**QUÉBEC/VERMONT MEMPHREMAGOG STEERING COMMITTEE**

**HYBRID MEETING (IN PRESENCE AND VIRTUAL)**

**NOVEMBER 10TH 2022**

**SHERBROOKE UNIVERSITY AND TEAMS**

**Attendants :**

Robert Benoit, MCI

Marylin Bédard-Fontaine, Ville de Sherbrooke

Sébastien Bourget, MELCC

Douglas Casson Coutts, MWA and MCI

Ben Copans, VT DEC

Sarah Damsell, NACD | USDA-NRCS

Pete Emerson, VT FWD

Jean-Pierre Fortier, Ville de Sherbrooke

Steve Garceau, MFFP

Mary Pat Golding, MWA

Julie Grenier, COGESAF

Céline Guéguen, Université de Sherbrooke

Patrick Hurley, MWA

Pete Laflamme, VT DEC

David Largy-Nadeau, MRC Memphrémagog

Steve Turgeon, MELCCFP

Sophie Moffatt-Bergeron, MELCCFP

Ariane Orjikh, MCI

Guy Parenteau, MELCCFP

Oliver Pierson, VT DEC

Nathalie Provost, MELCCFP

Gilles Bélanger, député d’Orford

Marie-Josée Cornay, bur. Député Gilles Bélanger

Roxanne Tremblay, MCI

Beth Torpey, MWA

Karen Freeman, VHCB

Meg Carter, Northwoods stewardship center

Pete Stangel, Vermont DEC & NEIWPCC

Rebecca Ellis, office of US Senator Welch

Bevin Barber-Campbell, MWA

Wyatt Westover, bur. Députée Pascal St-Onge

Amy Polaczyk, VT DEC

Sarah Damsell, Orleans, NRCD

Daniel Tremblay, MELCCFP

1. **Mot d’ouverture**

Nathalie Provost, co-president, greeted participants.

1. **Agenda adoption**

The agenda for the meeting was adopted

1. **Adoption of last meeting’s minutes**

The minutes from last meeting were adopted.

1. **Round table**

Participants were invited to present their organisations developments and actions since last meeting.

* **Pete Laflamme:** PFAS topic is still ongoing and will be presented in another point at the agenda. Senator Leahy secured more funding for Vermont lakes before retiring from office.
* **Pete Emerson:** The changes in Quebec regulation resulted in a better season in term of salmon populations. A 500 000$ grant has been conferred to make sure that more projects can be implemented and more staff can be hired. A budget increase is expected to put in place more research project on brown bullhead.
* **Oliver Pierson:** Water quality data of the lake will be presented in a further point at the agenda. A more restrictive regulation is presently being studied regarding use of wake boats for all of Vermont’s inland lakes. This excludes lakes Champlain and Memphremagog. More details will be presented at the next meeting.
* **Patrick Hurley:** MWA is working on many projects such as water quality assessments in the field, a planning tool, repairing corridors and streams, and stormwater projects.
* **Karen Freeman:** Northwoods center should receive more funding to implement more projects in the next few years.
* **Ariane Orjikh:** For 2022 summer, 4 more biologists joined the MCI team for sampling and monitoring efforts. MCI continues its collaboration with private owners to implement conservation projects and worked with the city of Magog on its conservation plans. Johanne Lavoie is the new MCI president.
* **Steve Garceau:** New regulations regarding fishing limits for different species is now in place. This regulation reflects Vermont’s and with a fish stock protection goal. Project on lake trout stock increase is ongoing. Participation on different work committees like the impact evaluation of the Eurasian watermilfoil, coordination for the zebra mussel efforts and an intervention plan regrading this specie for St-François River watershed. Finally, the management of aquatic invasive species elimination by permit and authorization issuing.
* **Jean-Pierre Fortier:** Zebra mussel is causing difficulties in the City of Sherbrooke water intake installations. Chlorine treatment of the pipe and reservoir has proven to be efficient. Studies are ongoing to replace chlorine with a less toxic product. The city is also collaborating on many sampling and monitoring efforts made by various partners.
* **Sébastien Bourget:** The ministry of environment continues is monitoring of the lake program in 10 stations in the lake, 4 times a year between June and August. One of this station is more closely followed with the witness lakes program. The MCI is in charge of the samplings for this monitoring.
* **David Largy-Nadeau:** The MRC of Memphremagog is continuing is monitoring efforts of the lake tributaries. It has been less active on the zebra mussel topic. A presentation on the rivers and water bodies plan is to be presented on next meeting.
* **City of Magog** (by David Largy-Nadeau): The city is active in many water quality topics. It does municipal beaches surveillance, is collaborating on castel creek sediment project and on the academic research project at the cherry marsh. It also is working on a wetland conservation plan.

1. **Update on Phosphorus, Aquatic Invasive Species and Cyanobacterial blooms Monitoring**

Ariane Orjikh

* For zebra mussels 19 sites were monitored in 2022, 164 sites since 2018;
* Spectacular increase for zebra mussels were detected (between 3382% and 112 676% increase compared to 2021);
* Zebra mussels’ density is greater between 8m and 11m.;
* Populations increases were also noted at the cities of Sherbrooke and Magog water intakes;
* 27 sites were monitored for banded mystery snails in 2022. Increase in populations were also noted for this specie;
* For Eurasian watermilfoil, 102 herbarium were characterized and a increase has been noted for this specie;
* For cyanobacterial blooms, observations decrease in 2022 campared with 2021.

