time & Page

1. CALL TO ORDER
2. ANNOUNCEMENTS, ACKNOWLEDGEMENTS, RECOGNITION
3. PUBLIC INPUT (15 Minutes)
4. APPROVAL OF AGENDA
5. APPROVAL OF MINUTES – Council, 2 Public Hearing, and Special Council meetings - March 12, 2019
6. BUSINESS ARISING FROM MINUTES - Nil
7. AWARDING OF TENDERS/RFPs - Nil
8. PRESENTATIONS/SCHEDULED TIMES
 - 8.1 Lunenburg County Seniors' Safety Program.....9:15 a.m.1-8
 - 8.2 Sherbrooke Lake Stewardship Committee Update & Report..... 10:15 a.m. 9-57
9. CONSIDERATION OF CORRESPONDENCE - Nil
10. RECOMMENDATIONS FROM COMMITTEES & BOARDS
 - 10.1 Policy & Strategy Committee
 - 10.1.1 Public Participation Strategy (58) 59-72
 - 10.1.2 Sponsorship Ad – 7th Annual Burg Classic (58) 73-79
 - 10.1.3 Lunenburg County Lifestyle Centre Strategic Priorities (58) 80-83
 - 10.1.4 LCMCCB Request for Proposal (58) 84-87
 - 10.2 Fire & Emergency Services Committee
 - 10.2.1 Group Personnel Insurance Project Plan 88
 - 10.3 Pension Committee
 - 10.3.1 DB Pension Plan PSSP.....10:45 a.m. 89-90
11. STAFF REPORTS - Nil
12. MAYOR'S/DEPUTY MAYOR'S/COUNCILLORS' MATTERS
 - 12.1 Deputy Mayor's Update
 - 12.2 Mayor's Update
13. ADDED ITEMS
14. IN CAMERA
 - 14.1 Contract Negotiations re HR Shared Services under Section 22(2)(e) of the MGA
 - 14.2 Contract Negotiations re Internet Agreement under Section 22(2)(e) of the MGA
15. ADJOURNMENT

Lunenburg County Seniors' Safety Program

A project of Safe Communities
Lunenburg County



Lunenburg County Seniors' Safety Program



Lunenburg County Population:

**Roughly 44% is
55 years+**

*Information gathered from
Statistics Canada 2016 Census

MoDL Population:

**Roughly 41% is
55 years+**

*Information gathered from the
2014 MoDL Community Economic Profile

Lunenburg County Seniors' Safety Program

- **NFP community based program**
 - **Voluntary participation**
 - **No charge for service**
- **Close affiliation with RCMP & BPS**
 - **Community partnerships**

Lunenburg County Seniors' Safety Program

What do we do?

- **1-1 education, support and referrals**
- **Community education / presentations**
- **Networking with community partners**
- **Advocate on behalf of Seniors**
- **Shared response with police to client needs as appropriate**

Lunenburg County Seniors' Safety Program

Reasons for referrals,

- Elder abuse
- Isolation and loneliness
- Food insecurity
- Lack of transportation
- Home insecurity
- Hoarding
- Mental health & wellbeing
- Lack of supports
- And more...



Lunenburg County Seniors' Safety Program

Referral: Hoarding Situation / MH & Wellbeing

- Contact with Senior
- Program & consent
- Safety plan created
- Many supporting agencies involved
- Utilities reconnected
- Clean up initiated
- Smoke detectors installed
- Priority access to housing
- The big move...
- Establish new connections & support

LCSSP Funding Partnerships

Provincial Contributors:

NS Dept. of Seniors

Municipal Contributors:

District of Chester

District of Lunenburg

Town of Mahone Bay

Town of Lunenburg

Town of Bridgewater(cash & in-kind)

Community Contributors:

United Way

Lunenburg County Seniors' Safety Program



Thank you for your support!

LCSSP

902-543-3567

Sherbrooke Lake

2018 Water Quality Monitoring Report

Prepared for
Municipality of Chester
Municipality of the District of Lunenburg
Sherbrooke Lake Stewardship Committee

By
Bluenose Coastal Action Foundation
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December 2018



Table of Contents

1. Introduction	6
1.1. Sherbrooke Lake Background	6
1.2. Program Background	7
1.3. Objectives and Scope of Work	10
2. Water Quality Monitoring Results	10
2.1. Physical Water Parameters.....	10
2.1.1. Surface Water Temperature	10
2.1.2. Surface Dissolved Oxygen	12
2.1.3. Depth Profiles.....	13
2.1.4. pH	16
2.1.5. Total Dissolved Solids.....	18
2.2. Chemical Water Parameters	20
2.2.1. Total Suspended Solids	20
2.2.2. Total Phosphorus	22
2.2.3. Total Nitrogen	25
2.2.4. Hydrocarbons.....	27
2.2.5. Chlorophyll <i>a</i>	27
2.2.6. Fecal Coliform Bacteria	28
2.3. Sediment Sampling	30
3. Discussion.....	33
3.1. Trophic State of Sherbrooke Lake	33
3.2. Algal Blooms.....	35
3.3. Pollution	35
4. Recommendations	36
5. References	37

List of Figures

Figure 1: Left - Streams (yellow) and drainage boundary (red) of Sherbrooke Lake. Right – Bathymetry of Sherbrooke Lake and proposed public access site (red circle).	6
Figure 2: Sherbrooke Lake 2018 Water Quality Monitoring Program sampling locations.	8
Figure 3: Water temperatures at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.	11
Figure 4: Water temperatures at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	11
Figure 5: DO at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.	12
Figure 6: DO at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	13
Figure 7: Water temperature depth profile from two lakes during the August 2018 sampling of SL.	14
Figure 8: DO depth profile from two lake sites during the August 2018 sampling of SL.	15
Figure 9: Four common water temperature and DO depth profiles, from Hutchinson, 1957.	15
Figure 10: pH at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.	17
Figure 11: pH at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	17
Figure 12: TDS at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.	19
Figure 13: TDS at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	19
Figure 14: TSS at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season.	21
Figure 15: TSS at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	21
Figure 16: Total phosphorus at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season.	23
Figure 17: Total phosphorus at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	23

Figure 18: Total nitrogen at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season.	25
Figure 19: Total nitrogen at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	26
Figure 20: Chlorophyll a at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.	28
Figure 21: Fecal coliform at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season.	29
Figure 22: Fecal coliform at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).	30
Figure 23: Carlson TSI for lakes, with TSI ranks for SL Lake 1 (red star) and Lake 2 (blue star). Transparency determined using Secchi disk depth. From Carlson (1977).	34

List of Tables

Table 1: Monitoring program parameters, site locations, and sampling frequencies for the 2018 Sherbrooke Lake Water Quality Monitoring Program. New coordinates to access river sites via road are in blue.	9
Table 2: Mean and maximum TDS concentrations from lake and river sites during the 2018 SL field season.	18
Table 3: Range in total phosphorus concentrations between 2017 and 2018; July-August for lake samples, August for river samples.	24
Table 4: Total phosphorus concentrations from two lake sites, obtained both at the surface and below the thermocline, in August for the SL 2018 Water Quality Monitoring Program.	24
Table 5: Range in total nitrogen concentrations between 2017 and 2018; July-August for lake samples, August for river samples.	26
Table 6: Total nitrogen concentrations from two lake sites, obtained both at the surface and below the thermocline, in August for the SL 2018 Water Quality Monitoring Program.	27
Table 7: Concentration of metals within site sediment samples sampled on August 27 th , 2018. Interim sediment quality guideline (ISQG) is the recommendation by CCME of total concentrations of chemicals in surficial sediment, while the probable effect level (PEL) is the CCME upper value in which adverse effects are expected (CCME, 2001). Nova Scotia environmental quality standards (NSEQS) are sediment guidelines specifically set by the Nova Scotia Environment (NSE, 2014). Light yellow indicates parameters approaching one of the guidelines, while dark yellow indicates an exceedance of one of the guidelines.	32
Table 8: Comparison of 2018 sediment metal concentrations from SL Lake 2, Lake 3, and Forties River to the range and mean metal concentrations from four Kejimikujik Lakes (Hilchemakaar, Big Dam East, Cobrielle, and Peskowesk) monitored from 2000-2009 (Kirk, 2018).	33
Table 9: Phosphorus concentrations in sediment samples from lake and river sites sampled on August 27 th , 2018.	33
Table 10: Carlson (1977) 2018 SL TSI scores and trophic states for total phosphorus, chlorophyll A, and Secchi disk for Lake 1 (red) and Lake 2 (blue).	34

1. Introduction

1.1. Sherbrooke Lake Background

Sherbrooke Lake (SL) is located in the headwaters of the LaHave River watershed, in Southern Nova Scotia. Sherbrooke Lake covers 16.94 km² – the largest waterbody within the LaHave watershed – and has a 285 km² drainage basin (Figure 1). Although SL is fed by 14 inlet streams, many are less than 1 km in length. Sherbrooke River is the largest inlet stream feeding SL, while North Branch is the only outlet stream of the lake - located on the South-Southwest side of the lake.

The water quality of the LaHave River watershed has been monitored by Coastal Action since 2007. The program monitors 15 sites throughout the watershed, including the Sherbrooke River which feeds the lake, and the lake's outlet downstream. A water quality index (WQI) report card of the status of the watershed and the individual sites is reported annually and available at the Coastal Action website (<http://coastalaction.org/Wordpress/>).

Forestry, silviculture, and agriculture dominate the LaHave River watershed and SL sub-watershed. Rural communities are also located throughout, with cottages and camps found along the edge of SL.

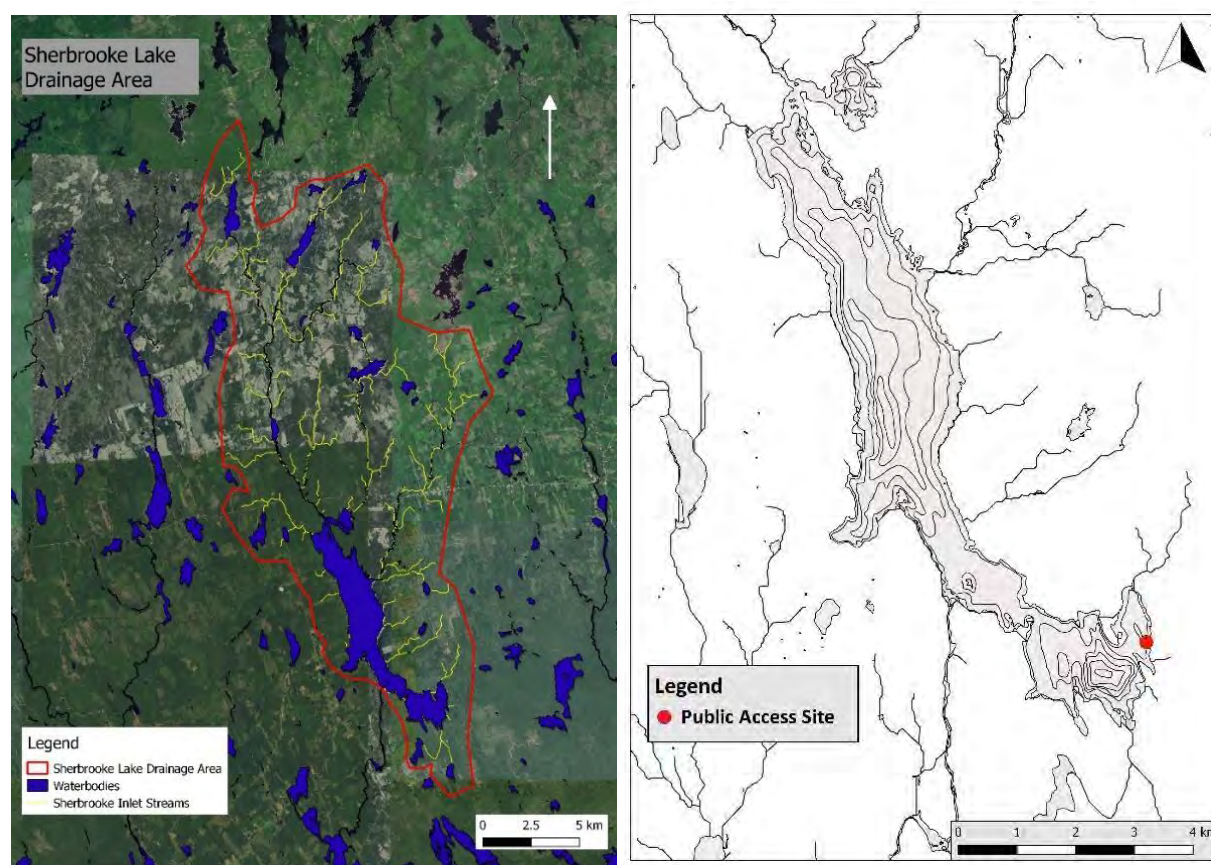


Figure 1: Left - Streams (yellow) and drainage boundary (red) of Sherbrooke Lake. Right – Bathymetry of Sherbrooke Lake and proposed public access site (red circle).

In 2015, the Municipality of the District of Lunenburg (MODL) began investigating ways to allow public access to the lake by appointing the Sherbrooke Lake Access Advisory Committee (SLAAC). SLAAC was to present options for accessing SL, and to obtain community advice and input throughout the process. After public consultations, held by UPLAND Planning + Design, a section of land on the South-Eastern side of the lake was determined to be the public access site (Figure 1). In the report provided to SLAAC by UPLAND Planning + Design, the implementation of a water quality committee for Sherbrooke Lake was recommended.

1.2. Program Background

As a result of the planned public access site at SL, the Sherbrooke Lake Stewardship Committee (SLSC) was formed. The SLSC, a joint commitment between MODL and the Municipality of Chester (MOC), is comprised of one Bluenose Coastal Action Foundation (Coastal Action) staff, two residents of MODL, two residents of MOC, a water quality expert, and supporting municipal staff. The SLSC was tasked with developing and implementing a water quality monitoring program to: determine a baseline understanding of water quality conditions within Sherbrooke Lake prior to construction of the public access site, monitor water quality during and after the construction, and provide evidence-based advice to MODL and MOC regarding ways to address water quality changes and concerns within the lake.

Although a preliminary monitoring program was implemented in 2017, the full Sherbrooke Lake Water Quality Monitoring Program began in May 2018. The 2018 monitoring program consisted of three lake sites monitored for various chemicals monthly from May to October, two additional lake sites monitored during the summer months for chlorophyll *a*, four streams monitored bimonthly from May to October, seven streams monitored once after a rainfall event (>20 mm rainfall within 24 hours), two lake sites and one stream site where one-time sediment samples were obtained for analyses, and two lake sites where one-time lake profiles and nutrients at-depth were obtained for analyses (Figure 2, Table 1). The 2018 monitoring program incorporated trained volunteers to collect the water and sediment samples throughout the field season, while Coastal Action coordinated the sampling and analyzed the data (for full methodology please refer to the *Sherbrooke Lake Water Quality Monitoring Program* available upon request from either the Municipality of Chester or the Municipality of the District of Lunenburg).

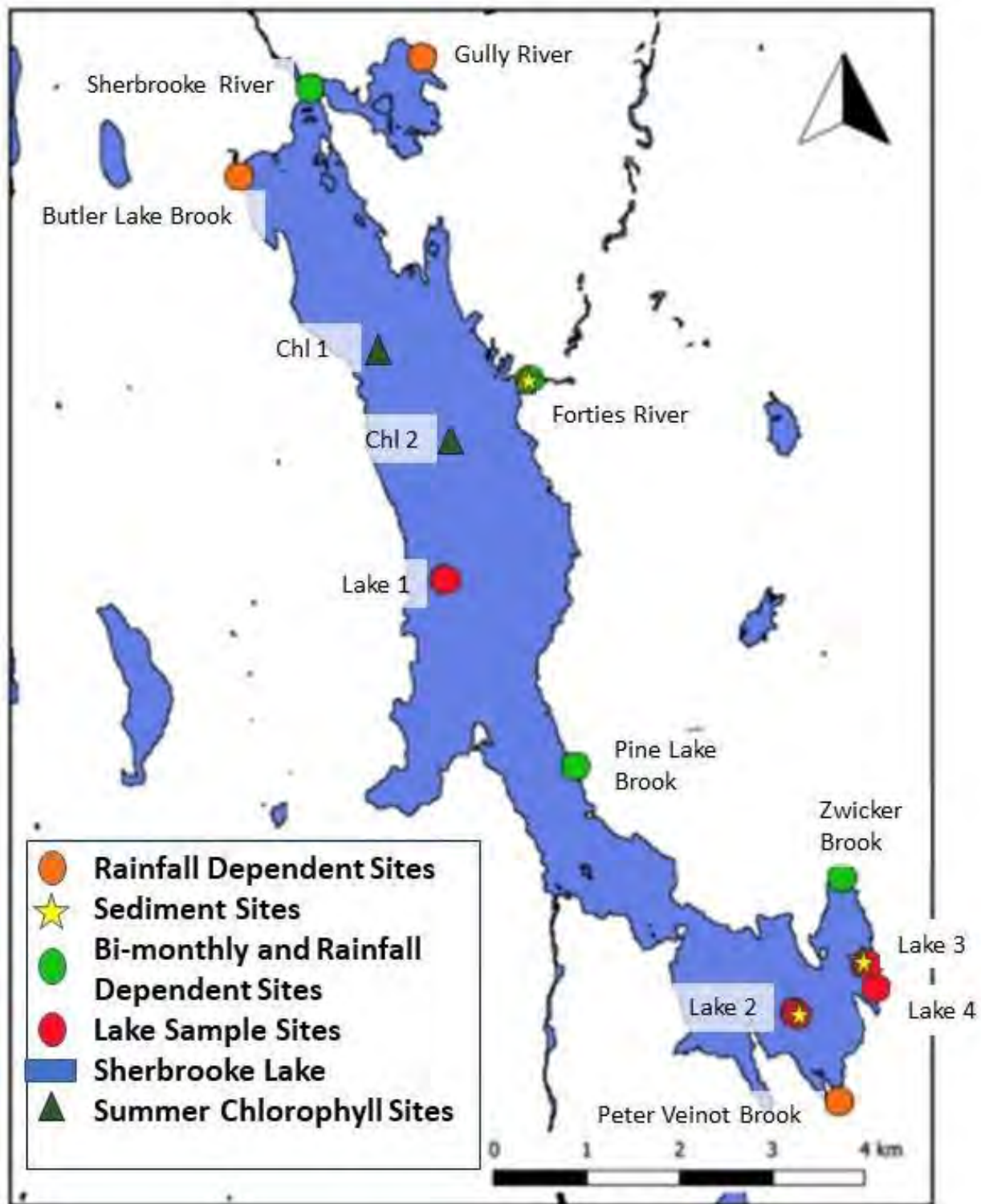


Figure 2: Sherbrooke Lake 2018 Water Quality Monitoring Program sampling locations.

Table 1: Monitoring program parameters, site locations, and sampling frequencies for the 2018 Sherbrooke Lake Water Quality Monitoring Program. New coordinates to access river sites via road are in blue.

Sample Site Name	Site Coordinates (UTM Zone 20T)	Sampling Frequency	Parameters Sampled
Lake 1	372287 E, 4947688 N	Monthly (May-Oct.)	YSI ⁺ , hydrocarbons, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> , Secchi disk depth. One-time depth profile.
Lake 2	376072 E, 4943018 N	Monthly (May-Oct.)	YSI, hydrocarbons, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> , Secchi disk depth. One-time dept profile and sediment grab.
Lake 3 (Public Access)	376831 E, 4943540 N	Monthly (May-Oct.)	YSI, hydrocarbons, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> , Secchi disk depth. One-time sediment grab.
Lake 4* (Public Access Boat Launch)	376844 E, 4943371 N	Monthly (Sept – Oct.)	YSI, hydrocarbons, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .
Chl 1	371682 E, 4949984 N	Monthly (June-Aug.)	YSI, chlorophyll <i>a</i> , Secchi disk depth.
Chl 2	372466 E, 4949027 N	Monthly (June-Aug.)	YSI, chlorophyll <i>a</i> , Secchi disk depth.
Butler Lake Brook	370079 E, 4952036 N	One-time, rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .
Sherbrooke River	370845 E, 4952984 N 369774 E, 4954072 N	Bi-monthly (May, July, Sept.) & rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .
Gully River	372050 E, 4953315 N 372246 E, 4953404 N	One-time, rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .
Forties River	373210 E, 4949840 N 373539 E, 4949823 N	Bi-monthly (May, July, Sept.) & rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> . One-time sediment grab.
Pine Lake Brook	373705 E, 4945670 N	Bi-monthly (May, July, Sept.) & rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .
Zwicker Brook	376582 E, 4944469 N	Bi-monthly (May, July, Sept.) & rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .
Peter Veinot Brook	376552 E, 4942058 N 376507 E, 4941558 N	One-time, rainfall-dependent	YSI, total suspended solids, total phosphorus, total nitrogen, fecal coliform, chlorophyll <i>a</i> .

⁺YSI is a multi-parameter water quality device that measures the physical characteristics (temperature, dissolved oxygen, pH, total dissolved solids, salinity, pressure, and specific conductivity) of the water at the time of sampling.

*Lake 4 site added in September 2018 after a Sherbrooke Park Design Meeting to obtain water quality specifically at the lake site near the planned boat launch.

1.3. Objectives and Scope of Work

The objective of this program is to provide a water quality overview for Sherbrooke Lake, which can help the SLSC provide evidence-based advice to both MODL and MOC. Within the SLSC, Coastal Action's scope of work included:

- Designing and writing the Sherbrooke Lake 2018 Water Quality Monitoring Program
- Ordering and ensuring correct bottles from Maxxam Analytics
- Creating and printing waterproof field sheets for each sampling month
- Implementing two days of volunteer training
- Calibrating and caring for the MODL-MOC YSI monthly
- Ensuring volunteers obtained all required field equipment for field work
- Transferring data from field sheets and Maxxam into a database and analyzing data
- Attending SLSC meetings and presenting water quality results
- Preparing this report to summarize results and recommendations for water quality related to Sherbrooke Lake

2. Water Quality Monitoring Results

2.1. Physical Water Parameters

2.1.1. Surface Water Temperature

Water temperature is a key parameter in understanding and assessing the health and productivity of an aquatic environment, as it directly impacts organisms, while also affecting other physical and chemical parameters. Water temperature can impact the presence and survival of fish, where temperatures outside of a species' optimal range can negatively affect fish survival (NSSA, 2014); 20°C is the maximum acceptable temperature for salmon and trout (Alabaster and Lloyd, 1982). In addition, increased water temperature decreases a waterbody's capacity to hold oxygen, thereby limiting available oxygen to aquatic organisms.

In the lake sites, temperatures ranged from 10.2-26.7°C, while streams ranged from 13-26.5°C (Figures 3 and 4). The lake sites exceeded 20°C between June to August 2018, while the stream sites exceeded 20°C in July and August 2018. In the lake, surface temperatures exceeding 20°C will not greatly affect organisms, as aquatic life can take refuge in the cooler deep waters below; however, this is not the case for streams. The highest water temperatures were recorded at Sherbrooke River and Forties River. The lower temperatures observed at Pine Lake Brook and Zwicker Brook may be due to higher percentage of shade covering the waters (from tree canopies) due to smaller stream widths (compared to Sherbrooke and Forties). Pine Lake Brook and Zwicker Brook exceeded that 20°C threshold only once (by 0.1°C in July 2018) – these streams appear to provide a suitable habitat for aquatic organisms year-round.

Following the one-time rainfall sampling event, 5/7 streams were below 20°C, with only Sherbrooke and Forties exceeding the threshold.