Oliver Pierson

* VT state agencies have invested over $10 million in clean water projects in the Memphremagog Basin from 2016-2021 and reduced phosphorus load by almost 6.6 metric tons over this period, mostly from the Agriculture Sector;
* In spite of the efforts made toward phosphorus load reduction, data shows a relative stability for different in-lake parameters such as phosphorus, transparency and chlorophyll-a;
* Phosphorus levels are back to 18,1 ug/L after 2021, where they spiked at 23 ug/L. Those levels are still higher than the TMDL goal of 14ug/L.;
* Evidence of lake stratification in dissolved oxygen and temperature were observed in relation with depth. Lake was not as well mixed in 2022. Anoxia likely leads to internal P loading.
* This phenomenon was underestimated in the TMDL calculation. May make achieving targets more difficult;
* Severe cyanobacterial blooms decrease in 2022 compared to 2021 but are still high;
* It is estimated that the different programs in place helped reduced by 1,8 tons of phosphorus loading to the lake for 2021, which represents 12% of the required reduction. P reduction will increase as we take in account all programs and not just the ones from agriculture;
* Data monitoring efforts will continue for the next years;
* Seek funding for a high-frequency monitoring buoy in US waters, to contribute to the data collection effort led by the Observatoire in Quebec;
* Detection methods reported positive indications for zebra mussels presence at the border. Decrease in detection of the starry stonewort were noted for lakes Memphremagog and Derby.

1. **Update on Lake Watershed Action Plan Development in the Memphremagog Basin**

* Phosphorus reduction efforts as part of the TMDL resulted in 1,8 tons per year in phosphorus reduction for the last two years;
* The greatest efforts still to make in the watershed are from agriculture;
* Additional funding will help identify and implement a larger number of projects that will significantly help reducing phosphorus loading to the lake;
* Providing technical support to target practices where monitoring, assessments and modeling identifies these having the largest impact (Roads, Ag practices, projects identified in Lake Watershed Action Plans);
* Next tactical basin plan is the result of different actions and consultations and will be issued in june 2023.

1. **Update on Coventry landfill pretreatment permit review process**

* First, there is a difference to make between the landfill pretreatment permit process and the declaratory ruling process concerning the water treatment of underdrain no.3 in which PFAS were detected.
  + Underdrain water treatment: PFAS were detected in water coming out of underdrain no.3. After investigation. it has been concluded that those PFAS were likely to come from an ancient contamination of the site and not from a membrane alteration. Vermont state will rule if Casella also must get a discharge permit. Anyways, those waters will get treated.
  + Leachate pre-treatment permit: Following the public hearings, almost 400 comments were received concerning the permit project. Those comments led to changes by the state to the permit, like the technology used and the chemical monitoring. The permit should be issued during the next month. City of Montpellier, which presently receives and treat leachate from the Coventry site, will stop taking leachate with PFAS by June 2023. After that date, either the pre-treatment is effective and Montpellier continues treating those leachates or the company will have to take the leachate out of Vermont, to one the company’s other sites in New Hampshire or New York state.

1. **New PFAS regulation process**

* The EPA issued a health advisory with very low PFAS limits, below the actual detection limits of the laboratories;
* Drinking water standards limits for PFAS will come out in January 2023. Those limits are not expected to be as low as the one published in the health advisory.

1. **Update on the Newport Rural Tourism Academy**

* The goal of the academy is to promote and develop tourism in the Memphremagog region. Efforts towards this are pursued like the signage program for tourist;
* The Northern star is back on the lake. The floating classroom is up and going. There is hope to have it also in French, in collaboration with Quebec.

1. **Memphremagog permanent observatory**

* This initiative consists of real time monitoring for different water quality parameters. The needs for this come from: 1. It has been cited in literature that there is a bias caused by manual sampling du to human nature of going out only during optimal conditions. 2. There is no data on water quality parameters during the winter time;
* The buoy is deployed in the lake since mid-august 2021;
* First data set for different parameters are presented for the first time, for the first winter with the buoy in activity;
* Data from 2021 and 2022 are presented;
* For next year, more detectors will be added to enhance the quantity of parameters monitored and an automatic sampler will be added;
* A graduate summer school regarding the water quality of the lake is in preparation for summer 2023;
* There will be a conference day on lake Memphremagog on November 17th. The agenda is presented.

1. **Miscellaneous**

* **Lake level modification possibility (International treaty)**
  + The lake level, controlled by a dam on Magog river, is regulated by a binational treaty. Is it possible to revisit this treaty and change the lake levels if needed with the context of climate changes?
  + Different partners will verify the terms of the treaty and how the levels were determined. More details will be presented at the next meeting.

**13. Adjournment and next meeting planning**

* The next meeting should be held in Quebec on May 11th 2023, preferably at the Hermitage golf club. This will enable to set the sequence back to it’s previous hosting alternance between Quebec and Vermont.

D.T.

MELCCFP

2022-11-22