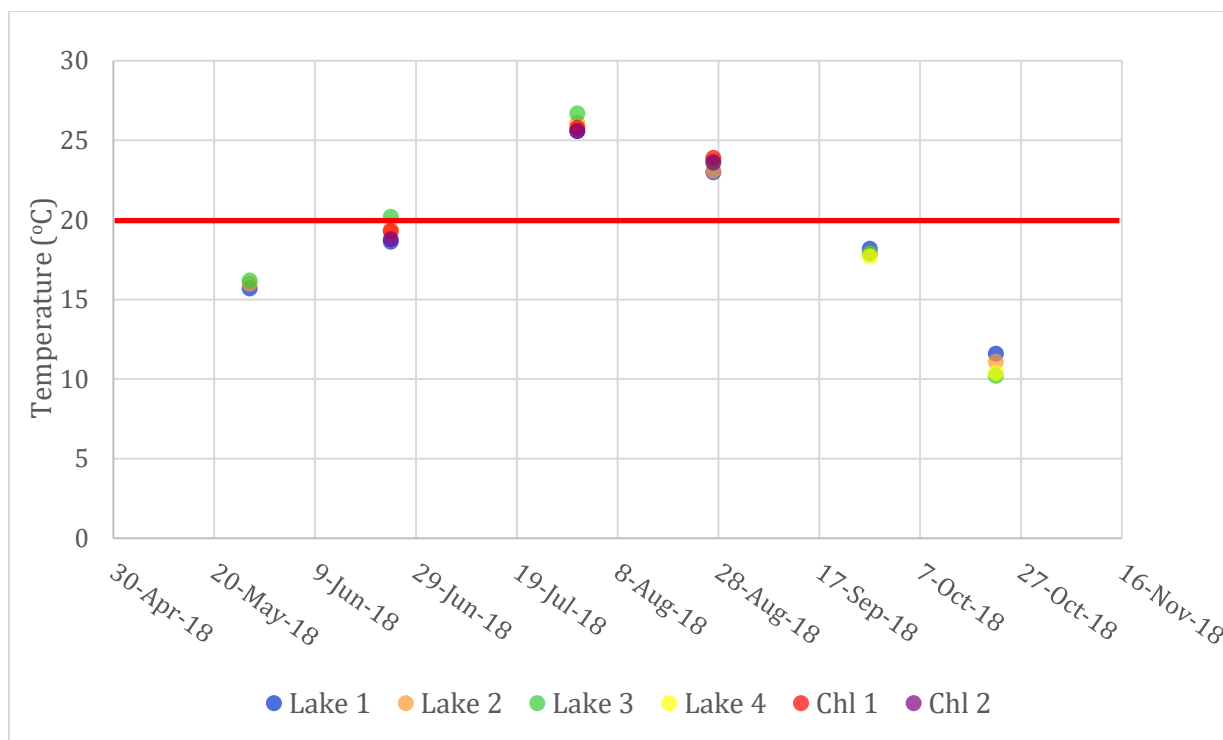


Figure 3: Water temperatures at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season. Red line indicates the 20°C limit for survival of aquatic organisms.

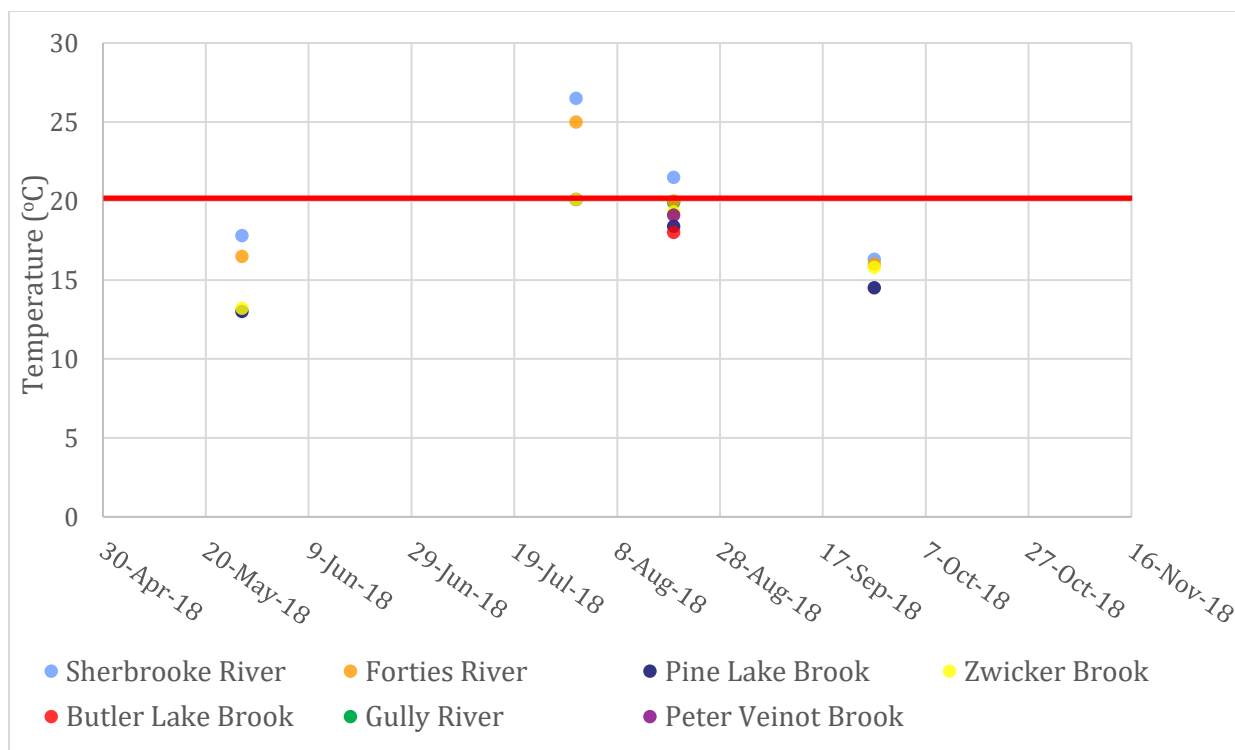


Figure 4: Water temperatures at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook). Red line indicates the 20°C limit for survival of aquatic organisms.

2.1.2. Surface Dissolved Oxygen

Dissolved oxygen (DO) is another key physical water parameter, as it is required for the survival of aquatic organisms and affects how nutrients are cycled and released within lake waterbodies. The Canadian Council of Ministers of the Environment (CCME) set a guideline at ≥ 6.5 mg/L for the protection of aquatic life for cold water species – species found in lakes such as Sherbrooke (CCME, 1999). DO not only affects aquatic organisms, but also is controlled by organisms (due to consumption), water temperature, and the waterbody's ability to mix and engulf DO (wind and waves increase dissolved oxygen into the water).

Of the lake and stream sites, only one stream site had DO below 6.5 mg/L throughout the 2018 field season (Figures 5 and 6). The six lake sites monitored in SL were always >7 mg/L, even as DO decreased during summer months due to biological demand. The high DO concentrations may be attributed to the sampling depths for these monthly and bimonthly samples, as only surface water was monitored and therefore influenced by the DO engulfment via winds and waves. The seven stream sites also appear to be well oxygenated and suitable for aquatic life – even the Peter Veinot Brook measurement below 6.5 mg/L was only 0.09 mg/L below the threshold.

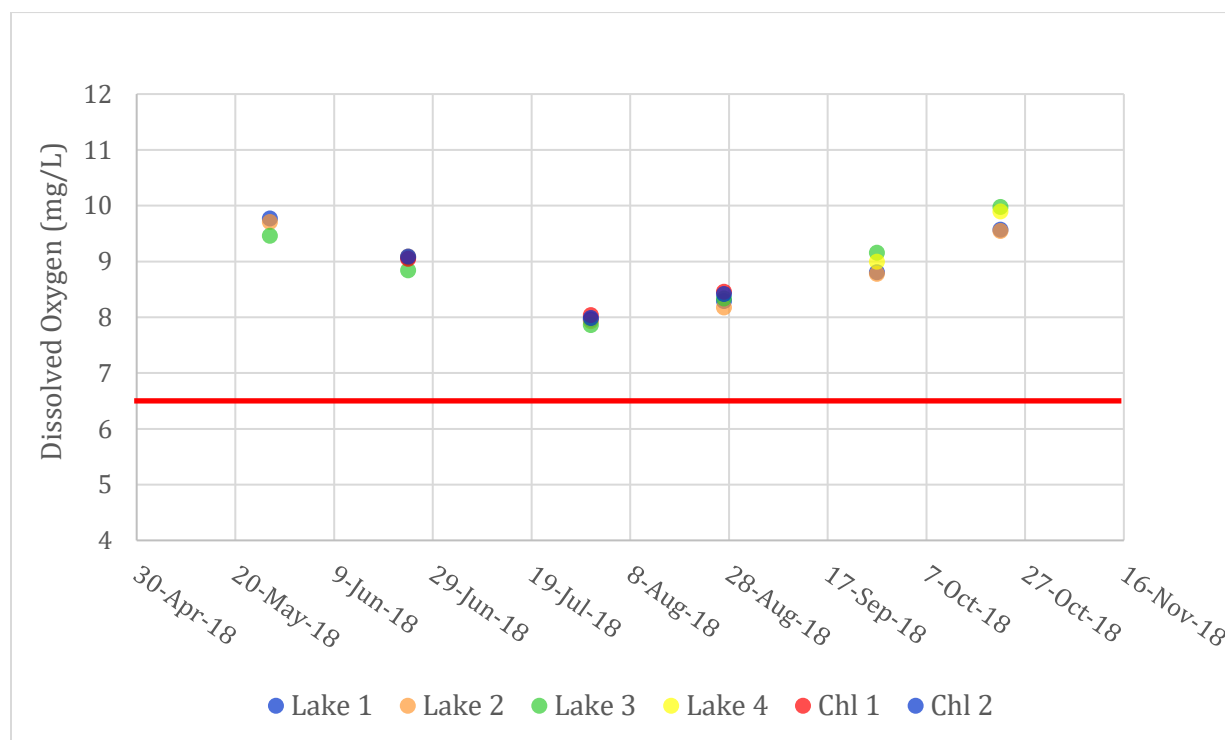


Figure 5: DO at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season. Red line indicates CCME's 6.5 mg/L DO minimum-threshold for survival of aquatic organisms.

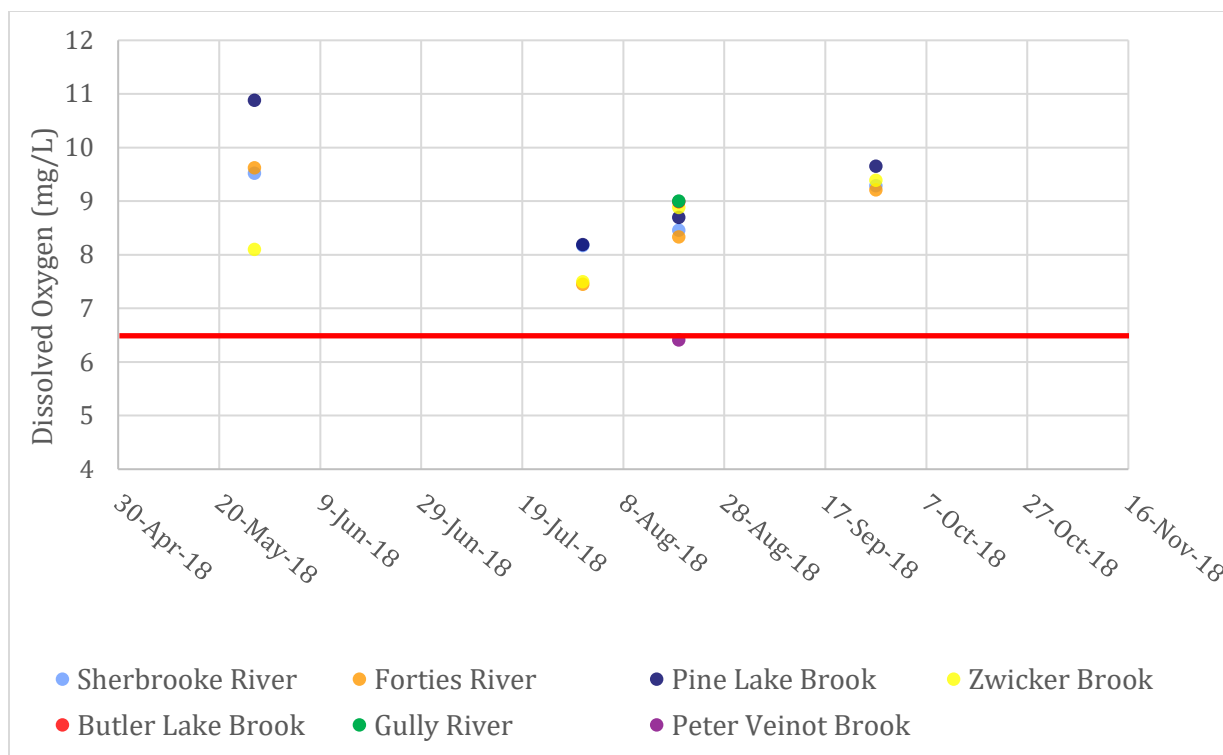


Figure 6: DO at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook). Red line indicates CCME's 6.5 mg/L DO minimum-threshold for survival of aquatic organisms.

2.1.3. Depth Profiles

2.1.3.1. At-Depth Water Temperature

The water profile at lake sites 1 and 2 in August 2018 indicate that both sites have a thermal stratification – Lake 2 having a stronger stratification than Lake 1 (Figure 7). Stratification begins at a shallower depth (5 m) for Lake 2 than Lake 1 (8 m). Lake 2's thermocline is 8 m thick, separating the >20°C surface waters from the <10°C deep waters. Lake 1's thermocline is only 2 m thick, with ~5°C separation between surface and deep waters. The presence of a thermocline at both lake sites indicates that the nutrient-rich, cold deep waters are not mixing with the nutrient-limited, warm surface waters during the summer months; mixing and redistribution of nutrients within the lake is therefore only occurring during spring and fall turnover, when water temperature is uniform at all depths and no density-differences inhibit mixing.

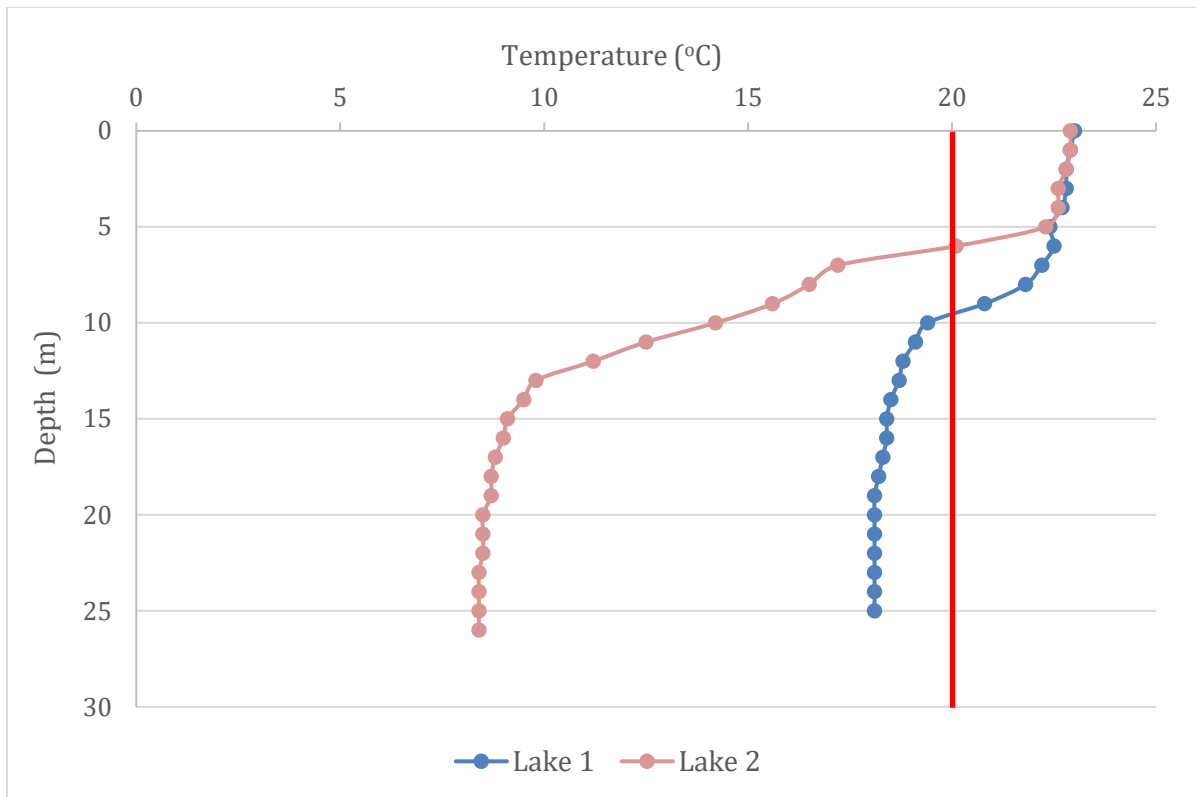


Figure 7: Water temperature depth profile from two lakes during the August 2018 sampling of SL. Red line indicates the 20°C limit for survival of aquatic organisms.

2.1.3.2. At-Depth Dissolved Oxygen

In addition to the thermocline that is present in the lake sites' depth profiles, DO is also stratified at the two sites (Figure 8). Of the four common DO profiles in lakes (Figure 9), Lake 1 presents a clinograde curve, where DO is highest in the surface waters and lowest in the deep waters. Clinograde curves often occur in mesotrophic and eutrophic lakes, where microbial decomposition uses and depletes the lake's DO. Lake 2 appears to have a negative heterograde curve. Negative heterograde curves have a distinct reduction in DO at depth – this may be due to increased organic matter trapped within the thermocline, acting as a source of food for microbes and increasing DO depletion from microbial decomposition. DO increases past the decomposition depth due to the lack of food encouraging microbial decomposition. There is a drop of DO at the base of the lake in Lake 2 - this may be due to increased microbial presence – again due to increased nutrients available (decaying organisms and litter would sink to the sediment, acting as a food source of microbes).

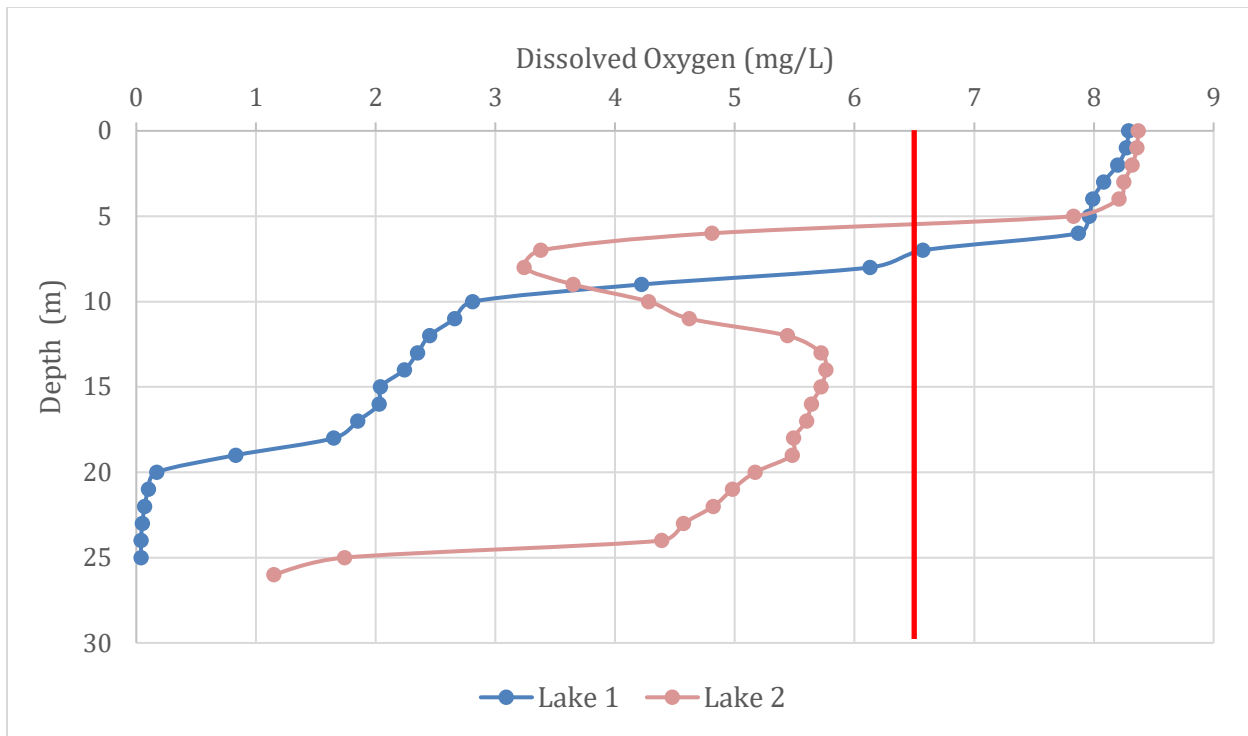


Figure 8: DO depth profile from two lake sites during the August 2018 sampling of SL. Red line indicates CCME's 6.5 mg/L DO minimum-threshold for survival of aquatic organisms.

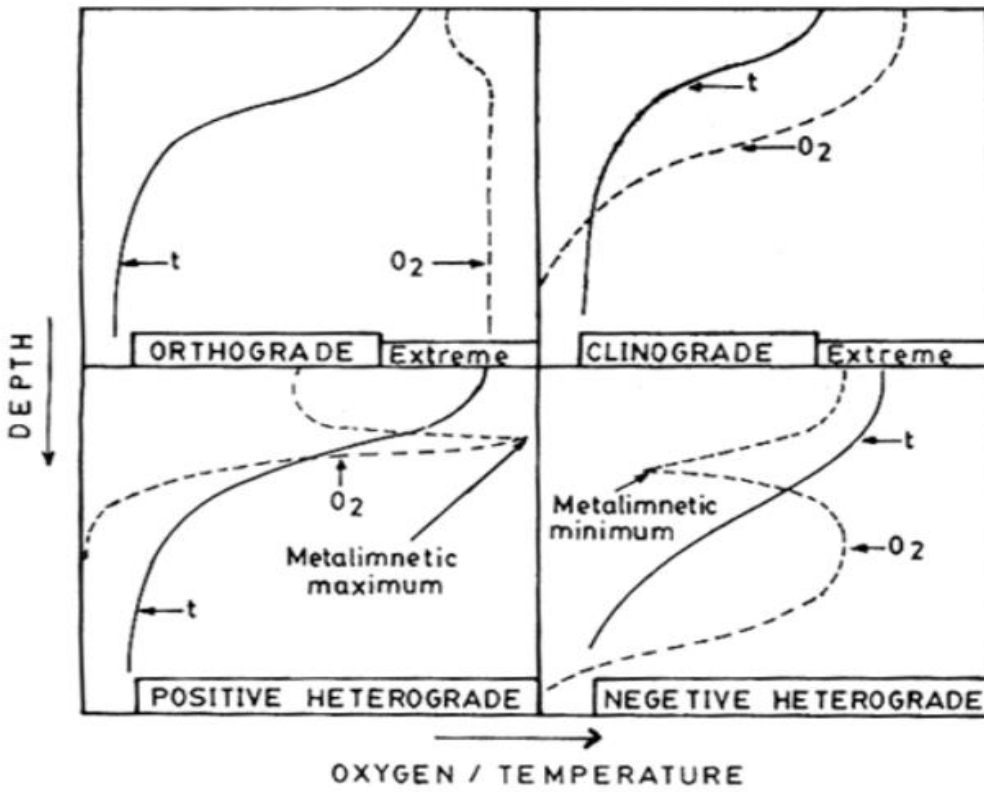


Figure 9: Four common water temperature and DO depth profiles, from Hutchinson, 1957.

Due to the stratification of the lake sites 1 & 2, no summer mixing occurs, resulting in a finite supply of DO for organisms below the thermocline until fall turnover. At depths below 7 m for Lake 1, DO falls below the CCME 6.5 mg/L guideline, while depths below 5 m at Lake 2 also have <6.5 mg/L of DO available. As microbes continue to consume the finite supply of DO in the deep lake waters, the stress of low-DO on aquatic organisms will only increase until the water's DO is replenished during fall turnover.

It appears at the bottom of the lake at both Lake 1 and Lake 2, waters become hypoxic (<2 mg/L) and anoxic (<1 mg/L) and have decreased capacity to support aquatic life (USGS, 2014; Brylinsky, 2004). As oxygen is necessary for aquatic life, anoxic conditions can be harmful and even kill organisms that pass through anoxic waters. In addition, anoxic conditions can cause phosphorus locked in the sediment to change states and be released into the water column, potentially over-enriching the waters with new nutrients and causing algal blooms.

2.1.4. pH

pH is a parameter used to access the acidity of a substance, with pH being the negative logarithmic of the hydrogen ion concentration of the solution (Equation 1). The pH scale ranges from 0 (most acidic) to 14 (most basic), with 7 being the neutral point. In natural waters, due to the dissolution of carbon dioxide, water pH is slightly more acidic than neutral (~6.5), with geology, organic materials, and rain inputs also affecting the water's natural pH state; due to such natural variations, the CCME has set a pH range of 6.5-9.0 as a guideline for the protection of aquatic life (CCME, 2007).

Equation 1: $pH = -\log([H^+])$

Particularly in Nova Scotia, natural organic matter, acid rock drainage from specific bedrock formations, and decades of acid precipitation have lowered the pH of waters in the province and negatively affected fish populations. Although the CCME has set a threshold of 6.5, many aquatic organisms have adjusted to Nova Scotia's acidic waters, with trout species surviving in waters as low as 4.7 (NSSA, 2014). Although organisms can survive in acidic conditions, Harvey and Lee (1982) reported fish kills associated with exposure to highly acidic waters from hours to days, while Courtney and Clements (1998) reported significant reductions in invertebrates after seven days of exposure to acidic conditions (pH 4.0).

pH within the lakes and rivers of the 2018 SL monitoring program varied between 3.2-6.6 (Figures 10 and 11). Lake 3 consistently had the highest pH values, while only Lake 2 and Lake 4 fell below 5.5 (4.22 and 3.24, respectively). It is unclear what caused Lake 4's pH to drop to 3.24 during the October sampling, and more data is required to understand if the pH of this site is commonly acidic, or if this was an anomaly. Of the stream sites, the lowest recorded pH was 5.05 at Pine Lake Brook – Pine Lake Brook was consistently one of the lowest pH sites during the 2018 field season.

Even with pH values below the CCME's 6.5-pH threshold at lake and river sites, the data suggest that pH would not negatively affect aquatic life in the streams and most lake sites. For the stream sites, pH >5.0 is adequate for the survival of fish and invertebrates (Morris, Taylor, and Brown, 1989). Of the lake sites, only Lake 2 and Lake 4 pose a threat to aquatic life; however, as the length of the low-pH conditions are

unknown – due to the monthly sampling frequency of the program – it is unclear if these conditions pose short-term or long-term concerns to aquatic life.

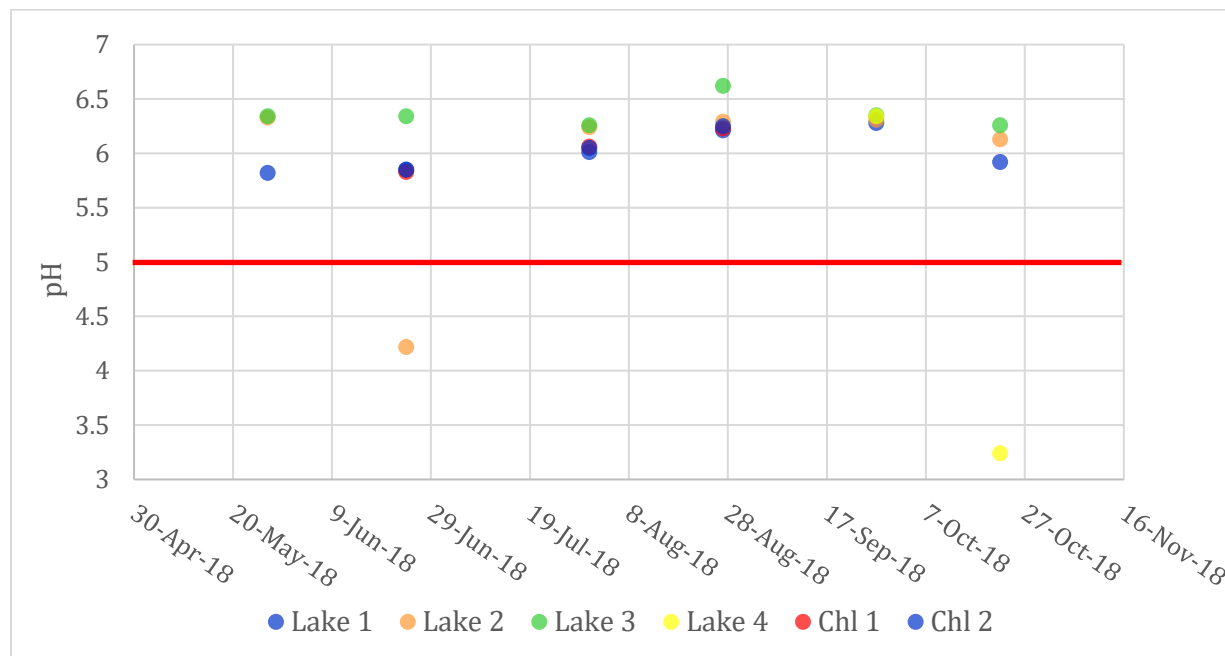


Figure 10: pH at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season. Red line indicates the 5.0-pH minimum threshold for survival of fish and invertebrates (Morris, Taylor, and Brown, 1989).

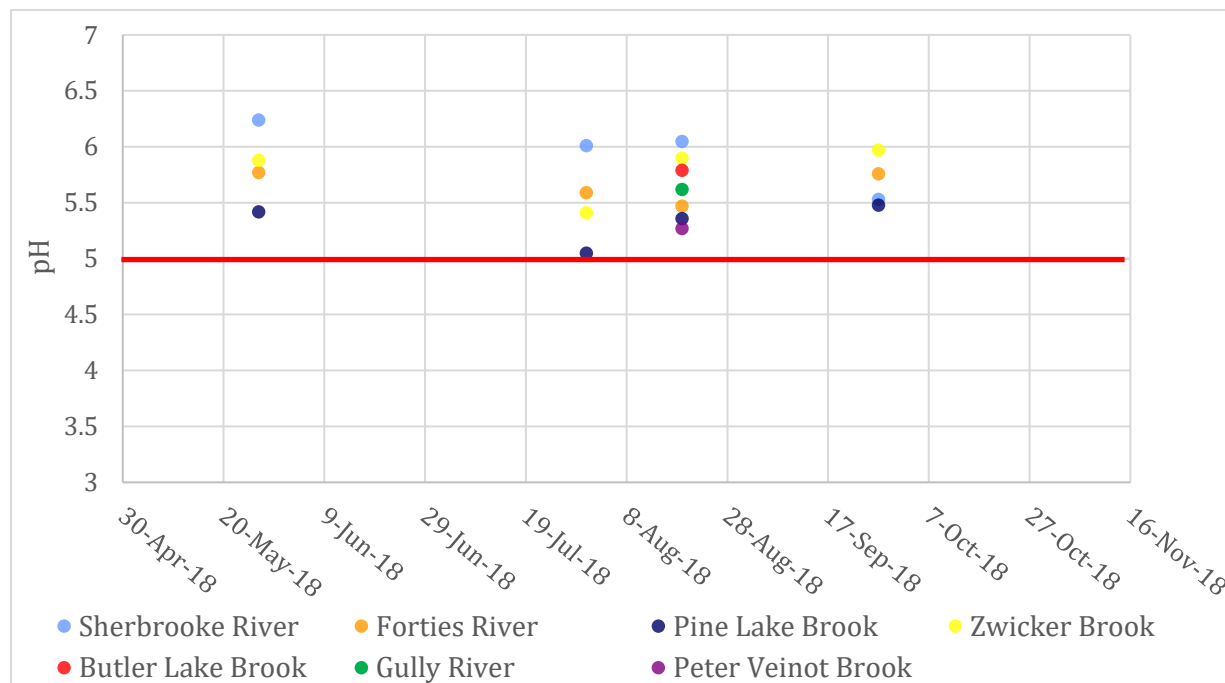


Figure 11: pH at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook). Red line indicates the 5.0-pH minimum threshold for survival of fish and invertebrates (Morris, Taylor, and Brown, 1989).

2.1.5. Total Dissolved Solids

Total dissolved solids (TDS) – a measurement of dissolved materials in water – is an invaluable parameter. TDS can be influenced by construction, deforestation, sewage effluent, urban and agricultural run-off, industrial waste, road salts, forest fires, and rainfall/flooding events, and therefore provides insight into potential pollution issues affecting the water. Although there is no CCME guideline for TDS, high concentrations of TDS can affect a water's taste, colour, and clarity (NSSA, 2014), and reductions in clarity can decrease the depth of light penetration and affect rooted vegetation. For most of Nova Scotia's lakes, TDS ranges from 5 to 235 mg/L (Nova Scotia Lake Inventory Program, 2017).

TDS of the six SL lake sites never exceeded 20.0 mg/L, while most streams had TDS concentrations >20 mg/L (Table 2, Figures 12 and 13). TDS was very similar between lake sites, while streams had slightly more TDS concentration variation between sites. Of the four bimonthly stream sites monitored, no site indicated an increase in TDS during the rainfall sampling event. Butler Brook had the highest recorded TDS concentration (39 mg/L), which is consistent with its 2017 preliminary data (33.8 mg/L), suggesting that the brook has naturally high TDS concentrations. TDS concentrations from SL fall along the lower end of the TDS range for Nova Scotia's lakes.

Table 2: Mean and maximum TDS concentrations from lake and river sites during the 2018 SL field season.

Site Type	Site	Mean TDS (mg/L)	Maximum TDS (mg/L)
Lake	Lake 1	18.8	20.0
	Lake 2	18.2	19.0
	Lake 3	18.2	19.0
	Lake 4	18.5	19.0
	Chl 1	19.0	20.0
	Chl 2	18.3	19.0
Stream	Sherbrooke River	21.3	23
	Forties River	19.0	24
	Pine Lake Brook	17.9	21
	Zwicker Brook	19.0	23
	Butler Brook	-	39
	Gully River	-	14
	Peter Veinot Brook	-	21

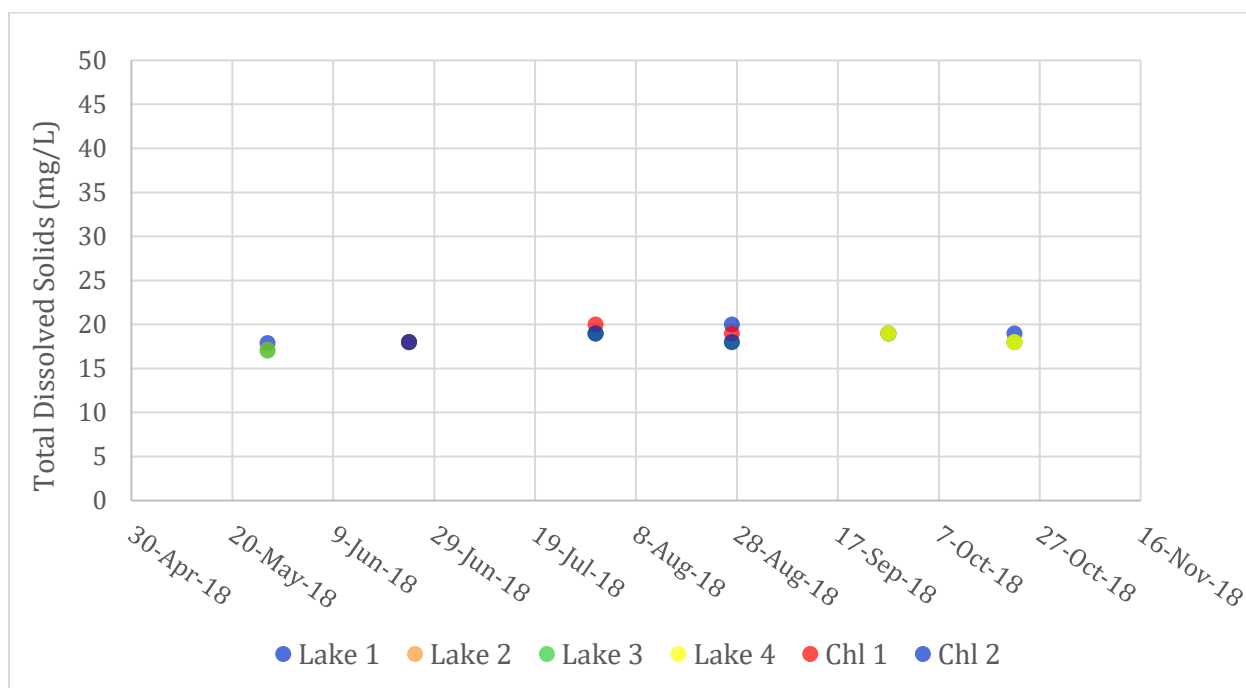


Figure 12: TDS at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.

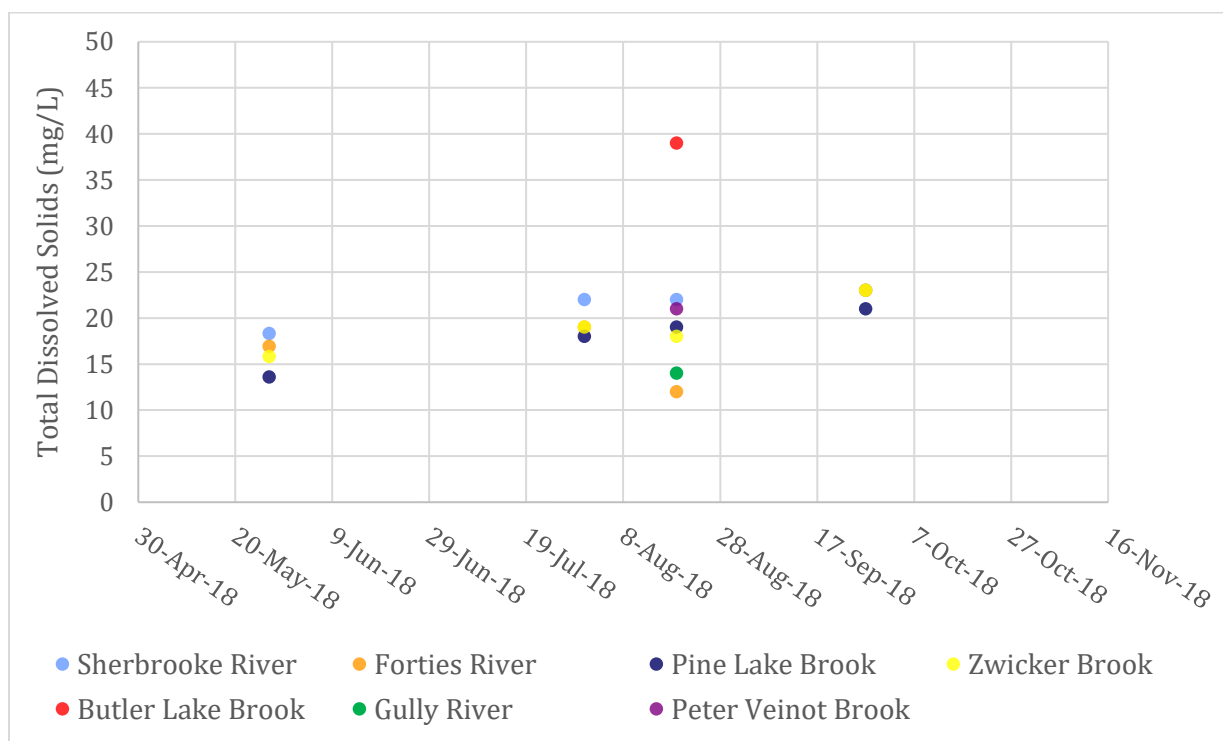


Figure 13: TDS at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).

2.2. Chemical Water Parameters

2.2.1. Total Suspended Solids

Total suspended solids (TSS) is a measurement of all suspended materials in the water column. Increases in TSS can be natural due to erosion or general disturbance of land upstream or can be unnatural (release of substance from deforestation, mining, etc.). According to the Nova Scotia Environment Act (1994-95), *'No person shall release or permit the release into the environment of a substance in an amount, concentration or level of at a rate of release that causes or may cause adverse effect, unless authorized by an approval of the regulations'*; by monitoring and obtaining an initial reference point of TSS and other water quality parameters prior to future potential land disturbances, the SLSC can address and mitigate any possible substance release events.

TSS concentrations ranged from <1 mg/L to 3.4 mg/L for SL lake and river sites (Figures 14 and 15). Most lake sites had <1 mg/L of TSS during the field season, with minimal differences between lake sites. For the stream sites, Zwicker Brook had, in general, the highest TSS concentrations; however, Sherbrooke River did have the highest TSS of the 2018 field season (3.4 mg/L). The high TSS concentration at Sherbrooke River coincides with the rainfall-dependent event; however, no other stream experienced increased TSS during the rainfall event. In Nova Scotia, TSS in lakes ranges from 0.8 to 15 mg/L (Nova Scotia Lake Inventory Program, 2017); SL TSS concentrations fall along the lower end of this range.

Secchi disk depth – the depth to which a black and white disk just is barely visible within a waterbody – can act as a proxy for TSS in lakes. In SL, Secchi disk depths were measured for sites Lake 1-4. Lake 1 was visible to a maximum depth of 2.65 m, with a mean depth of 2.21 m. Lake 2 had a maximum visible depth of 2.84 m and mean depth of 2.43 m. At Lake 3 and 4, the Secchi depths were equivalent to the depth of water, due to the shallowness of the sites (mean depth of 1.78 m and 2.38 m, respectively). Although Secchi depth provides an indication of light penetration into waterbodies, the measurements can be skewed due to an individual's eyesight, and different individuals performing the measurement on different days.

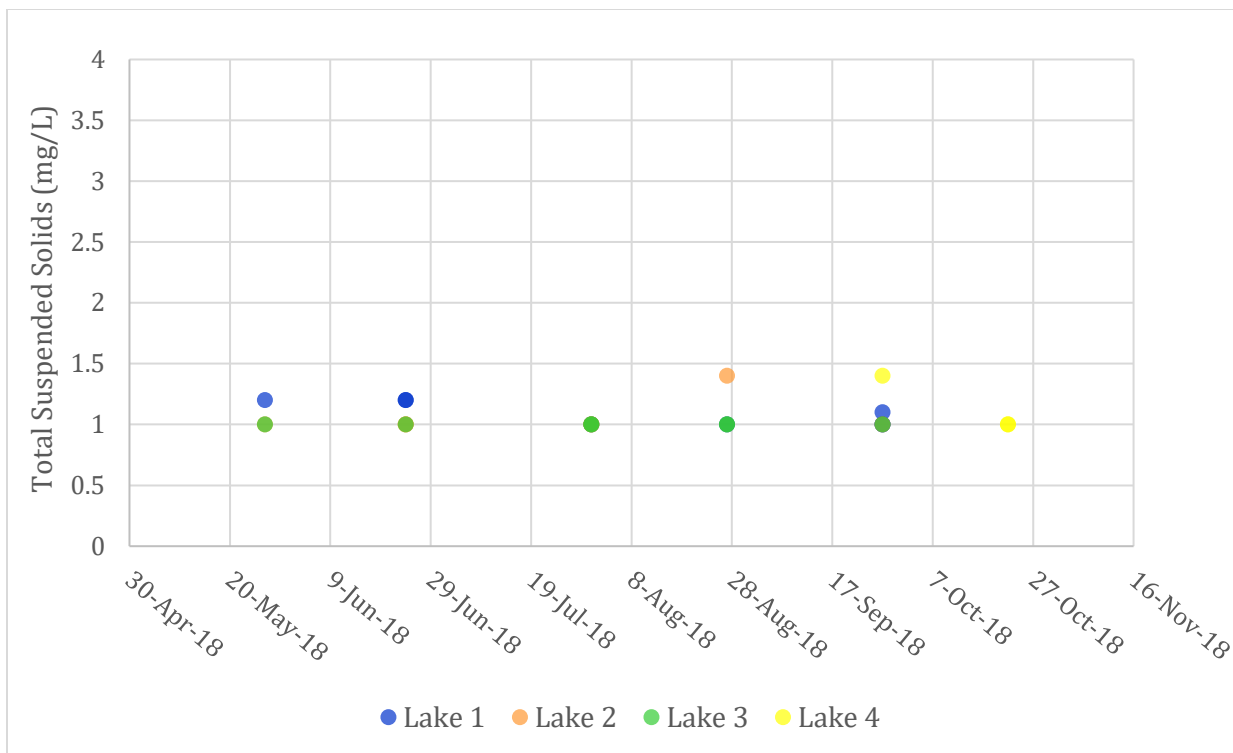


Figure 14: TSS at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season.

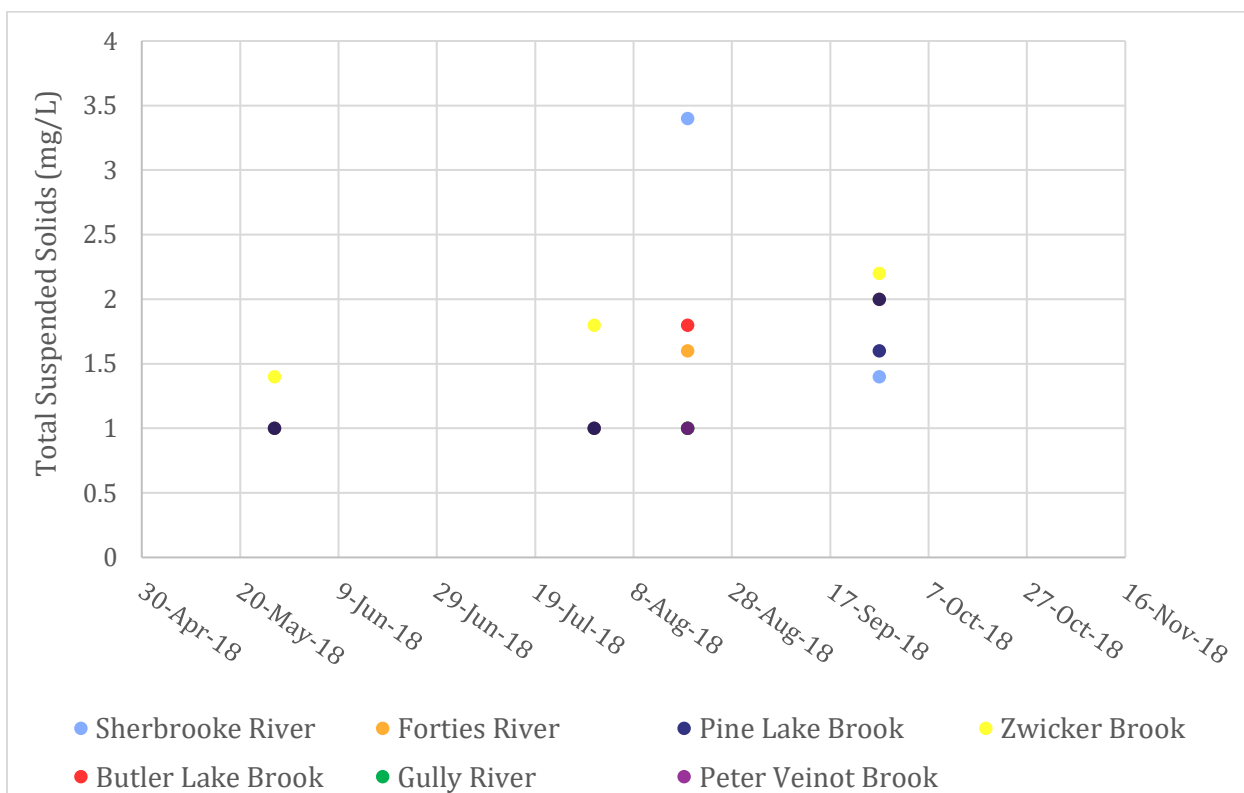


Figure 15: TSS at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook).

2.2.2. Total Phosphorus

Phosphorus concentrations (both organic and inorganic) are extremely important in healthy ecosystems; phosphorus acts as a nutrient to various organisms and plants within watersheds. Due to minimal natural sources of phosphorus and high demand of phosphorus by plants, phosphorus concentrations are low in aquatic environments and therefore a growth-limiting factor. As phosphorus is a key nutrient in freshwater environments, and not considered a toxic substance, the CCME does not have set guidelines; however, Ontario's Ministry of Environment and Climate Change (MOECC) has set a total phosphorus guideline of ≤ 0.02 mg/L for lakes, and ≤ 0.03 mg/L for rivers and streams (MOE, 1979). By monitoring phosphorus, pollution sources can be located due to 'pockets' of elevated phosphorus concentrations. In addition, by monitoring phosphorus below a lake's thermocline, we can assess how nutrients are being used/supplied in deeper waters, and if nutrient-enrichment will be a problem once the waters mix during fall and spring turnover.

Lake sites were consistently lower than streams (Figures 16 and 17, Table 3). Lake phosphorus concentrations ranged from <0.004 mg/L to 0.017 mg/L, while streams ranged from 0.011 mg/L to 0.04 mg/L. No lake phosphorus concentrations exceeded the MOECC lake guideline of 0.02 mg/L, while three stream sites exceeded the MOECC stream guideline of 0.03 mg/L. Zwicker Brook, Forties River, and Sherbrooke River all exceeded the guideline by 0.01 mg/L, while Pine Lake Brook, Butler Lake Brook, and Gully River were at the threshold (0.03 mg/L). Phosphorus concentrations increased at the four bimonthly streams during the rainfall event; phosphorus concentrations were also elevated at the three rainfall-dependent sites, but as these sites were not sampled more than once, it is unclear if these phosphorus concentrations are elevated or natural. Due to the increase in phosphorus of the bimonthly streams, it is reasonable to assume that the rainfall caused increased flushing of phosphorus into the streams. As the monthly sampling for August did not occur until 10 days after the rainfall event, the effects of the stream phosphorus flushing on lake sites would be minimal.

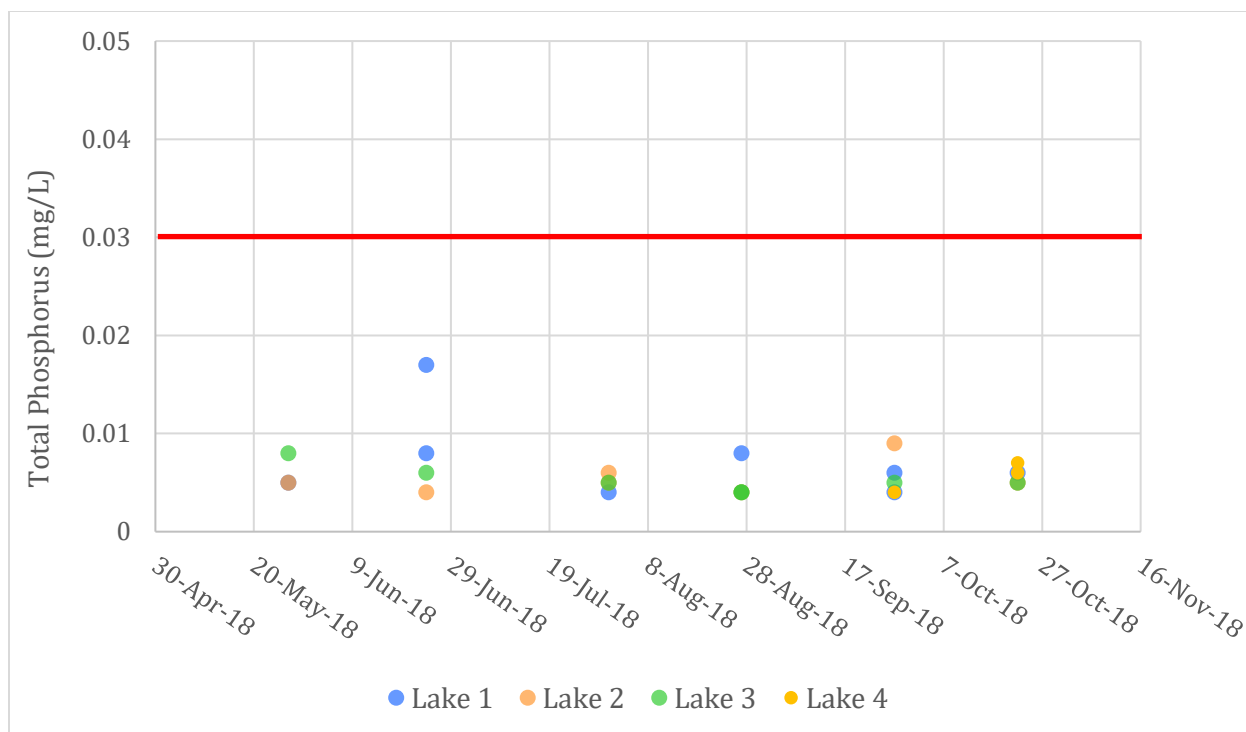


Figure 16: Total phosphorus at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season. Red line indicates the MOECC 0.03 mg/L guideline for phosphorus in streams.

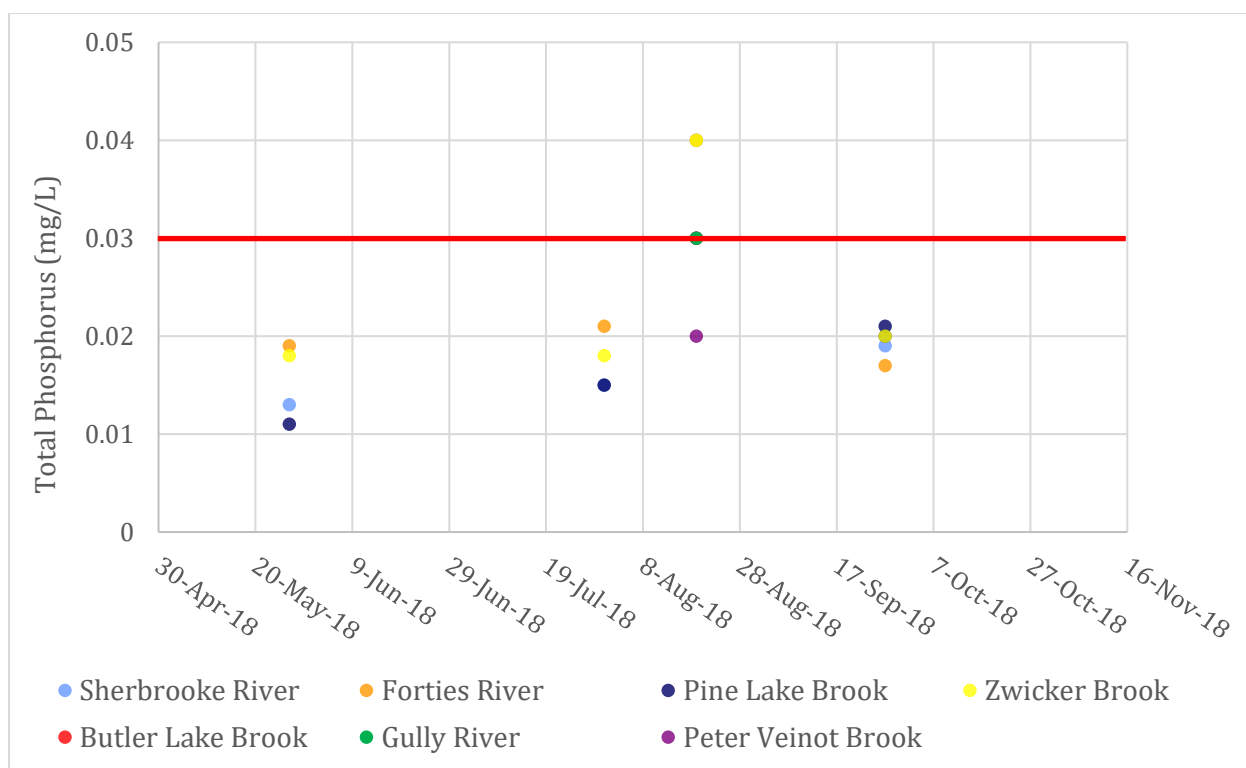


Figure 17: Total phosphorus at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook). Red line indicates the MOECC 0.03 mg/L guideline for phosphorus in streams.

Phosphorus concentrations during the 2018 field season differ at several sites compared to the 2017 preliminary data (Table 3). Phosphorus concentrations are similar for all lake sites, while all stream sites have increased phosphorus concentrations. The difference between the stream concentrations may be due to the weather differences during sampling events, as the 2017 samples were collected on a day without rain, while the 2018 samples collected during the same month (August) were collected during the rainfall-dependent event.

Table 3: Range in total phosphorus concentrations between 2017 and 2018; July-August for lake samples, August for river samples.

Site	2017 Range	2018 Range
Lake 1	0.005-0.008	0.004-0.008
Lake 2	0.004-0.005	0.004-0.009
Lake 3	No data	0.004-0.005
Lake 4	No data	0.004-0.007
Sherbrooke River	0.007	0.04
Forties River	0.016	0.04
Pine Lake Brook	0.019	0.03
Zwicker Brook	0.024	0.04
Butler Lake Brook	0.013	0.03
Gully River	0.01	0.03
Peter Veinot Brook	0.01	0.02

Elevated phosphorus concentrations below the thermocline may indicate a possible nutrient-enrichment event during fall turnover, with a potential for eutrophication and algal blooms. In SL, phosphorus concentrations below the thermocline ('phosphorus at-depth') were not significantly lower than surface concentrations (Table 4). Phosphorus at-depth was 0.001 mg/L lower than Lake 1 surface waters, while Lake 2 saw an increase of 0.021 mg/L between surface and at-depth concentrations. High phosphorus concentrations in the deeper lake waters suggests that the thermocline is not allowing nutrient mixing within the lake profile, and that there is minimal assimilation of phosphorus at-depth. Although no algal bloom occurred during fall turnover in SL, caution should be advised to residents of SL during the fall, as the mixing of elevated phosphorus concentrations increases the risk of a fall algal bloom in the future.

Table 4: Total phosphorus concentrations from two lake sites, obtained both at the surface and below the thermocline, in August for the SL 2018 Water Quality Monitoring Program.

Site	Surface Phosphorus (mg/L)	Phosphorus At-Depth (mg/L)
Lake 1	0.008	0.007
Lake 2	0.004	0.025

2.2.3. Total Nitrogen

Like phosphorus, nitrogen concentrations are also key and limiting nutrients for plants and other organisms in freshwater environments. No CCME guidelines exist for nitrogen; however, Dodds and Welch (2000) have established a ≤ 0.9 mg/L guideline for freshwater environments, while Underwood and Josselyn (1979) reported a guideline of ≤ 0.3 mg/L for oligotrophic waterbodies.

Lake nitrogen concentrations ranged from 0.18 mg/L to 0.359 mg/L, while stream nitrogen concentrations ranged from 0.35 mg/L to 0.883 mg/L (Figures 18 and 19, Table 5). Total nitrogen, just as total phosphorus, was lower in lake sites than stream sites, and total nitrogen increased at all stream sites compared to the 2017 preliminary sampling data – possibly due to a difference in sampling event types. No stream or lake site exceeded the Dodds and Welch (2000) 0.9 mg/L threshold; however, the Lake 1 site did exceed the Underwood and Josselyn (1979) 0.3 mg/L threshold for oligotrophic waterbodies once – 0.359 mg/L on July 31st, 2018.

Exceedance of the oligotrophic threshold, in addition to the elevated nitrogen concentrations at all seven streams during the rainfall event suggests that nitrogen pollution may be a problem in SL in the future, and that rainfall may be a key driver of how pollutants enter the lake. Of the bimonthly streams monitored during the sampling program, all four streams had increases in total nitrogen during the rainfall-dependent sampling. Of the lake sites sampled during the monthly August event, nitrogen concentrations only increased at Lake 2, while Lake 1 and 3 dropped from the July concentrations – as sampling occurred 10 days after the rainfall-dependent sampling, it is possible that the influx of nitrogen from the inlet streams had been assimilated by plants, and therefore the lake’s elevated nitrogen concentrations associated with the rainfall event may have been missed.

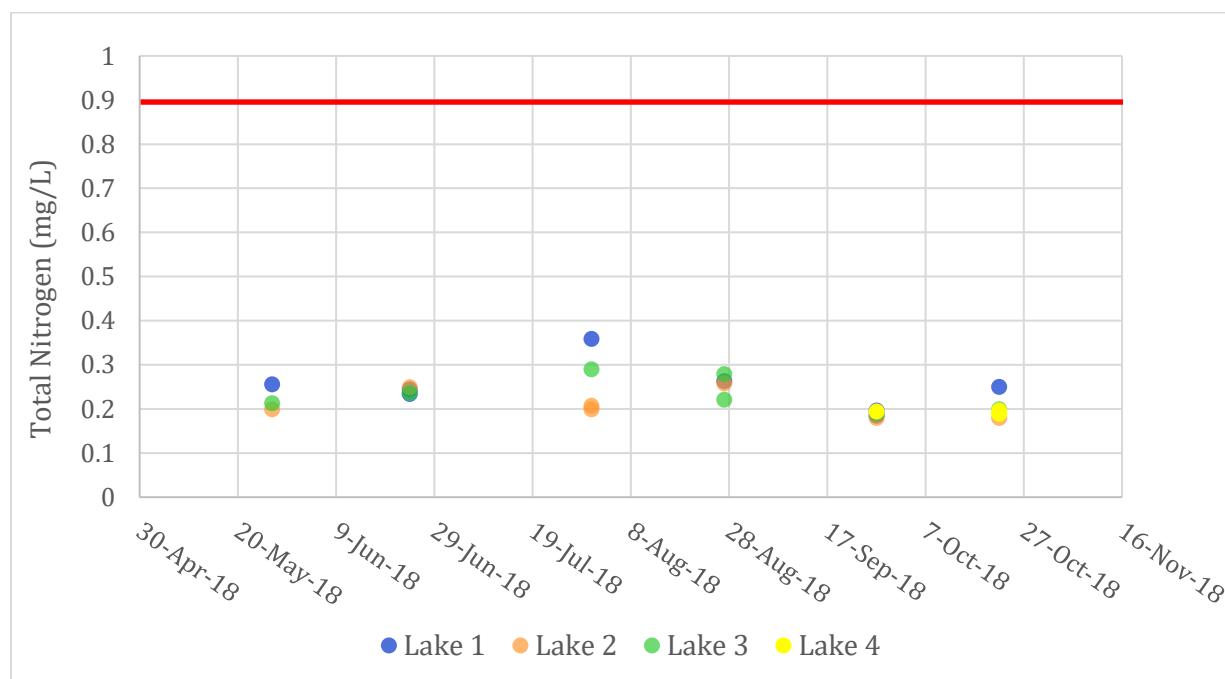


Figure 18: Total nitrogen at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season. Red line indicates the Dodds and Welch (2000) 0.9 mg/L nitrogen threshold for freshwaters.

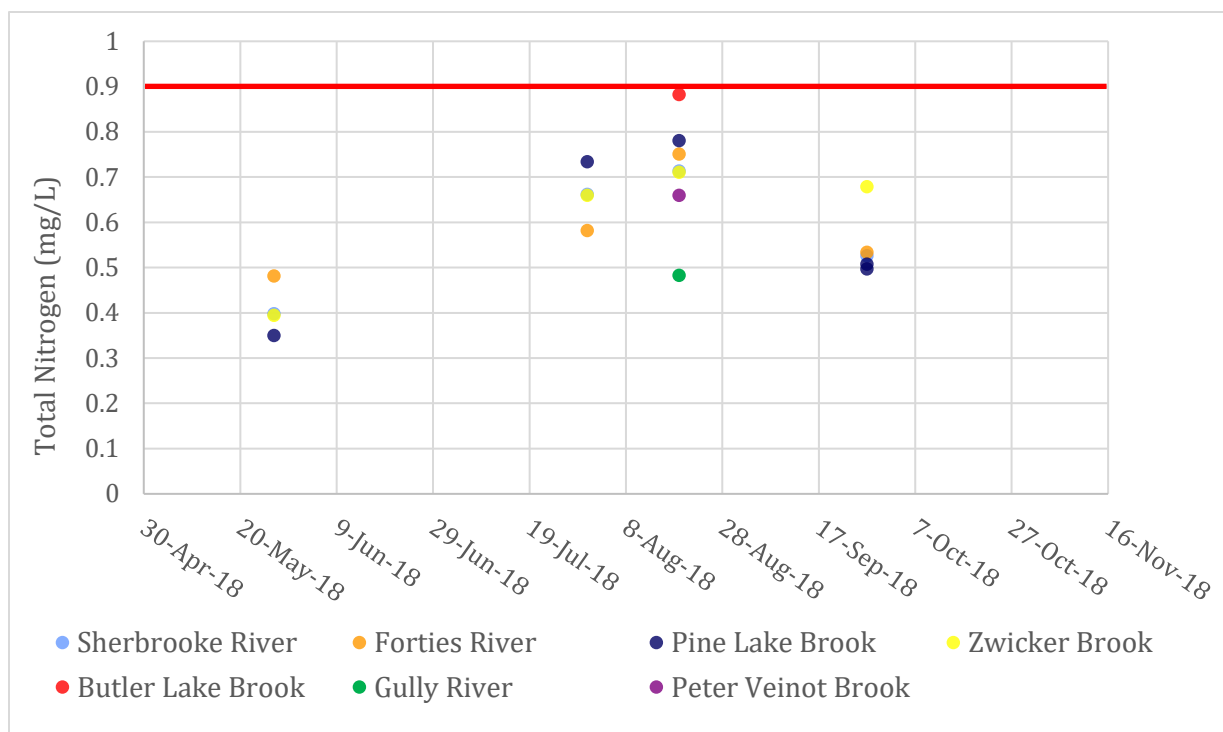


Figure 19: Total nitrogen at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook). Red line indicates the Dodds and Welch (2000) 0.9 mg/L nitrogen threshold for freshwaters.

Table 5: Range in total nitrogen concentrations between 2017 and 2018; July-August for lake samples, August for river samples.

Site	2017 Range	2018 Range
Lake 1	0.258-0.36	0.185-0.359
Lake 2	0.234-0.324	0.18-0.258
Lake 3	No data	0.19-0.29
Lake 4	No data	0.189-0.196
Sherbrooke River	0.511	0.714
Forties River	0.685	0.751
Pine Lake Brook	0.629	0.781
Zwicker Brook	0.592	0.711
Butler Lake Brook	0.434	0.883
Gully River	0.441	0.483
Peter Veinot Brook	0.374	0.66

Just as with phosphorus, elevated nitrogen concentrations below the thermocline may indicate a possible nutrient-enrichment event during fall turnover, with a potential for eutrophication and algal

blooms. In SL, nitrogen concentrations at-depth were not significantly lower than surface concentrations (Table 6). Lake 2 had almost double the surface nitrogen concentration in the waters below the thermocline. With elevated phosphorus and nitrogen concentrations below the thermocline, SL fall turnover is essential for nutrient dispersal – and a concern for eutrophication. Although no algal bloom occurred in fall 2018 in SL, caution should be taken in the future, especially at Lake 2 where nutrients are particularly high.

Table 6: Total nitrogen concentrations from two lake sites, obtained both at the surface and below the thermocline, in August for the SL 2018 Water Quality Monitoring Program.

Site	Surface Nitrogen (mg/L)	Nitrogen At-Depth (mg/L)
Lake 1	0.263	0.223
Lake 2	0.258	0.46

2.2.4. Hydrocarbons

Hydrocarbons are chains of carbon and hydrogen molecules which are the main components of natural gases and petroleum products. Monitoring hydrocarbons provides insight to whether anthropogenic activities are influencing water quality in the region - such as boating and combustion of petroleum products causing atmospheric deposition of polycyclic aromatic hydrocarbons (PAHs) (Das, Routh, and Roychoudhury, 2008; Andren and Strand, 1979).

No hydrocarbons were detectable at any lake sites during either the preliminary-2017 and full-2018 SL Water Quality Monitoring Program. Hydrocarbons should continue to be monitored at all lake sites to monitor for changes in detectable amounts of hydrocarbons – especially at sites Lake 3 and 4, where a public boat launch is proposed, which would see an increase in boat traffic, and by association, increases in the potential for hydrocarbon releases into the lake. As hydrocarbons commonly form particulate complexes that settle out of solution, collecting sediment hydrocarbon samples at sites Lake 3 and 4 may also be useful in developing a reference point prior to the installment of the SL public access site.

2.2.5. Chlorophyll *a*

Chlorophyll *a* is a parameter used as a proxy for biological activity within water and can be an indicator for potential algal blooms if it increases to elevated levels (Stumpf, 2001). For SL, chlorophyll *a* never exceeded 7 µg/L (Figure 20). Chlorophyll *a* decreased over the 2018 sampling season and plateaued from August to October. The highest chlorophyll *a* concentration was observed at Lake 1 in May 2018, while Lake 3 consistently had the lowest chlorophyll *a* concentrations. The low chlorophyll *a* concentrations throughout the 2018 field season, and no increase in chlorophyll *a* during the fall turnover, coincide with the lack of algal blooms observed within the lake.

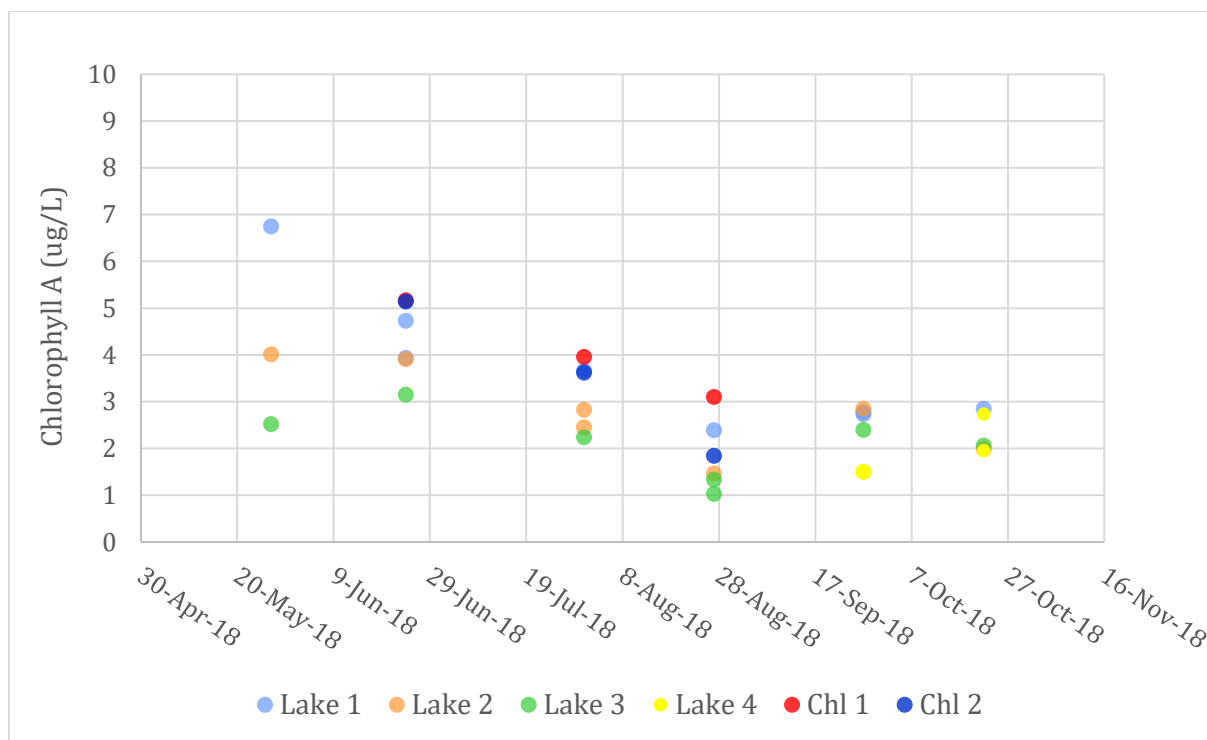


Figure 20: Chlorophyll a at four monthly lake sites (Lake 1-4), and two summer-only sites (Chl 1 and Chl 2) during the May-October 2018 SL water quality field season.

2.2.6. Fecal Coliform Bacteria

Fecal coliform bacteria are found in the waste of warm-blooded animals and used as indicators of fecal pollution within freshwater environments. Sources of bacteria can include agricultural lands – due to the spreading of manure on crops, stream crossings by livestock, and livestock feces (Stephenson and Street, 1978; Hunter et al., 1999; Crane et al., 1983), domestic and wild animal feces, leachate from landfills (Maqbool et al., 2011), malfunctioning septic systems, illegal straight-pipes, and stormwater run-off (both urban areas and overland flow in rural regions).

In recreational waters, the presence of fecal pollution presents a risk to the public, as the possible presence of pathogenic microorganisms can infect humans and animals and cause serious illnesses. As testing for the hundreds of disease-causing microorganisms is costly and impractical, this program uses fecal coliforms measured in coliform forming units per 100 mL (CFU/100mL) as an indicator of fecal pollution. Fecal coliforms act as a proxy for *Escherichia coli* (*E. coli*), Health Canada's indicator bacteria for fecal contamination in freshwaters, under the assumption that 90% of fecal coliforms are *E. coli*. For recreational waters, Health Canada has set a limit of < 400 CFU/100 mL of fecal coliforms and *E. coli* during primary contact activities (activities where the body, face, or trunk are submersed, and it is likely that water will be swallowed, such as: swimming, surfing, canoeing, etc.) (Health Canada, 2012). Although the presence of fecal coliforms indicates the presence of fecal contamination, the absence of fecal coliforms should not be interpreted to mean that all pathogenic organisms are absent.

In the four lake sites and seven inlet stream sites monitored during the 2018 field season, no site exceeded the Health Canada primary contact limit (Figures 21 and 22). The highest fecal coliform count

within the lake sites was 20 CFU/100 mL, found at Lake 2 in July 2018. Samples were below laboratory detection limits for all eight Lake 1 samples, six of seven Lake 2 samples, six of seven Lake 3 samples, and two of three Lake 4 samples. For the streams, concentrations ranged from <10 CFU/100 mL to 350 CFU/100 mL. The highest bacteria concentration was recorded at Butler Lake Brook (350 CFU/100 mL), during the rainfall-dependent event.

Elevated stream bacteria concentrations were recorded during both the August rainfall-dependent event and September bimonthly event – these elevated concentrations may be due to flushing of bacteria on land into the streams, as both samples coincided with heavy rainfall. Increases in bacteria in waterbodies following rainfall is commonly reported in the literature (Rodgers et al., 2003; Hunter, McDonald, and Beven, 1992; Stephenson and Street, 1978); however, it appears that the increases did not affect lake water quality. Although the rainfall-dependent sampling did not include sampling lake sites, the September sampling event coincided with heavy rainfall and required both lake and bimonthly sampling of the four primary inlet streams. Though the four streams had elevated September bacteria concentrations, no increase in bacteria concentrations was recorded at any lake site. Caution should still be maintained by the public after rainfall events, to avoid exposure to high fecal bacteria concentrations, especially around streams and where streams and the lakes intersect. In addition, caution should be taken in streams that have known bacteria sources upstream.

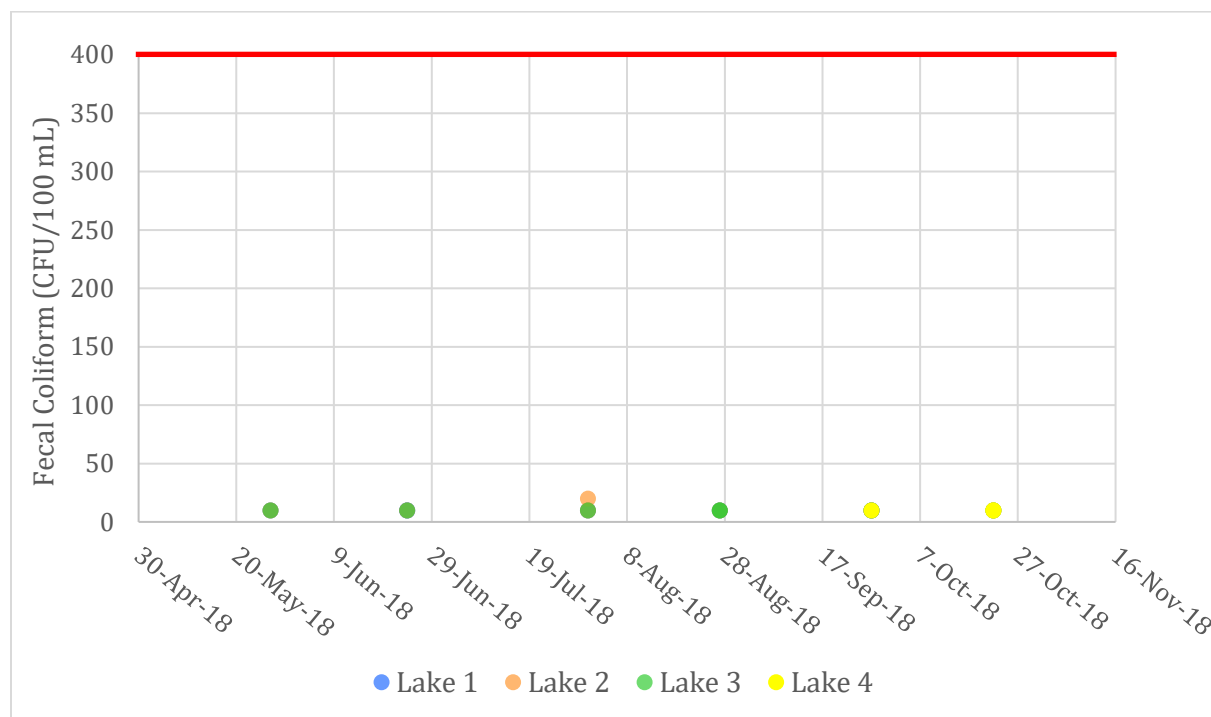


Figure 21: Fecal coliform at four monthly lake sites (Lake 1-4) during the May-October 2018 SL water quality field season. Red line indicates Health Canada's fecal coliform concentration limit for recreation in freshwaters (400 CFU/100 mL).

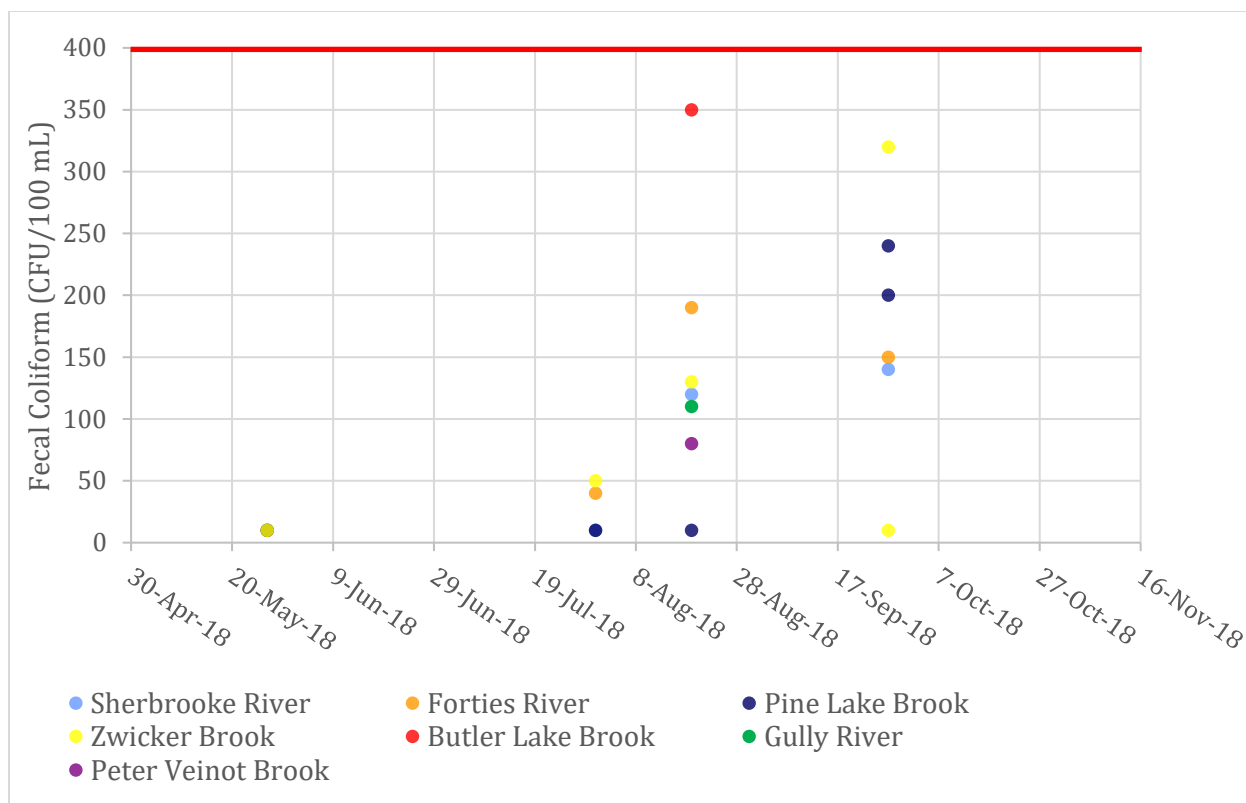


Figure 22: Fecal coliform at four bimonthly and rainfall-dependent stream sites (Sherbrooke River, Forties River, Pine Lake, and Zwicker Brook), in addition to three rainfall-dependent stream sites (Butler Lake Brook, Gully River, and Peter Veinot Brook). Red line indicates Health Canada's fecal coliform concentration limit for recreation in freshwaters (400 CFU/100 mL).

2.3. Sediment Sampling

Sediments can have adverse effects on water quality in lakes and rivers, as sediment acts as a reservoir for metals, nutrients, and organisms. During turbulence in streams, chemicals held within sediment can be released, causing an influx of more than just TSS and TDS, but increases in metals, bacteria, organic matter, and nutrients (Reddy et al., 1999; Brylinsky, 2004) – all of which can negatively affect a lake's fragile chemical equilibrium.

For sediments found at the bottom of lakes, resuspension is less likely; however, sediments can affect bottom-feeding organisms due to high concentrations of metals which settle out of suspension and accumulate on the lake bottom (Guthrie and Perry, 1980). Affecting bottom-feeders thereby affects other organisms due to bioaccumulation of chemicals through the food-chain (Fishar and Ali, 2005; Chen and Chen, 1999). In addition, different forms of phosphorus held in sediments can greatly affect lakes. Orthophosphate is a bioavailable form of phosphorus which tends to be in lower concentrations due to high demand by plants; however, as plants decompose, orthophosphate is released back into the environment (CCME, 2004; Howell, 2010). For phosphorus held into complexes with metals, anoxic conditions facilitate the dissolution of complexes and release of phosphorus from sediments (Hayes, Reid, and Cameron, 1985). Increased levels of phosphorus released from sediments into the water (internal phosphorus loading) can cause nutrient-enrichment and potential eutrophication and algal

blooms (Sondergaard, Jensen, and Jeppesen, 2003) – this is particularly susceptible during turnover, when nutrient-rich bottom waters are mixed throughout the lake, providing new food sources for organisms.

High concentrations of metals within the lake bottom sites, unlike the Forties River site, may negatively affect aquatic life (Table 7). Within the Lake 2 and 3 sites, arsenic, cadmium, lead, and mercury exceed the CCME interim sediment quality guidelines (ISQG). In addition, manganese and selenium concentrations appear to be close to CCME sediment guidelines and should be monitored (CCME, 2001). Lake 2 has more exceedances of metal guidelines than Lake 3 – this may be due to the increased depth and greater slope of Lake 2. Water depth and slope are associated with increased metal concentrations due to funneling of particulate matter towards deeper lake-bottom pockets, as observed by Hakanson (1977) in Lake Vanern, Sweden.

Sediment metal concentrations at both SL lake sites are comparable to metal concentrations found in four Kejimikujik lakes monitored from 2000-2009. Sediment samples were collected by Environment and Climate Change Canada from Hichemakaar Lake, Big Dam East, Cobrielle Lake, and Peskowsk between 2000 and 2009 (Kirk, 2018). Although the SL and Kejimikujik lakes have comparable sediment metal concentrations, many of these metals' concentrations exceed CCME guidelines. The high metal concentrations at Lake 2 are greater than the mean metal concentrations found at Kejimikujik for arsenic, cadmium, lead, manganese, and mercury (Table 8). In addition, the concentration of cadmium in sediment at Lake 2 and 3 is greater than the maximum cadmium concentration found in the four Kejimikujik lakes. Although Lake 1 sediment was not sampled during the 2018 monitoring program, it is recommended that sediment sampling be done at the site in the future, due to the high metal concentrations recorded at the Lake 2 and 3 sites.

As Forties River does not exceed any guidelines, it does not appear to be a significant influence on metal concentrations within the lake sites. It is possible that one (or multiple) of the other 13 inlet streams is affecting metal concentrations within the lake sediments; the lake sediments may also just be the accumulation over time from metal inputs from other inlet streams. Expanding sediment analyses to slowly assess sediment quality from the other six main inlet streams would help determine whether one or multiple streams are influencing lake sediments accumulation quantities.

Table 7: Concentration of metals within site sediment samples sampled on August 27th, 2018. Interim sediment quality guideline (ISQG) is the recommendation by CCME of total concentrations of chemicals in surficial sediment, while the probable effect level (PEL) is the CCME upper value in which adverse effects are expected (CCME, 2001). Nova Scotia environmental quality standards (NSEQS) are sediment guidelines specifically set by the Nova Scotia Environment (NSE, 2014). Light yellow indicates parameters approaching one of the guidelines, while dark yellow indicates an exceedance of one of the guidelines.

Metal	UNITS	Sediment Sample Concentrations				Concentration Guidelines		
		Lake 2	Lake 3	Forties River	RDL*	ISQG	PEL	NSEQS
Acid Extractable Aluminum (Al)	mg/kg	22000	6700	4300	10	-	-	-
Acid Extractable Antimony (Sb)	mg/kg	ND*	ND	ND	2.0	-	-	-
Acid Extractable Arsenic (As)	mg/kg	16	8.3	2.7	2.0	5.9	17	17
Acid Extractable Barium (Ba)	mg/kg	42	26	26	5.0	-	-	-
Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	2.0	-	-	-
Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	2.0	-	-	-
Acid Extractable Boron (B)	mg/kg	ND	ND	ND	50	-	-	-
Acid Extractable Cadmium (Cd)	mg/kg	1.0	1.5	ND	0.30	0.6	3.5	3.5
Acid Extractable Chromium (Cr)	mg/kg	14	4.6	4.7	2.0	37.3	90	90
Acid Extractable Cobalt (Co)	mg/kg	8.8	6.8	2.3	1.0	-	-	-
Acid Extractable Copper (Cu)	mg/kg	15	13	ND	2.0	35.7	197	197
Acid Extractable Iron (Fe)	mg/kg	14000	10000	8300	50	-	-	47,766
Acid Extractable Lead (Pb)	mg/kg	49	13	3.3	0.50	35	91.3	91.3
Acid Extractable Lithium (Li)	mg/kg	10	11	20	2.0	-	-	-
Acid Extractable Manganese (Mn)	mg/kg	480	1000	200	2.0	-	-	1,100
Acid Extractable Mercury (Hg)	mg/kg	0.27	0.16	ND	0.10	0.17	0.486	0.486
Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	2.0	-	-	-
Acid Extractable Nickel (Ni)	mg/kg	7.5	5.7	2.3	2.0	-	-	75
Acid Extractable Phosphorus (P)	mg/kg	1900	400	180	100	-	-	-
Acid Extractable Rubidium (Rb)	mg/kg	6.3	4.7	17	2.0	-	-	-
Acid Extractable Selenium (Se)	mg/kg	1.8	ND	ND	1.0	-	-	2
Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	0.50	-	-	1
Acid Extractable Strontium (Sr)	mg/kg	13	ND	ND	5.0	-	-	-
Acid Extractable Thallium (Tl)	mg/kg	0.26	0.34	0.12	0.10	-	-	-
Acid Extractable Tin (Sn)	mg/kg	3.0	2.0	ND	2.0	-	-	-
Acid Extractable Uranium (U)	mg/kg	5.7	1.7	0.52	0.10	-	-	-
Acid Extractable Vanadium (V)	mg/kg	30	11	11	2.0	-	-	-
Acid Extractable Zinc (Zn)	mg/kg	93	96	20	5.0	123	315	315
Orthophosphate (P)	mg/kg	0.067	0.26	0.33	0.050	-	-	-

*RDL = Reportable Detection Limit; ND = Not Detected

Table 8: Comparison of 2018 sediment metal concentrations from SL Lake 2, Lake 3, and Forties River to the range and mean metal concentrations from four Kejimikujik Lakes (Hilchemakaar, Big Dam East, Cobrielle, and Peskowsk) monitored from 2000-2009 (Kirk, 2018).

Metal	Unit	Lake 2	Lake 3	Forties River	Kejimkujik Range	Kejimkujik Mean Concentration
Acid Extractable Arsenic (As)	mg/kg	16	8.3	2.7	3.55-27.1	10.50
Acid Extractable Cadmium (Cd)	mg/kg	1.0	1.5	ND*	0.1-0.4	0.26
Acid Extractable Lead (Pb)	mg/kg	49	13	3.3	43-62.5	48.40
Acid Extractable Manganese (Mn)	mg/kg	480	1000	200	28.7-666	273.40
Acid Extractable Mercury (Hg)	mg/kg	0.27	0.16	ND	0.14-0.345	0.22
Acid Extractable Selenium (Se)	mg/kg	1.8	ND	ND	1.39-3.17	2.24

*RDL = Reportable Detection Limit; ND = Not Detected

Regarding the phosphorus levels within the lake and river sediment (Table 9), although Lake 2 has the highest amount of phosphorus in sediment, Forties River has the highest orthophosphate to phosphorus ratio. All three sites had low orthophosphate to phosphorus ratios (<0.2% each), indicating that the bioavailable orthophosphate is being quickly assimilated by organisms and therefore most of the phosphorus in the sediment is in non-bioavailable forms. Although there is no sediment phosphorus guideline set by the CCME, Ontario's Provincial Sediment Quality Guidelines have a 600-2000 mg/kg range, where 2000 mg/kg of phosphorus in sediment is the 'severe effect level' (Ontario MOE, 2008). Lake 3 and Forties River are below the Ontario guidelines, suggesting minimal influence by pollution and no negative effects on aquatic organisms; however, Lake 2 is close to the 2000 mg/kg severe effect level (1900 mg/kg at Lake 2) and therefore may indicate pollution affecting the lake, and a potential for internal loading for phosphorus in the lake causing algal blooms. Lake 2 should be considered a 'site of concern' and be continued to be monitored due to high potential for nutrient-enrichment, eutrophication, and algal blooms.

Table 9: Phosphorus concentrations in sediment samples from lake and river sites sampled on August 27th, 2018.

	Lake 2	Lake 3	Forties River
Orthophosphate in sediment (mg/kg)	0.0067	0.26	0.33
Acid extractable phosphorus in sediment (mg/kg)	1900	400	180

3. Discussion

3.1. Trophic State of Sherbrooke Lake

Trophic states describe the productivity of a waterbody which can aid in tracking how a waterbody changes over time. Trophic states range from oligotrophic (low productivity and minimal biomass) to hypereutrophic (high productivity and maximum biomass). The trophic state index (TSI), proposed by Carlson (1977), uses the depth of transparency (Secchi disk), and concentrations of chlorophyll *a* and phosphorus to apply a number to the waterbody's state (Equations 2, 3, and 4) – associated with its trophic state. Tracking a waterbody's TSI allows comparison between years using the same methods.

Equation 2: $TSI (Secchi\ disk) = 60 - 14.41 \times \ln(Mean\ Secchi\ disk\ [m])$

Equation 3: $TSI (chlorophyll\ A) = 30.6 + 9.81 \times \ln(Mean\ chlorophyll\ A\ [\frac{\mu g}{L}])$

Equation 4: $TSI (total\ phosphorus) = 4.15 + 14.42 \times \ln(Mean\ total\ phosphorus\ [\frac{\mu g}{L}])$

In SL, the lake's TSI could be based on sites Lake 1 and Lake 2, therefore a TSI was created for both sites (Table 10; Figure 23). Both sites indicate mainly mesotrophic conditions, with phosphorus concentrations towards oligotrophic status. Concern should be minimal for the Secchi disk/water transparency eutrophic-approaching indices, as water transparency is not an exact indication of a waterbody's productivity, and can be influenced by factors other than biomass, such as suspended particles within the water column (NSSA, 2014; EPA, 2002). For 2018, the SL trophic status should be considered borderline oligotrophic-mesotrophic.

Table 10: Carlson (1977) 2018 SL TSI scores and trophic states for total phosphorus, chlorophyll A, and Secchi disk for Lake 1 (red) and Lake 2 (blue).

TSI Score	Trophic State	Phosphorus	Chlorophyll A	Secchi Disk
< 40	Oligotrophic	33.3 28.6		
40-50	Mesotrophic		42.3 40.7	48.6 47.38
> 50	Eutrophic			

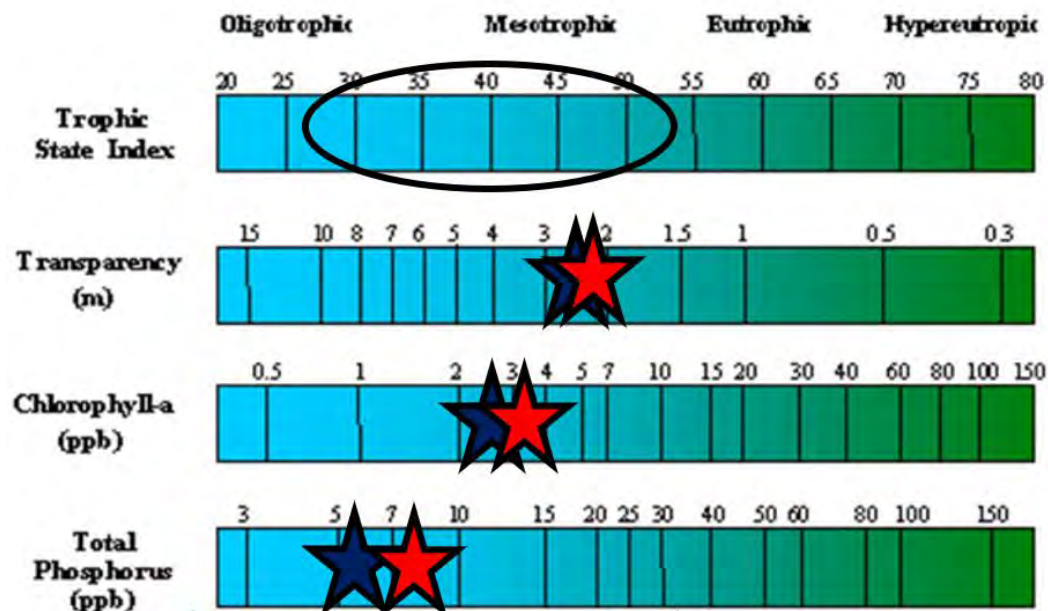


Figure 23: Carlson TSI for lakes, with TSI ranks for SL Lake 1 (red star) and Lake 2 (blue star). Transparency determined using Secchi disk depth. From Carlson (1977).

3.2. Algal Blooms

An algal bloom is the rapid increase and accumulation of microscopic plankton algae (phytoplankton) in water bodies and can be detrimental of ecosystems (Hallegraeff, 2003). Ecosystems have a fragile balance, where biomass is sustained and limited by available nutrients; however, when excess nutrients enter an ecosystem, biomass can expand (Heisler et al., 2008). In waterbodies, excess nutrients allow algae to flourish, exceeding normal densities and assimilating all nutrients. The increased biomass presence causes decreased water transparency – blocking off the depth of which sunlight penetrates a waterbody – and as the algae decay, increased microbial decomposition reduces dissolved oxygen – leading to hypoxic and anoxic conditions (Paerl et al., 2001).

In addition to the detrimental environmental effects, algae blooms can pose a risk to humans and animals if they consist of cyanobacteria. Cyanobacteria, commonly referred to as blue-green algae, can emit toxins into the water, causing serious illness and even death in humans (Lawton and Codd, 1991). Aside from humans, cyanobacteria blooms have also been associated with fish kills (Rodger et al., 1994), and the death of dogs (Backer et al., 2013). Although not all cyanobacteria are toxic, it is important to test each bloom to confirm which strains are present and if toxins are a threat within the waterbody.

For SL, algal blooms have been reported in previous years; however, no bloom was sampled and confirmed during the 2018 field season. Chlorophyll *a* – a proxy for biomass and indicator of potential blooms – remained low throughout the summer and did not spike after fall turnover when nutrients increased. In addition, algal blooms can occur in pockets, and it is possible that a bloom did occur, but not at the sampling sites. Although no algal bloom was detected in 2018, the literature suggests an increase in both size and frequency of algae blooms in the future (Michalak et al., 2013), therefore SL may still experience algae blooms in years to come.

3.3. Pollution

Based on the low nutrient and bacteria concentrations, lack of detectable hydrocarbons and algal blooms, and an oligotrophic-mesotrophic state of the lake, pollution appears to be minimal within SL. Rainfall appears to be the biggest threat to water quality within the lake – affecting the seven inlet streams via bacteria and nutrient levels. Though no effect was observed within the lake during the rainfall events, the continued input from these streams may influence long-term productivity of the lake.

Heavy metals within the lake sediments suggests that some degree of pollution does exist within the lake. Although heavy metals do have natural sources, and the metal concentrations from SL sediment are comparable to nearby sediment in Kejimikujik, concentrations for mercury, arsenic, cadmium, and lead exceed CCME guidelines for aquatic life. The accumulation of heavy metals in SL sediment may be exacerbated by development and atmospheric inputs originating from industry.

As the SL water quality is not heavily affected by human pollution – aside from long-term sediment contamination - it is important to continue monitoring and highlighting changes in water quality within the lake and its inlet streams, to ensure issues are identified and best management practices are applied. In addition, as high metal concentrations have been found within SL sediment, sediment analyses should also be included in long-term monitoring and management plans of SL.

4. Recommendations

The following recommendations are suggested for the SL Water Quality Monitoring Program, based on the 2018 water quality results:

- The SL Water Quality Monitoring Program should continue in 2019 and beyond, as construction of the public access site - and expected increased lake-usage - is expected to continue into future years, and this program was developed to establish a water quality baseline to aid in evidence based decisions concerning the development of the properties acquired by MODL for public use.
 - Sampling of the seven inlet streams should continue during rainfall-dependent events, to determine how rainfall events are affecting inlet streams. Sampling of one lake site during the rainfall-dependent event would also add information regarding how the streams are influencing the lake during rainfall events.
 - The program should consider purchasing a rainfall and water level gauge, to be set up and monitored by volunteers, to provide volunteers greater decision-making tools when trying to capture a rainfall-dependent sampling event.
- The Lake 4 site should be added to the 2019 water quality monitoring program, with a minimum of hydrocarbons being sampled at the location.
- The addition of monitoring hydrocarbons in the sediment of sites Lake 3 and 4 should be considered to track hydrocarbon loading at the lake bottom in areas with projected high traffic and potential high contamination.
- The 2019 stream sediment sample should be obtained from a different inlet stream, to gather more spatial information about nutrient and metal loading from the different streams discharging into the lakes, especially to locate if one stream is contributing excess pollutants and highly influencing lake sediment.
- Fecal bacteria testing should be switched from fecal coliforms to *E. coli*, as *E. coli* is Health Canada's primary indicator of fecal contamination.
- Monitoring of Chl 1 and Chl 2 sites should be ceased, as Lake 1 is close enough to both sites that duplication of sampling should be avoided.
- Monitoring of Lake 1 bottom sediments should be undertaken to determine the levels of phosphorus and metals in bottom sediments.
- Residents of SL should continue to be supplied with laboratory-certified bottles and sampling procedures for the collection of water samples during an algae bloom.
 - There should be emphasis in public education about the SL monitoring program, with increased awareness of what blooms are, how they occur, what they look like, and actions to take in the event of a bloom. Information should be shared with both residents of the lake, and at the public access site for visitors of the lake.
 - Caution should be advised to SL users during the fall, due to fall turnover and high potential for an algal bloom – especially at the Lake 2 site.

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Sherbrooke Lake 2018 Field Season Summary

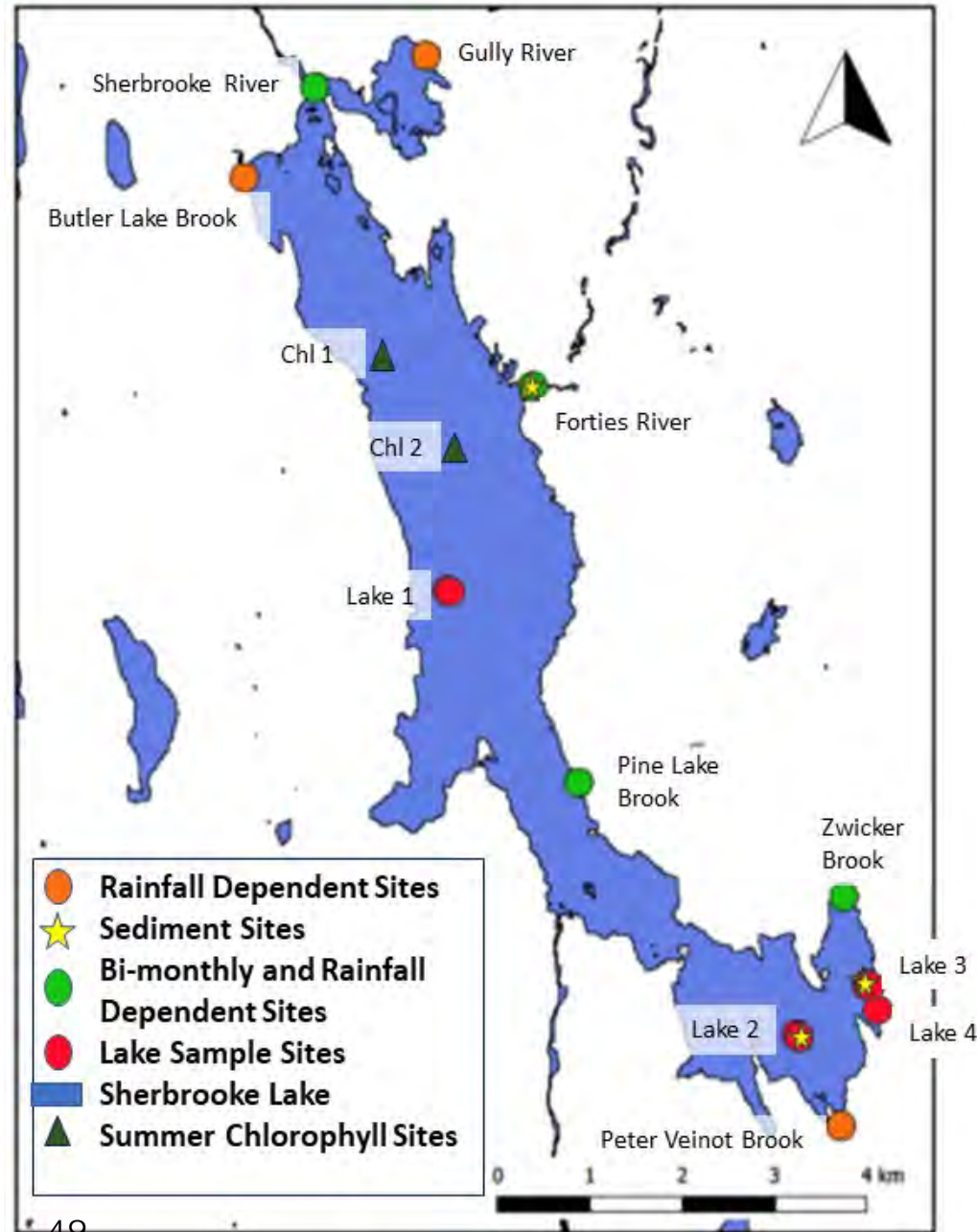


Sherbrooke Lake Stewardship Committee and Coastal Action
March 2019

Purpose and Program Review

To establish a baseline to aid in the evidence-based decisions concerning development of properties acquired by MODL for public use

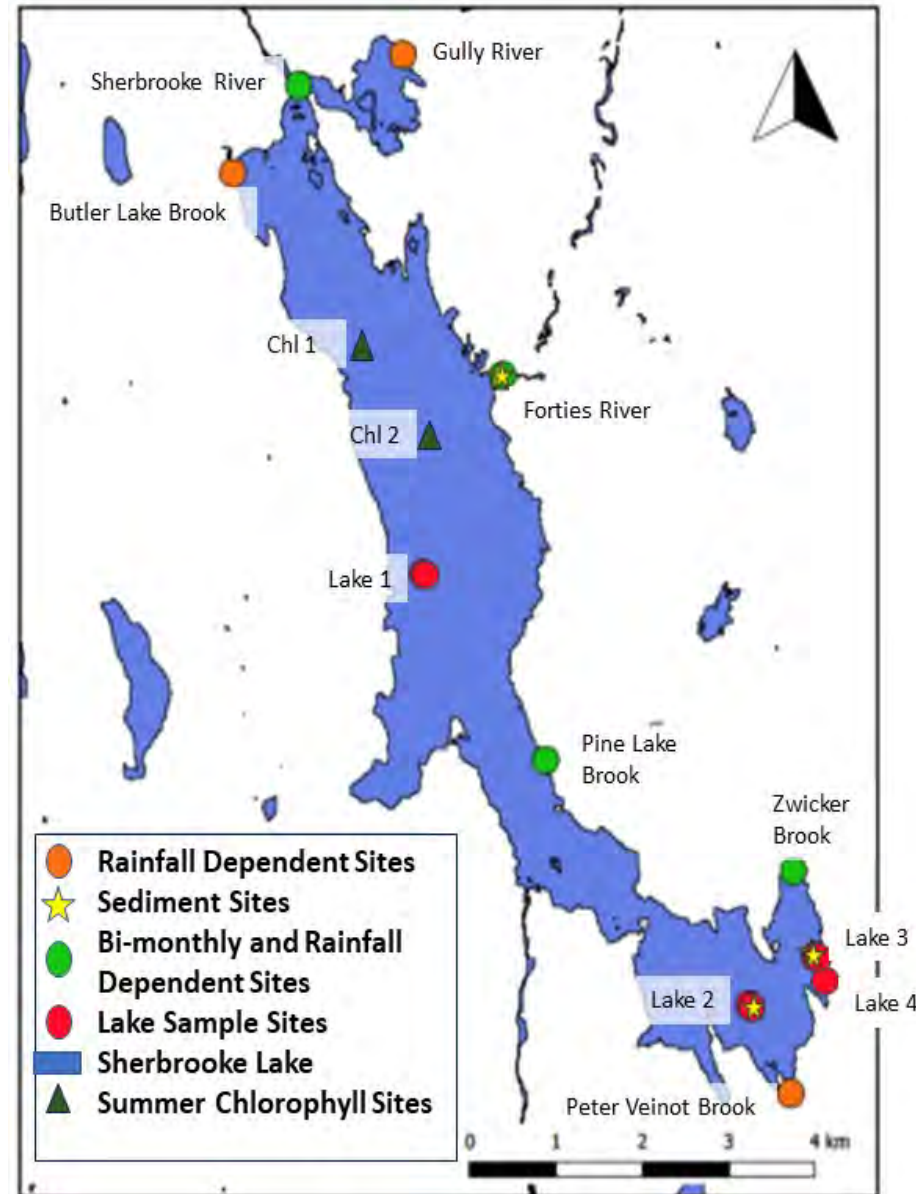
- 2 teams of volunteers for sampling
- 3 (now 4) monthly lake sites
- 2 summer lake chlorophyll A sites
- 4 bimonthly stream sites
- 7 rainfall stream sites
- 3 sediment sites



Water Quality – Nutrients

- Observed higher concentrations of nutrients in inlet streams than lakes – with increases during rainfall events
- Lake 1 did not have a difference in phosphorus and nitrogen surface vs. depth
- Lake 2 saw increased nutrients at depth
- Increased nutrients means that during fall turnover, these nutrients can cause surface enrichment

Enrichment = Bloom

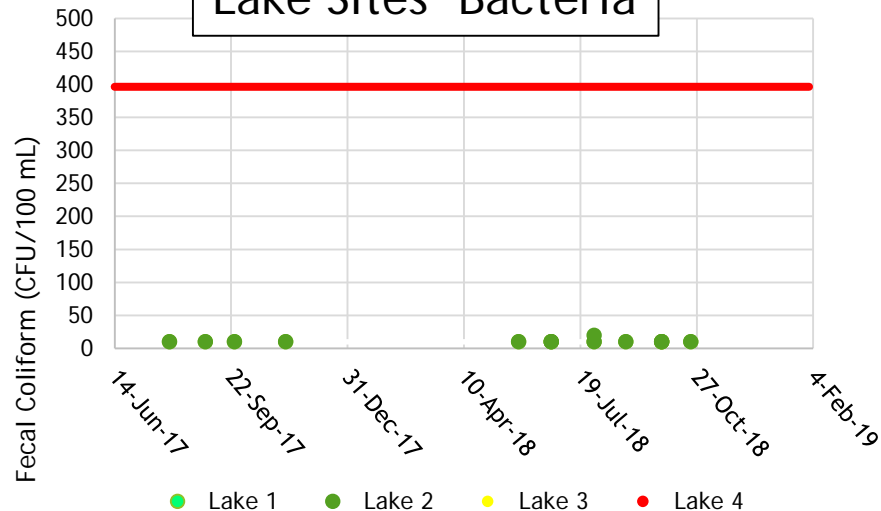


Water Quality –

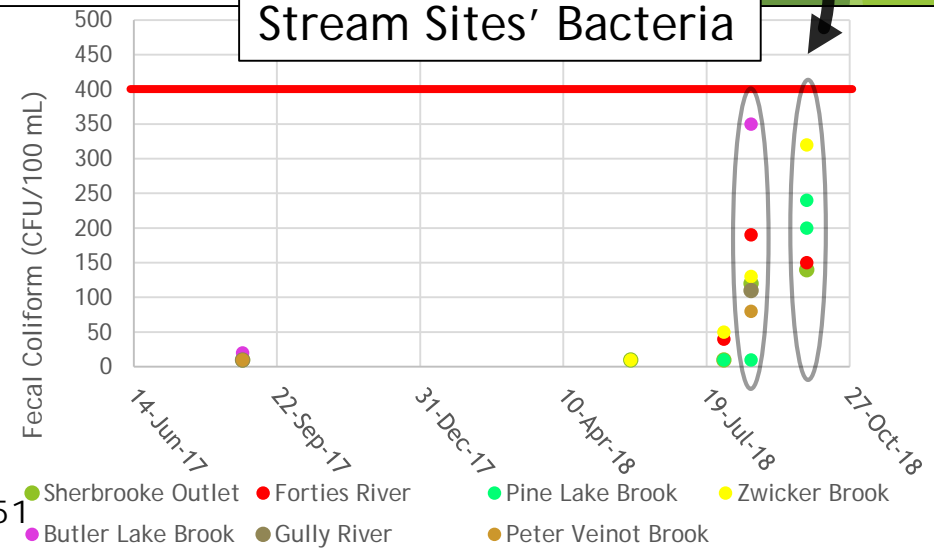
Fecal Bacteria and Hydrocarbons

- No lake site had detectable amounts of hydrocarbons
- No sites never exceeded primary recreational contact guidelines (400 CFU/100 mL - Health Canada)
- Bacteria increased during rainfall at stream sites

Lake Sites' Bacteria



Stream Sites' Bacteria



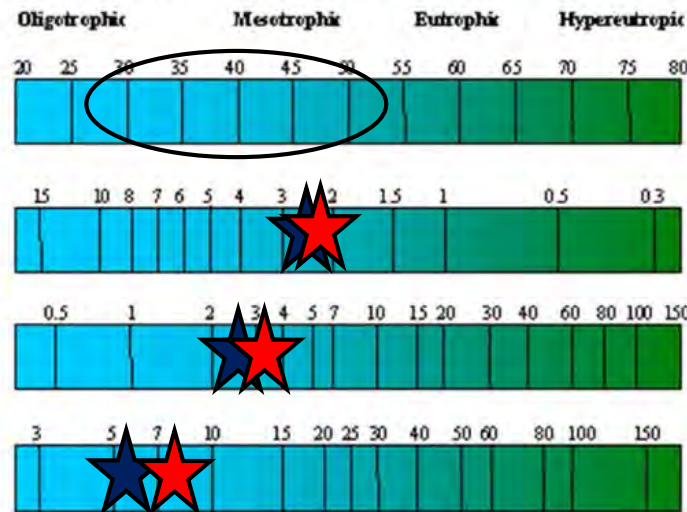
Sediment

- Arsenic and Cadmium problems in lake sediment
- Lead and Mercury a problem at Lake 2
- Sediment may affect aquatic life in future - should be monitored

	UNITS	Lake 2-Sed	Lake 3-Sed	Forties Riv	RDL	ISQG	PEL	NS
2	Metals							
3	Acid Extractable Aluminum (Al)	mg/kg	22000	6700	4300	10		
4	Acid Extractable Antimony (Sb)	mg/kg	ND	ND	ND	2.0		
5	Acid Extractable Arsenic (As)	mg/kg	16	8.3	2.7	2.0	5.9	17
6	Acid Extractable Barium (Ba)	mg/kg	42	26	26	5.0		
7	Acid Extractable Beryllium (Be)	mg/kg	ND	ND	ND	2.0		
8	Acid Extractable Bismuth (Bi)	mg/kg	ND	ND	ND	2.0		
9	Acid Extractable Boron (B)	mg/kg	ND	ND	ND	50		
0	Acid Extractable Cadmium (Cd)	mg/kg	1.0	1.5	ND	0.30	0.6	3.5
1	Acid Extractable Chromium (Cr)	mg/kg	14	4.6	4.7	2.0	37.3	90
2	Acid Extractable Cobalt (Co)	mg/kg	8.8	6.8	2.3	1.0		
3	Acid Extractable Copper (Cu)	mg/kg	15	13	ND	2.0	35.7	197
4	Acid Extractable Iron (Fe)	mg/kg	14000	10000	8300	50		47,766
5	Acid Extractable Lead (Pb)	mg/kg	49	13	3.3	0.50	35	91.3
6	Acid Extractable Lithium (Li)	mg/kg	10	11	20	2.0		
7	Acid Extractable Manganese (Mn)	mg/kg	480	1000	200	2.0		1,100
8	Acid Extractable Mercury (Hg)	mg/kg	0.27	0.16	ND	0.10	0.17	0.486
9	Acid Extractable Molybdenum (Mo)	mg/kg	ND	ND	ND	2.0		
0	Acid Extractable Nickel (Ni)	mg/kg	7.5	5.7	2.3	2.0		75
1	Acid Extractable Phosphorus (P)	mg/kg	1900	400	180	100		
2	Acid Extractable Rubidium (Rb)	mg/kg	6.3	4.7	17	2.0		
3	Acid Extractable Selenium (Se)	mg/kg	1.8	ND	ND	1.0		2
4	Acid Extractable Silver (Ag)	mg/kg	ND	ND	ND	0.50		1
5	Acid Extractable Strontium (Sr)	mg/kg	13	ND	ND	5.0		
6	Acid Extractable Thallium (Tl)	mg/kg	0.26	0.34	0.12	0.10		
7	Acid Extractable Tin (Sn)	mg/kg	3.0	2.0	ND	2.0		
8	Acid Extractable Uranium (U)	mg/kg	5.7	1.7	0.52	0.10		
9	Acid Extractable Vanadium (V)	mg/kg	30	11	11	2.0		
0	Acid Extractable Zinc (Zn)	mg/kg	93	96	20	5.0	123	315
1	Orthophosphate (P)	mg/kg	0.067	0.26	0.33	0.050		

Sherbrooke Lake Trophic State

Carlson Trophic State Index



- Trophic State Index (TSI) used for multi-year comparison of health of lakes
- Sherbrooke is borderline oligotrophic - mesotrophic

★ Lake 1 ★ Lake 2

Carlson, R.E. 1977. A trophic state index for lakes. Limnol. Oceanogr. 22:361-369.

TSI Score	Trophic State	Phosphorus	Chlorophyll A	Secchi Disk
< 40	Oligotrophic	33.3 28.6		
40-50	Mesotrophic		42.3 40.7	48.6 47.38
> 50	Eutrophic			

*Averages used to calculate 2018 TSI; Total Phosphorus, Chl-A in ug/L, SD in m

Stewardship Committee Update

- ▶ 2018 Sampling Program was completed effectively using volunteers as planned, with training and support provided by Coastal Action.
- ▶ A 39 page detailed report has been prepared as well as a two page summary.
- ▶ The 2018 sampling program indicated that the lake is healthy but remains vulnerable to the addition of nutrients and fecal bacteria from its tributaries and increased shoreline development and use.
- ▶ The results support continued development of the public access site consistent with the current development plan.

Stewardship Committee Communications Plan

- ▶ A communications plan has been prepared with the support of Municipal staff. Key elements of the plan are to:
 - ▶ Make the full and summary reports available at the Municipal web sites.
 - ▶ Distribute the summary report via email to the email list of Lake stakeholders developed during Public Access stakeholder outreach process.
 - ▶ Host a public open house.
 - ▶ Post copies of the summary report at selected locations.
- ▶ Council approval is sought to proceed with the implementation of the communications plan and public release of the two reports as submitted.

Stewardship Committee 2019 Budget Proposal

- The requested budget for the 2019 sampling program is \$22,300.

Expenditure	Cost Breakdown	Total Cost
Sediment sampling at 4 sites	\$520.80 per site x 4 sites	\$2,083.20
Nutrient sampling for depth profiles at 2 sites	\$86.15 per site x 2 sites	\$172.30
Rainfall-dependent sampling at 7 inlet streams	\$178.60 per site x 7 sites	\$1,250.20
Potential Cyanobacteria Toxin Testing	\$131.00 per sample X 2 possible events	\$262.00
6 monthly sampling events at 4 lake sites and 4 bi-monthly inlet streams	Inlet streams: \$178.60 per site x 4 sites (+ 2 field replicates for QA/QC) X 3 monthly sampling events Lake sites: 178.60 per site x 3 sites (+ 2 field replicates for QA/QC) Additional bacteria-only lake site: \$51.20 per site x 1 site X 6 monthly sampling events	\$8,880.00
Rain Gauge and Batteries	\$249.99/unit + \$20/batteries	\$269.99
Coastal Action Management	\$100/Meeting, \$250/day for Open House and Volunteer Training, \$250/Day for Report and Booklet, and \$250/day for Project Management	\$6,450.00
	Sub-total	\$19,367.69
	15% HST (HST #: 14067 2106 RT 0001)	\$2,905.15
	Total	\$22,272.84

Stewardship Committee 2019 Budget Proposal

- ▶ As was the case in 2018, the use of volunteers provides a saving of roughly \$9,000. Volunteer input also has the benefit of improving community ownership of the water quality monitoring program and Lake stewardship generally.
- ▶ The Committee is proposing that the program operate essentially as executed in 2018 but with minor changes based on the advice of Coastal Action.
- ▶ The changes will enable the desired and planned compilation of a baseline of water quality data over the 2018 - 2022 period.
- ▶ Council approval is sought for the noted budget in order to proceed with the 2019 program and continued compilation of baseline data.



Council

Item: #10.1

Date: March 26, 2019

Authorization: K. Malloy

Municipality of the District of Lunenburg

March 19, 2019

To Her Worship, Mayor Bolivar-Getson, and Councillors
of the Municipality of the District of Lunenburg

Dear Mayor and Councillors:

The Policy & Strategy Committee in session on Tuesday, March 19, 2019, made the following
recommendations to Council:

1. That Municipal Council approve the Public Participation Strategy as presented.
2. That Municipal Council approves a Sponsorship Ad request from the 7th Annual Burg Classic in the amount of \$250.00, for the bronze level sponsorship, and also donate a Silent Auction item for their community fundraising event taking place March 28 to 31, 2019.
3. That Municipal Council endorse the Lunenburg County Lifestyle Centre Strategic Priorities.
4. That Municipal Council accepts the recommendation of the Board and approves the release of the Lunenburg County Multi-purpose Centre Corporation Board's Request for Proposal to secure a Transition Coordinator, Organization Review & Interim Operations Service.

Respectfully submitted,

Chairman and Members
Policy & Strategy Committee

/jp
Attachments

PUBLIC ENGAGEMENT STRATEGY



Municipality of the District of Lunenburg
modl.ca

TABLE OF CONTENTS

Contents

What is Public Engagement?.....	2
Public Engagement Vision.....	2
Guiding Principles	2
Our Commitment	2
Public Engagement Process	2
Step 3: Select the level of engagement	2
Step 2: Decide whether to engage the community	2
Step 1: Determine the decision to be made	2
Step 4: Engagement Tactics	2
Step 5: Evaluation and reporting	2
ROLES	2
Council.....	2
Staff	2
Community Groups	2
Citizens	2
Summary	2



MODL's Vision Statement

We are a community of communities, each with a unique history representing a diversity of cultural backgrounds and a mix of suburban and rural opportunities. We enjoy healthy lifestyles rooted in unrestricted access to the natural beauty of our region's coastline, lakes and forests, a pristine environment and high-quality community services.

Our caring and tolerant communities, supported by a strong volunteer base, provide a rich mosaic of services to enhance the quality of life in our region offering a lifelong home.

We are a progressive community with a sustainable, diversified economy incorporating both traditional resource-based activities and a spirit of innovation and entrepreneurship that capitalizes on new economic opportunities. Our success is built on a strong work ethic and productive working relationships with our community and regional partners. We are a vital economic and service centre for the region.

MODL's Mission

The Municipality will maximize opportunities for social and economic development while retaining an attractive, sustainable and secure environment for the enjoyment of citizens and visitors. Through responsible and professional leadership and in partnership with others, the Municipality will strive to improve the quality of life for all citizens living and working in the larger community.

What is Public Engagement?

Public engagement is a collection of actions that engage the public in decision-making. The public expects their elected representatives to make informed decisions around potentially competing priorities, issues, needs, or opportunities. Public engagement activities can improve this decision-making process.

At certain times, elected officials and staff will want to seek out and listen to input from citizens and stakeholders from all parts of the community, use this information to enhance their work, and communicate how the input influenced the final decision. However, not every activity or decision of local government can, or should, be the subject of a community-wide conversation.

The Municipality believes that inviting the public to participate in meaningful conversations about decisions that affect them results in better decision-making. In the past, the Municipality has used a variety of methods to inform and engage with the public, including Your Government, Your Ideas meetings, open houses, workshops, committees, surveys, focus groups, newspaper, radio, online, social media and one-on-one communication.

The Municipality recognizes a need to improve our public engagement efforts by engaging citizens earlier in projects, increasing the number of people who participate, developing new channels for distributing information and enhancing our transparency. This Public Engagement Strategy acts as a guide to the public consultation process and creates consistency throughout the organization.

Public Engagement Vision

The Municipality is committed to shaping its future through listening, sharing ideas openly and working collaboratively with a knowledgeable and involved community.

Guiding Principles

- Communicate using the right method and clear language
- Listen to everyone's issues, ideas and concerns
- Offer ways for citizens to inform public policy

The Municipal Government Act

The Municipal Government Act (MGA) establishes a minimum legal requirement for notifying and involving the public about certain kinds of decisions. The Strategy does not replace existing processes legislated by the Municipal Government Act, but guides municipal staff in ways to meet or exceed legislated public engagement requirements.

The purpose of public engagement is to ensure that all voices are heard and considered in the decision-making process. However, it cannot ensure that all stakeholders will be satisfied with our decisions. The public consists of a range of stakeholders holding varying and often competing views on an issue. The Municipality seeks to balance these views and communicate the decisions back so that the public understands how its diverse concerns were considered in the final decision.

Our Commitment

The Municipality commits to:

1. **Inclusivity:** Diversity of opinions is desired, and we will utilize a range of tools to engage diverse subsections of the public.
2. **Early Involvement:** We will involve the public as early as possible and ensure information is available in a timely manner to assist the public in their planning, preparation and engagement.
3. **Respect:** We will be respectful of decision-making protocols and jurisdictions. We will ensure the process is respectful of diverse views, values and interests.
4. **Transparency:** We are committed to the efficient and effective use of taxpayer's dollars, and will clearly define roles, levels of engagement and outcomes of the process.
5. **Continuous Improvement:** We will conduct regular evaluations of our public engagement activities, identifying what is working well, and what areas can be modified or streamlined.

Public Engagement Process

The Municipality manages multiple projects and day-to-day operations that require decision-making. It is not realistic or practical to engage the public on every matter. Our public engagement framework assists the Municipality in defining when and how the public should be engaged.

Many factors determine the level of public engagement required in a process, such as Council priorities, history and context of the issue, and potential impacts of the initiative (e.g., financial, quality of life, health and safety, environmental, lifestyle, etc.).

There are five steps the Municipality undertakes in the public engagement process:

Step 1: Determine the decision to be made

Step 2: Decide whether to engage the community

Step 3: Select the level of engagement

Step 4: Undertake engagement tactics appropriate for the level selected

Step 5: Evaluation and reporting

Step 1: Determine the decision to be made

The decision statement clearly articulates what will be decided, by who, and when. It is a clear statement of the problem to be solved, the opportunity to be explored or the decision to be made. Once a clear decision statement has been developed, we ask:

- What is the role of the public, and how will we use the information they provide to influence the decision?
- What influence will we give the public over the final decision? What influence do they WANT or EXPECT to have over the final decision?
- What does success look like? (variety of views, number of people who provide feedback, quality of feedback)

Step 2: Decide whether to engage the community

Public engagement is recommended in the following cases:

- Public notification and input are REQUIRED by law or for project development according to the Municipal Government Act.
- Council or administration requests public input prior to making the decision.
- The matter under consideration is a known concern of community members.
- The matter under consideration can have a significant impact on community members.
- The matter under consideration may be perceived to decrease property values or increase taxation levels.
- The matter under consideration may be perceived to create or increase any health or safety risk.
- The matter under consideration affects the lifestyle, quality of life or habits of citizens (i.e. loss of access, congestion, restriction of activity).
- The matter under consideration may be an emotional or moral issue for citizens.
- The matter under consideration will affect the natural environment including view, odour or noise.
- The matter under consideration requires trade-offs around core community values (i.e. a proposed business park in a pristine natural environment).
- The matter under consideration has multiple challenges and potential solutions.
- The matter under consideration is historically controversial in the community.

Step 3: Select the level of engagement

Public engagement takes different forms, depending on the potential for public influence on a decision.

Depending on the form of engagement sought, public engagement makes use of a variety of tools and techniques to inform the public, generate public input, and, in some cases, build consensus and reach agreement.

The International Association of Public Engagement (IAP2) designed its Public Engagement Spectrum to assist agencies in establishing and communicating clear expectations regarding the intent of public engagement projects. The Spectrum is organized around the principle that the level of public engagement is directly tied to the level of potential public influence on the decision or action being considered.

Public engagement continuum – level of engagement



The two ends of the spectrum identify extreme potential public influence on the decision to be made. At the Inform level there is no opportunity to influence, so there is no active public engagement effort. At this level, we aim to provide timely, accurate and easy to understand information to the public. The other end of the spectrum, Empower, offers an extreme level of influence that is only infrequently provided to the public. Typically, municipalities are not permitted to hand over their decision-making authority.

The middle three levels are where most public engagement occurs: Consult, Involve, and Collaborate. All three levels have a clearly identified goal, and a clear promise to the public.

INFORM

The Inform level of public engagement does not provide the opportunity for public engagement but provides the public with balanced and objective information needed to understand the Municipality's decision-making process. At the Inform level of public engagement there is no effort to persuade the public in a certain direction. This level requires transparency and accuracy, giving the public what they need to fully understand the project and decision. This will allow the public to reach their own conclusions about the decisions made by the Municipality.

Goal: To keep the public informed.

Promise to the Public: The same as the goal, to keep the public informed.

CONSULT

At the Consult level, the Municipality asks the public for their opinions and considers the input it receives as it makes the decision. Public input is accepted at set points in the process and there is no ongoing opportunity for input.

Goal: To obtain and consider public input.

Promise to the Public: To consider the public input received and to provide feedback as to how that input influenced the decision.

INVOLVE

The Involve level of public engagement is more than a consultation. At the Involve level, the public is invited into the process, usually from the beginning, and is provided multiple or ongoing opportunities for input. However, the Municipality is still the decision-maker and there is no expectation of building consensus or providing the public with high-level influence over the decision.

Goal: To work directly with the public and consider their input throughout the decision-making process.

Promise to the Public: The public will have access to the decision process and decision makers and will be provided the opportunity to give input throughout the process. The public will receive direct feedback on how their input helped to influence the decision.

COLLABORATE

At the Collaborate level, the public is directly engaged in decision-making. Collaborate often includes the stated objective of reaching consensus between all participants. However, as at Involve, the Municipality is still the ultimate decision-maker. The degree to which consensus will be sought and how much decision authority the Municipality is willing to share must be made explicit. In the end, the Municipality will take the input received and make the decision. This is a time-consuming and resource intensive level of public engagement and used sparingly in the Municipality.

Goal: To design a process that allows for effective partnering with the public on all aspects of the decision.

Promise to the Public: The public will be engaged in all key activities and decisions, and their input will be incorporated to the maximum extent possible. Consensus is not always sought at the collaborate level; the degree to which consensus will be sought should be an explicit part of the promise.

EMPOWER

At the Empower level, the Municipality provides the public with the opportunity to make decisions for themselves. The most common activities at this level are public voting or ballots.

Goal: To create a program that allows the public to make an informed decision.

Promise to the Public: The Municipality will implement what the public decides.

When considering which level of public engagement is appropriate, the Municipality considers the following:

Resources	Need for Consensus/Common Purpose	Expectation for Coordinated Action	Expectations for Engagement	Level
Low	Not needed	Not Expected	Low	Inform
Low to Moderate	Low	Low or Not Expected	Low	Consult
Moderate to High	Moderate to High	Moderate to High	Moderate to High	Involve
High	High	High	High	Collaborate
High	High	High	High	Empower

Step 4: Engagement Tactics

Level	Inform	Consult	Involve	Collaborate	Empower
Methods for engagement	Council meetings Municipal Matters Facebook page Newspaper or radio ads Media coverage Flyers/brochures Email lists Website	Your Government, Your Ideas Comment forms Polls/surveys Digital Engagement Focus groups Interviews Open houses Councillor feedback Public hearings	Workshops	Advisory groups Committees	Elections Plebiscites Management Groups

Step 5: Evaluation and reporting

Effective evaluation enables us to improve our public engagement programs and ensure that they are useful, cost-effective, and beneficial. Both the citizens that engaged in the public engagement process, and those who did not, are interested in knowing how a public engagement program impacted policy decisions. Through evaluation, we can determine if meaningful conversations were had, and if those conversations resulted in better decision-making.

Through qualitative and quantitative evaluation tools, each occurrence of public engagement will be evaluated and reported on to the public and Council in a timely manner.

ROLES

Council

Although Council is responsible for municipal decision-making, this responsibility is granted on the understanding that Council will represent the interests and values of the community. Public engagement offers the opportunity for Council members to deepen their role as community representatives.

In the public engagement process, each Council member's role is to:

1. Represent their constituents by staying in touch and working with citizens to determine top priorities for engagement. Options include attendance by Councilors at community meetings and events, providing open office hours for members of the public, and/or maintaining an email contact list of interested citizens.
2. Work with staff to identify areas where public input can and will make a meaningful difference to decisions that council must make, and help set engagement priorities for the Municipality.
3. Help raise the profile of the Municipality's engagement initiatives and input opportunities in order to ensure a high rate of engagement by a wide range of citizens.
4. Direct citizens to the established processes for garnering, monitoring and compiling input, and avoid circumventing these.
5. Allow staff to take the lead role in identifying best practices and methods for engaging the public on various issues.

Staff

It is important to separate the role of Council from that of staff. While Councilors are well positioned to be leaders in communicating with citizens and identifying citizen priorities, municipal staff are well positioned to be leaders in planning, managing and reporting back from engagement initiatives. As trained professionals, staff are responsible for developing and applying professional expertise in the area of civic engagement.

In the public engagement process, the role of municipal staff is to:

1. Work with Council to identify areas and issues where public input can make a meaningful difference to council decisions, program development and service delivery.
2. Establish channels and processes to clearly identify community priorities for engagement and then ensure that the Municipality responds.
3. Establish and communicate on engagement priorities, then apply a consistent set of policies and procedures in designing and implementing engagement activities.
4. Consult with municipal Council, Council Advisory Committees, and stakeholder groups and members re: engagement priorities, process design, framing issues for productive input, effective communications, and increasing engagement over time.
5. Ensure timely and respectful communication with all those who engage, and show how their input has been used to influence decisions, programs and services.
6. Engage in ongoing learning and professional development about public engagement best practices.
7. Evaluate and report on the Municipality's public engagement process at regular intervals.

Community Groups

Public engagement works well when community and stakeholder groups (such as businesses, environmental groups, arts groups, etc.) support civic engagement efforts. In particular, community associations have local knowledge, information and community networks that can be mobilized to make civic engagement meaningful and effective, and they have knowledge of community issues and assets.

Community or stakeholder groups can support public engagement by:

1. Ensuring that their advice and input is representative of a wide range of citizens in their community.
2. Providing advice about community priorities for engagement to municipal staff and Council.
3. Assisting municipal staff in establishing agendas and framing the issues in civic engagement initiatives.
4. Mobilizing their networks and communications tools to support and participate in civic engagement initiatives.
5. Engaging with municipal staff and Council members in a productive and respectful manner.
6. Assisting in communicating the results of civic engagement to local citizens.
7. Supporting municipal efforts to use input received from engagement efforts.

Citizens

Citizens contribute to informed decision-making and the quality of life in their communities by raising their concerns and contributing their ideas and energy to various local initiatives. With this in mind, the recommended role of citizens is to:

1. Help identify community needs, priorities, and assets.
2. Participate in engagement initiatives and encourage others to participate.
3. Express their point of view and contribute their ideas.
4. Be willing to listen to and learn from other community members.
5. Recognize and weigh the trade-offs involved in any policy issue.
6. Support staff in their efforts to involve people in thoughtful discussions and informed decision-making.
7. Respect the efforts of staff and council to make wise decisions.
8. Vote in municipal elections.

Summary

The Municipality believes that those who are affected by a decision have a right to be involved in the decision-making process, and our commitment to open, transparent public engagement supports this belief.

The development of this Strategy relied on both international best practices and local engagement. Feedback from citizens, businesses, community groups, Council, committees and staff were essential in developing a comprehensive Public Engagement Strategy, Citizen Guide and Employee Toolkit. These documents establish clear processes and guidelines to improve and increase public engagement in the decision-making of the Municipality of the District of Lunenburg.



CITIZENS GUIDE to PUBLIC ENGAGEMENT

**with the Municipality
of the District of Lunenburg**



Municipality of the District of Lunenburg
modl.ca



WHAT IS PUBLIC ENGAGEMENT?

Public engagement is a way of gathering input from citizens about community issues. It helps the Municipality make the best decisions for the community.

Public engagement:

- Invites you to participate in decision-making
- Offers you a chance to share concerns and ideas
- Can be online, such as surveys or polls, or shared information
- Can be a face-to-face coffee chat, community meeting, open house or other event

Our community is a better place when citizens are engaged.



WE ARE LISTENING

The Municipality is a community of communities designed to serve you - the people who live and work here. Our goal is

We strive to:

- Communicate using the right method and clear language
- Listen to everyone's issues, ideas and concerns
- Offer ways for citizens to inform public policy

Every time we ask for input we will make sure that:

- You are involved as early as possible
- Everyone has a chance to participate
- Everyone is treated with respect

*"We're
Listening"*

WHY SHOULD I PARTICIPATE?



You know your community best! Citizen participation lets Council know what matters most to your community - it helps build a better community. As a citizen, you can:

- Identify local needs, priorities and assets
- Share your personal ideas and opinions
- Give Council a deeper understanding of the issue
- Get a better idea of how decisions are made
- Understand other citizen's concerns or ideas
- Help shape the future of your community

HOW DO I PARTICIPATE?

You can participate as a citizen and/or as a community group. Community groups include businesses, special interest groups and community associations. Both citizens and community groups have an important role in public engagement activities.



Citizen Roles:

- Listen to other people's ideas and information
- Understand balancing of interests and trade-offs involved in policy issues
- Share community issues, needs and priorities
- Bring a unique point of view and unique ideas
- Provide local knowledge Council may not have

Community Group Roles:

- Represent a wider range of citizens
- Advise on community priorities
- Use networks and communication tools to share public engagement information, events and results
- Help give context to some issues



Some ways you can participate include:

ONLINE

- Facebook page
- Direct email
- Online polls or surveys

IN PERSON

- Feedback forms
- Polls or surveys
- Your Government, Your Ideas meetings
- Focus groups
- Open houses or workshops
- Public hearings
- Steering Committees

THROUGH COUNCILOR

- Elections – use your vote
- Email or call
- Council meeting presentations

COUNCIL, MUNICIPAL STAFF AND PUBLIC ENGAGEMENT

Staff and Council members work together to make public engagement meaningful. Municipal staff manages the public engagement processes and information. Council will listen to public input, and make the final decision.

Council Roles:

- Listen to concerns, ideas and issues
- Help staff identify areas for public engagement
- Encourage and support citizen participation
- Use input to make the best decision possible

Staff Roles:

- Work with Council to decide if, when and how to engage the public
- Make sure everyone's ideas and opinions are heard
- Let participants know how input was used
- Decide what is working well and what needs improvement





WHERE CAN I FIND OUT ABOUT PUBLIC ENGAGEMENT OPPORTUNITIES?

Sometimes the public will be directly notified and asked to respond. You may be asked to fill out a survey or attend a specific meeting. Other times, you will not be notified directly.

All public engagement opportunities are advertised, as follows.

- **ONLINE** - modl.ca/PublicEngagement
- **MEDIA** - Newspaper and radio ads
- **FACEBOOK PAGE** - facebook.com/MODLns



DON'T SEE AN OPPORTUNITY FOR A TOPIC YOU'RE INTERESTED IN?



First, ask your Councilor to see if a public engagement opportunity exists. If it doesn't, you may need to bring it to Council.

You may:

- Attend the public hearing portion of an upcoming Council meeting
- Attend a Policy & Strategy Committee meeting
- Attend a Finance meeting
- Make a presentation at one of these meetings as a community group

HOW WILL MY INPUT BE USED?

Your input and feedback is always welcome!

In some cases, the Municipality is required by law to seek input. Even where input is required, the final decision will always rest with Council.

Council uses public input to make the best decision possible. That may not always be the decision that you or your community group had hoped for.

Remember that:

- Sometimes your input addresses only a part of a decision
- Sometimes other (possibly larger) parts may have already been decided
- Municipalities must consider what is good for all – the best possible decision

Information on decisions and how public input was used can be found online at modl.ca/PublicEngagement, or through your Councilor. Municipal staff may also use the Facebook page and community group contacts to let the public know when engagement reports are posted.





Municipality of the District of Lunenburg

210 Aberdeen Road Bridgewater Nova Scotia Canada B4V 4G8
Phone: 902-543-8181 / Fax: 902-543-7123 / Web Site: www.modl.ca

MEMORANDUM

TO: *Policy and Strategy Committee*

FROM: Tissy Bolivar
Recreation Program Coordinator

DATE: March 14, 2019

RE: Sponsorship Ad The 7th Annual Burg Classic Hockey Tournament March 28-31, 2019
c.c. Trudy Payne, Director of Recreation Services

RECOMMENDATION

That the *Policy and Strategy Committee* recommend to Council, that Municipal Council approve the sponsorship ad request of the **The 7th Annual Burg Classic** for **\$250.00**, for the "Bronze" level sponsorship, and also donate a Silent Auction item for their community fundraising event taking place March 28 – March 31, 2019.

Motion Required

BACKGROUND

Seven years ago, a group of motivated members of the community got together to reinstate a men's hockey tournament and social event in Lunenburg. Starting with 4, the BURG Classic now hosts between 18-20 teams annually. The weekend features a pub night, community dance, silent auction, various rink games, family skate and other fund-raising efforts.

Last year's tournament raised over \$30,000, with 100% of the proceeds being donated to local causes and multiple local organizations.

With a focus on bringing the local community together, the BURG Classic aims to help deserving locals who have suffered life-changing situations or are undergoing life-changing hardships. The event features hockey teams from all over Nova Scotia and is supported by sponsors across the province as well.

"Bronze" level of sponsorship includes:

- Our logo will be displayed on Bronze level sponsor board during the tournament
- Our logo will be included on a sponsor feature on the event Facebook page, highlighting Bronze designation
- A 1/8-page ad in the tournament brochure

- Verbal recognition as a Bronze sponsor throughout the tournament, the two championship games and the dance.

We have not sponsored this event in the past.

BUDGET IMPLICATIONS

There are sufficient funds in the Sponsorship Ad Grant account (current balance \$268.93).



Tissy Bolivar

TB/sc

Enclosure – Sponsorship Information

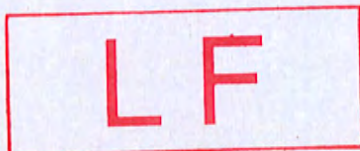


The 7th Annual Burg Classic Community Fundraising Event

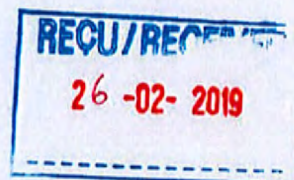
Tournament Committee 2019

*Community.
Support.
Respect.*

January 30, 2019



Carolyn Bolivar-Getson
Mayor, Municipality of the
District of Lunenburg, N.S.



Dear Mayor:

This year will be the seventh annual Burg Classic Community Fundraising Event. The tournament has raised over \$100 000 since it began in 2012 and many local recipients have and will benefit from a weekend of hockey, silent auctions, 50/50 draws, family skate, and a dance on Saturday night. This most worthy event has received outstanding support from the players, the people that show up in the arena, the many volunteers, local businesses, and personal donations. We hope to have 18 to 20 teams register this year and the over thirty plus games will be played in the Lunenburg Arena on Thursday March 28 to Sunday March 31.

We are hoping you can help us maximise the funds we raise for our local recipients by giving us a donation towards this most worthy cause.

This event has evolved into a tournament that not only raises essential funds for local people in need, it also brings our community together for an outstanding common cause. We hope the Municipality is able to help us by providing some reduction in our tournament costs.

Hope to see you at the arena.

Sincerely,

Jayme Niford
Tournament Chairperson
Jayme.niford@bird.ca
902-877-8262

January 20th, 2019

**RE: The BURG Classic Community Fundraising Event
Sponsorship Request**



Dear Business Owner or Manager,

Seven years ago, a group of motivated members of the community got together to reinstate a men's hockey tournament and social event in Lunenburg. Starting with 4, the BURG Classic now hosts between 18-20 teams annually. The weekend features a pub night, community dance, silent auction, various rink games, family skate and other fund-raising efforts. We invite your business to play a role in the success of this year's community event. The tournament is taking place March 28 – March 31, 2019.

Last year's tournament raised over \$30,000, with 100% of the proceeds being donated to local causes and multiple local organizations.

With a focus on bringing the local community together, the BURG Classic aims to help deserving locals who have suffered life-changing situations or are undergoing life-changing hardships. The event features hockey teams from all over Nova Scotia and is supported by sponsors across the province as well.

Donations from businesses and organizations play a vital role in raising funds for these causes. We are hopeful that you will support this event by making a donation or by offering an item for the silent auction. The value of your donation is at your discretion; every contribution helps.

By entering into this partnership, your business will receive recognition and advertising during the event, which will include your business name and a sincere thank you on event advertisements. All silent auction items will be accompanied by the name of your business and a description of the auction item available, which will be displayed at the arena entrance during the four-day event. Your donation will also demonstrate your commitment to give back to those who need it most.

Thank you for your time, and we hope to hear from you soon.

Sincerely,

Jayme Niford
BURG Classic Fundraising Committee
Jayme.niford@bird.ca
902-877-8262

SPONSORSHIP OPPORTUNITIES



Thank you for supporting the 2019 BURG Classic charity hockey tournament. Donations to the BURG Classic are in direct support of the community, and will be accepted as financial or in-kind. A company or organization donating in-kind will receive sponsorship benefits based on the value of its donation.

PLATINUM: \$1,500 and above

Platinum Sponsorship provides the highest level of recognition throughout the weekend and in the weeks leading to the event, and offers your company exclusive category rights.

Benefits:

- Game sponsor for (2) championship games
- Your logo displayed on Platinum level sponsor board during the tournament
- Your company or organization displayed as Platinum level sponsor during the dance
- An exclusive sponsor feature on the event Facebook page
- A full-page ad in the tournament brochure
- Advertising space in the arena for up to two (2) promotional banners or posters
- Verbal recognition as a Platinum sponsor throughout the tournament, during all playoff, championship, and at the dance

GOLD: \$750 - \$1499

Gold Sponsorship is an excellent option for those companies or organizations looking for a high level of publicity and verbal recognition prior to and during the event.

Benefits:

- Game sponsor for two (2) playoff games
- Your logo displayed on Gold level sponsor board during the tournament
- Your company or organization displayed as Gold level sponsor during the dance
- Your logo included on a sponsor feature on the event Facebook page, highlighting Gold designation
- A ½ page ad in the tournament brochure
- Advertising space in the arena for one (1) promotional banners or posters
- Verbal recognition as a Gold level sponsor throughout the tournament, during the 2 championship games, and at the dance

SILVER: \$500 - \$749

Becoming a Silver sponsor enables you, your business or organization to be recognized as a key contributor to the BURG Classic charity hockey tournament.

Benefits:

- Your logo displayed on Silver level sponsor board during the tournament
- Your company or organization displayed as Silver level sponsor during the dance
- Your logo included on a sponsor feature on the event Facebook page, highlighting Silver designation
- A ¼ page ad in the tournament brochure
- Verbal recognition as a Silver level sponsor throughout the tournament, during the 2 championship games, and at the dance

BRONZE \$250 - \$499

The Bronze Sponsorship level is a great way for individuals or small businesses or organizations to contribute to the community via this fantastic fundraiser.

Benefits:

- Your logo displayed on Bronze level sponsor board during the tournament
- Your logo included on a sponsor feature on the event Facebook page, highlighting Bronze designation
- A 1/8 page ad in the tournament brochure
- Verbal recognition as a Bronze sponsor throughout the tournament, during the 2 championship games, and at the dance

SILENT AUCTION (Friend of the BURG)

We are seeking items for this year's silent auction. As noted, all silent auction items will require the donor to indicate the item's monetary value. The donor will receive the sponsorship level corresponding to the value of the item(s) donated.

Benefits:

- Your name, or the name and logo of your business and organization, will be presented alongside your item during the silent auction, taking place at the arena throughout the weekend.
- If your item is valued at less than \$150, your name featured as a Friend of the BURG in the tournament brochure.

If you intend to donate or sponsor this event, please contact the Committee no later than March 18, 2019. All donations must be received by March 22, 2019.

RECENT FUND RECIPIENTS



Jennifer Collins

In February 2009, Jennifer Collins faced a life altering accident that broke her C4-C5 vertebrae's leaving her paralyzed from the neck down. Jennifer needs support to help cover ongoing physiotherapy and day-to-day full-time care costs.

Connor Hirtle

Connor Hirtle, a 23-year-old from Dublin Shore, who was left an ASIA B Incomplete Quadriplegic following a swimming accident in July of 2015.

Rob Edwards

He is a young father suffering a crippling kidney disease, undergone dialysis six times daily awaiting a kidney transplant. With him unable to work, and his wife running her own business, every donation helped make a difficult situation a little bit more manageable.

Jeff Lilly

On December 16, 2016 we lost a player, referee, and close friend of the BURG Classic to his battle with Leukemia. A member of the Lunenburg hockey community, Jeff's loss will be felt immensely during the BURG Classic and year-round. The BURG presents the Lilly Nation Award yearly to honour Jeff's contributions to the tournament — given to a participant or supporter demonstrating true positive spirit and high integrity throughout the event.

Cole Tanner

Cole Tanner, a 20-year-old from Lunenburg NS, who has been diagnosed with Hodgkin Lymphoma. In addition to ongoing medical expenses, Cole had a period where he was unable to maintain employment and required support to help him through a difficult time.

Curt Mossman

Curt Mossman, a BURG Classic regular, playing with the Schooners throughout the tournament's existence. In January 2017, Curt suffered a stroke and he is currently in the South Shore Regional hospital recovering. Both he and his wife are self-employed, and they faced the challenge of balancing the business with this unforeseen circumstance.

Local Mahone Bay Woman

On December 19, 2016, she fell and struck her head on the edge of a wall, suffering a serious concussion. She was currently unable to work or drive and was only capable of minimal computer use. She did not qualify for medical leave benefits, and required help with cost-of-living expenses and physical therapy.

Chad Wiseman

Chad Wiseman, a former Lunenburg resident, father of two and grandfather to one, undergoing treatment for acute myeloid leukemia in Vancouver since December 2016. A veteran and 15-year member of the Lunenburg Fire Department, Chad has close ties to the community and a long road to recovery.

Family of Linnea Veinotte

Linnea Veinotte's life was taken tragically following a hit and run incident in the country of Grenada, where her family had moved for Linnea to pursue her career as a professor at St. George's University. The family has incurred various costs, including substantial travel costs, throughout this challenging time.



Council

Item: #10.1.3

Date: March 26, 2019

Authorization: K. Malloy

Municipality of the District of Lunenburg

210 Aberdeen Road Bridgewater Nova Scotia Canada B4V 4G8
Phone: 902-543-8181 / Fax: 902-543-7123 / Web Site: www.modl.ca

MEMORANDUM

TO: Mayor Carolyn Bolivar-Getson and Councillors
Municipality of the District of Lunenburg

Mayor David Mitchell and Councillors
Town of Bridgewater

FROM: Alex Dumaresq, Deputy CAO

DATE: March 14, 2019

RE: **LCMPCC Strategic Priorities – 18th Month Plan**

The Board of the Lunenburg County Multi-purpose Centre Corporation, at their meeting on Wednesday, March 13, 2019, finalized their strategic priorities for 2019-2020 and made a motion to refer them to the respective Councils for review and feedback. Your feedback is requested to ensure the strategic priorities developed align with your Council's thoughts for the next 18 months.

Please review the attached strategic priorities and provide your feedback on same.

Alex Dumaresq
Deputy CAO

/sac
Attachment

c.c. Tammy Crowder, CAO, Town of Bridgewater

LUNEBURG COUNTY LIFESTYLE CENTRE BOARD
STRATEGIC PLANNING SESSION - FEBRUARY 12, 2019

VISION STATEMENT REVISED

The following were terms used by those in attendance to describe their vision

- Healthy lifestyle
- Active Living
- Inclusiveness
- Regional Partnerships
- Regional Partnerships
- Focal Point of Region/Hub
- Economic
- Business Opportunities
- Welcoming
- Adaptive Program
- Financial / Sustainability

REVISED Vision Statement

LCLC contributes to the economic success of our region and provides and promotes cultural, and recreational activities through efficient, sustainable and inclusive programming and infrastructure.

Long Term Success

- Community sees LCLC as Hub
- Facility being used to its full potential
- Negative image gone
- MODL/TOB are the LCLC Board- united vision, together on this
- Public endorsement of vision, goals, objectives
- Taxpayers of all ages- using it
- Maintain control of expenditures
- Providing high level of service, operating in a fiscally responsible manner
- Those *benefiting* from LCLC success are also *contributing* to the economic success of the region through sponsorships, advertising etc.
- Operational deficit that both Council's support - we change the language re: How we talk about LCLC.
- Change in recreation service delivery- operated through a central facility.
- Positive promotion of facility
- Community input mechanism
- Asset Management Plan

18 months out- What does Success look like?

- Improved / strengthened profile
- Maintain control of expenditures
- Board has good understanding and trust in budget
- Board confident that LCLC is operating in a fiscally responsible manner
- Negative image of facility is gone
- Public endorsement of vision, goals object
- Investment in active living
- Change in recreation program service delivery to a regional delivery system
- Positive promotion of facility
- Community input mechanism

Keys to Success

Affordability ~ Programming ~ Welcoming ~ Efficiency ~ Innovation ~ Maximization

WHAT WILL WE DO OVER THE NEXT 18 MONTHS (LISTED BY PRIORITY)

PRIORITY	OUTCOME	ACTION
#1A	Need to Understand Budget and Operation <ul style="list-style-type: none"> • <i>Unit Costing on Budget</i> • <i>Organizational/Efficiency Review of Existing Operations</i> • <i>Assess opportunities for regional recreation integration</i> • <i>Policy development</i> <ul style="list-style-type: none"> ◦ <i>Capital investment</i> ◦ <i>Salary scales</i> <p>Focus is to enhance recreation service throughout the region.</p>	1. Unit costing on budget – scope of work 2. Engage a Transition Coordinator <ul style="list-style-type: none"> • Scope of Work to Board – Feb 21 • Proposal to Council's – March 4 /5 • Recruitment- Engagement- April • Completed Report – August 2019 3. Apply for funding for Transition Coordinator from DMA and CCH (March/April) 4. Develop Communications Plan for both internal and external audiences (March) 5. 2019 Budget - use existing operating grant figure
#1B	Existing Operations Arrangement by MODL not sustainable.	Identify options to bring in a temporary manager - Feb 21/19 <ul style="list-style-type: none"> A. Contract Company B. Contract Person C. Secondment of Trudy

PRIORITY	OUTCOME	ACTIONS
#2	Host more events	<u>Develop Events Policy</u> <ul style="list-style-type: none"> • Thresholds for staff authorization • Off season priority • ID Risks tolerance • Types of events to attract • Best Practices- research • Targets • Demographics etc.
#3	Positive promotion of LCLC <ul style="list-style-type: none"> • <i>Will increase awareness</i> • <i>Increase membership</i> • <i>Increase users</i> • <i>Increase support</i> • <i>Increase customer service orientation</i> 	<u>Create a short-term marketing plan</u> <ul style="list-style-type: none"> • Key audience <ul style="list-style-type: none"> ◦ Facility users ◦ Taxpayers ◦ Visitors ◦ Neighbouring communities • Good news stories in newspapers • Wayfinding

PRIORITY	OUTCOME	ACTIONS
#4	Increase usage and members, and offerings in the facility through partnerships	<u>Develop Strategic Partnerships</u> <ul style="list-style-type: none"> • Fitness Centres/Facilities <ul style="list-style-type: none"> ◦ 902; Lyons Den; YMCA • Queens Place • Concessions - look at new models • Other recreation facilities • Farmers Market • Charities
#5	Have Community Engagement in the facility	<u>Community Input Mechanism</u> <ul style="list-style-type: none"> • Open houses- free swim and skate • Survey of users and members • "Try it" passes • Webpage Overhaul • Suggestion box
#6	Increase revenues from sponsorship and fundraising	<u>Sponsorship/ Fundraising- opportunities</u> <ul style="list-style-type: none"> • Determine & Define areas for advertising • Determine corporate sponsorship packages • Capital fundraising campaign
#7	Increase usage of entire facility	<u>Develop a Facility Usage Strategy</u> <ul style="list-style-type: none"> • Assess usage of different spaces: <ul style="list-style-type: none"> ◦ Active Living; meeting room • Make the facility a destination • Look at options to either repurpose room . Spaces based on usage • Link to advertising the meeting space for corporate training events.
#8	Increase membership	<u>Develop a Membership Strategy</u> <ul style="list-style-type: none"> • Understanding Memberships • Survey (member and Non-member) • Renewal of memberships • Review of LCLC members benefits and discounts. • Market analysis for membership in the region



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MEMORANDUM

TO: Mayor Carolyn Bolivar-Getson and Councillors
Municipality of the District of Lunenburg

Mayor David Mitchell and Councillors
Town of Bridgewater

FROM: Alex Dumaresq, Deputy CAO

DATE: March 14, 2019

RE: **Recommendation – RFP re Transition Coordinator, Organization Review & Interim Operations**

The Board of the Lunenburg County Multi-purpose Centre Corporation, at their meeting on Wednesday, March 13, 2019, reviewed a draft Request for Proposal for a Transition Coordinator, Organization Review and Interim Operations.

The Board made a motion recommending to the two respective Councils that the Councils approve going to RFP for the work outlined in the proposal for the Transition Coordinator, Organization Review and Interim Operations.

Please consider this recommendation and advise the Board of your decision.

Alex Dumaresq
Deputy CAO

/sac
Attachment

c.c. Tammy Crowder, CAO, Town of Bridgewater

TRANSITION CORDINATOR/ORGANZIATON REVIEW/ INTERIM OPERATIONS

The Town of Bridgewater and the Municipality of the District of Lunenburg jointly constructed the Lunenburg County Lifestyle Centre (LCLC) in _____. To do so the Lunenburg County Lifestyle Centre Corporation was established as a separate corporation to develop and operate the LCLC. Recently the management of the facility has been assumed by the municipal units in a desire to integrate recreation program delivery regionally. Over the next 12 months the LCLC Board will be assessing how best to manage/operate the LCLC and deliver regional recreation programming through the LCLC.

The LCLC Board is Looking for an individual or firm to :

- a) Lead the LCLC through a transition to management by the Municipal Units and a transition to a regional recreation program delivery model delivered from the LCLC facility.
- b) Take on the day to day management of the LCLC in the interim while the Transition Plan is being developed and implemented. It is anticipated that the term of this engagement will be 12 months.

SCOPE OF WORK

Proponents are asked to submit a proposal that addresses the following Scope of Work. It is recognized that some proponents may have the skill set for some but not all of the Scope. Consequently, Proponents may bid on the entire Scope (subsection 2.1, 2.2 , 2.3) or one of more of the subsections. Each subsection and subsequent award will be evaluated separately. The Municipality may award the scope in its entirety or partially, as deemed to be in its best interested.

2.1 Review of LCLC's Operating and Capital Budget Structure

- a) Restructuring of Operating and Capital Budget in a manner that enable operator and Board to fully understand costs associated with each component of the facility and the impact of decisions respecting programs and service delivery on the same. One such option is unit costing / baseline budgeting.
- b) Organizational Review
 - i) Organizational review of organization with recommendations as to how to restructure to achieve efficiencies be effective in-service delivery .
 - ii) Review of Operations and Processes with recommendations for change to improve efficiencies

2.2 Opportunities for Regional Recreation Program Integration

- i) Assess opportunities for regional recreation programming integration between MODL, TOB and LCLC
- ii) Develop and implement a Plan for the transitioning of program and facility rentals from MODL and TOB to the LCLC. This will involve at a minimum:
 - a. Working with existing municipal recreation staff and LCLC staff
 - b. Understanding best practices in program delivery
 - c. Implementing the principles of change management.
 - d. Assessing resources needs and the recommended organization structure best suited to meet the needs.
 - e. Development of processes to improve efficiencies
 - f. Selecting and implementing a software program that facilitates program, facility and event registration.

iv) Policy development on matters pertaining to processes, and Human Resources

The Transition Coordinator shall report to the Chief Administrative Officers of the Town of Bridgewater and the Municipality of the District of Lunenburg. There will be a requirement to present to the Board.

2.3 Interim Operations Management

The Interim day to day management of LCLC operations shall include:

- 1) Overseeing Human Resource matters, such as scheduling, performance management, discipline, Occupational Health and Safety etc.
- 2) Implementation of the operating and capital budget / business plan and reporting on the same
- 3) Working within the Policies established by the Board
- 4) Policy development for the Board
- 5) Reporting to the Board
- 6) Internal communications
- 7) Communications to the users and general public respecting services
- 8) Assisting the development of a Capital Asset Condition Assessment; Asset Management Program to assist in long term capital planning and reserve planning
- 9) Assisting in the development of operating and capital budgets.
- 10) Hosting of special events in cooperation with event organizers (concerts, home shows, etc)

Competencies and Skills

The individual or firm must be able to demonstrate the following:

- Experience working with a Board or equivalent
- Understanding of organizational structures, accountability models, decision making models
- Knowledge of financial tools such as budgets and business plans
- Management experience with facilities or organizations
- Change management skills

- Excellent Communication Skills, written and oral
- Proven Leadership skill



Municipality of the District of Lunenburg

12 March 2019

To Her Worship, Mayor Bolivar-Getson, and Councillors
of the Municipality of the District of Lunenburg

Dear Mayor and Councillors:

The Fire and Emergency Services Committee in session on Monday 11th March 2019, made the following recommendation to Council:

That Municipal Council approve the Group Personnel Insurance Project Plan as submitted below:

PROJECT PLAN

The Insurance subcommittee is recommending the following steps to engage the municipality and fire service and to secure a common personnel insurance program for all volunteer fire fighters regardless of department. The proposed steps are as follows:

- Established Insurance Sub-committee (complete)
- Secure consultant to develop and evaluate RFP for Brokerage Services (complete)
- FESC to approve project plan (complete)
- FESC request Council's approval of project plan
- Consult with Fire Service on Project plan (AGM April 10, 2019)
- Post RFP solicit bids and & evaluate submissions
- FESC recommendation & Council Award of brokerage contract
- Broker develops proposed insurance package
- FESC Recommendation to Council on cost allocation
- Fire Department consultation & vote for approval
- Council award and implementation of standardized Insurance

Respectfully submitted,

Chairman and Members
Fire & Emergency Services Committee

CK/sc



Municipality of the District of Lunenburg

REQUEST FOR A DECISION

REPORT TO: Municipal Council

SUBMITTED BY: Elana Wentzell, CMA, CPA

DATE: March 26, 2019

RE: Defined Benefit Pension Plan Options

RECOMMENDATION

Move that Municipal Council accept the motion of the Pension Committee to gather more information on the possible transfer of the Municipal Pension Plan to the Public Service Superannuation Plan.

BACKGROUND

The Defined Benefit pension plan was closed to new members in June 25, 2013. A defined contribution plan was opened for employees hired after that date.

Municipal Council approved a new compensation schedule for staff in October 2018. Concerns were raised regarding the two separate pay scales used in the organization due to the differences in the two pension plans (a 6% differential). In order to address these concerns, Council approved an actuarial review of two items:

1. Cost to enter the Public Service Superannuation Plan (PSSP) – a defined benefit pension plan.
2. Plan amendments that would replace the 6% forgone salary of DB plan members

The actuarial review was completed and taken to the Pension Committee on January 8, 2019. The Committee determined that exploring a possible transfer to the PSSP should be investigated further.

On January 10 and January 12, 2019 employee information sessions were held to inform staff on some of the differences between the MODL DB Plan and the PSSP. Many questions came out of these meetings. Municipal staff strived to answer these questions by doing research and meeting with the staff of the PSSP.

A timeline and a frequently asked questions information sheet was developed.

On March 21, 2019 a Pension Committee meeting was held to review these findings. The Committee determined that more information was required which would now involve additional actuary costs as well as hiring legal counsel with pension specialization.

OPTIONS

The Committee believes that the PSSP transfer requires further investigation. If Council agrees, additional costs will be incurred.

BUDGET CONSIDERATIONS

An estimate for these additional costs could be upwards of \$100,000 and can be funded through existing pension reserves which total \$876,356.

CONCLUSION

The Pension Committee believes that further investigation is required. There will be additional costs involved for which existing reserves can be utilized.

Department: Finance and Administration

Report Prepared By: Elana Wentzell

Date: Mar 21, 2019

Report Approved By: _____

Date _____

Reviewed By CAO: _____

Date _____