

Lake Major Watershed Advisory Board

Meeting Minutes

March 14, 2019 – 2:00 p.m.

Lake Major Water Treatment Plant Boardroom

Attendees:

Sherry Bernard (SB), Lake Loon/Cherry Brook Development Association.....Community Representative
Spencer Colley (SC), (*Chair*), East Preston Ratepayers Association.....Community Representative
Julie Ernst (JE), Lake Major.....Community Representative
Barry Geddes (BG), (*Secretary*), Watershed Manager.....Halifax Water
Jonathan MacDonald (JM), Project Engineer.....Halifax Water
Dawn MacNeill (DM), Watershed Planner.....Nova Scotia Environment
Anna McCarron (AM), (*Vice Chair*) Source Water PlannerHalifax Water
Heather O’Keefe (HO), Protected Areas Coordinator.....Nova Scotia Environment
Derrick Stoddard (DS), Area ManagerDepartment of Lands and Forestry

Regrets:

Reid Campbell (RC), Director of Water Services.....Halifax Water
Andrew Faulkner (AF), Development Officer.....Halifax Regional Municipality
Matt Nelson (MN), Forest TechnicianDepartment of Lands and Forestry
Colin Waddell (CW), Lake Major Water Supply Plant Supervisor.....Halifax Water

Guests:

Debanjan Dhar, Co-op Student.....Nova Scotia Environment
Simon Yap, Co-op Student.....Nova Scotia Environment

Absent:

Rev. Wayne Desmond (WD), North Preston Ratepayers Association.....Community Representative
Bernie Matlock (BM), P. Eng.....Nova Scotia Environment

1. Attendance and Introductions:

- AM distributed copies of:
 - i. Meeting Agenda;
 - ii. DRAFT November 1, 2018 Meeting Minutes;
 - iii. 2 Maps of Lake Major watershed area
 - iv. Bundy Lane Subdivision Application #21907 documents;
 - v. Arnold D. Johnson Sports Field Grand Opening news handout; and
 - vi. Lake Major Watershed Working Committee Briefing Booklet.

Meeting called to order by Chairman (SC) (15 minutes late due to technical preparations):

- Regrets/Absentees listed above;
- Quorum noted; and
- Staff person reviewed plant safety plan;

2. Review and Approval of November 1, 2018 Meeting Minutes:

Motion to approve November 1, 2018 Meeting Minutes with change (“Loon Lake” to “Lake Loon” (p. 5)); seconded by HO; all in favour.

3. Old Business:

a. Lake Major Dam Update (moved up from Item b. to Item a. in the agenda) (JM):

- the dam design was selected through a design selection process;
- the selected design is a labyrinth spillway, which was selected for two reasons:
 - passively operated – water just spills over the dam; and
 - does not need a lot of maintenance to operate;
- the project was planned and approved to be built over three phases;
- maintain an environmental flow of 4 cubic feet per second (cfs) (now 6 cfs) – minimum volume required to pass downstream to maintain fish passage at all times;
- did not block the channel off completely to build the dam, the watershed is quite large so it was not feasible to cut it off completely and manage the volume of water that would need to pass through, especially during storm events;
- Phase 1 is complete and consisted of the south core wall abutment, the fish ladder and 2 sluice gates to let water out when the dam is operational;
- Phase 2 consists of a coffer dam – the construction of the remainder of the spillway from where Phase 1 left off – from the north bank to the edge of the Ernst driveway;
- Phase 3 will be complete in June or July of 2019 and will involve the following:
 - dewatering the area between the two dams;
 - digging out the sediment that was deposited behind the old dam;
 - removing the old dam;
 - creating a new dedicated channel for fish to get from under the dam to the fish ladder and to the lake, and will be the only area with water in it during dry spells to get to the lake;
 - also building a secondary earth dam to make sure all the water that leaves the site goes over the dam and not through the hole;
- Cofferdam is a temporary structure which allows work to occur inside a relatively dry environment and will be reused;
 - Sump pumps are placed around perimeter to pump out any water that seeps in;

Q: How deep is the dam? (JE)

A: About 8 feet. Dug down about 15 feet to the bedrock; then drilled down about 30 feet to inject grout under the dam location to prevent water from leaking out from under the dam and provide a solid foundation for the dam. The only concrete remaining to pour for Phase 1 is for dissipation – when the water spills over the spillway it will spill onto a concrete basin to prevent scouring of the river bottom, especially during big rain events. (JM)

- Two bays are where the sluice gates are at the very bottom; when the dam is not spilling and the fish ladder is not producing enough during low water times, we can let some water in downstream, by raising the gates a little to maintain permit compliance;

- Phase 2 work has started and involves:
 - flooding the phase one coffer dam, taking it apart and reversing it;
 - putting in the membrane and the frames and pumping out the water to get it dry;
 - after the sump pumps are set up to get water under control, they can start digging the sediment and getting down to the bedrock to put in the form;
- Phase three begins in June, after the fish have been moved over the dam;

Q: *So the water is diverted to go through the sluice gates now? (DS)*

A: The two sluice gates are open; water will go through the fish ladder and over the spillway. That side is functioning, but not 100% yet. When phase three starts, we will shut the gates, pop the fish ladder off, make it completely dry and provide maintenance flow for siphon pumps, or however the contractor chooses to provide fish passage during Phase 3. (JM)

Q: *Has anything interesting been found on the lake bed?(JE)*

A: Oil barrels, old tires and other debris. An archeological dig was conducted on the banks of both sides but no artifacts, or anything of historical significance was found. (JM)

- substantial completion of Phase 3, which includes the channel work will be completed in August;
- the current water withdrawal application has been extended until the dam is completed;
- once Phase 3 is done, safe operating procedures for maintaining flow of 6 cfs and a regulatory piece will have to be developed for operating that structure;

Q: *Timeline? Will dismantling of the old dam occur after the new dam is completed?(JE)*

A: No. The dismantling will be done during Phase 3, in June or July during the driest time, while maintaining the downstream flow. The intent is to wait until the bulk of the fish have run (i.e., late May – early June depending on water temperature when the fish are coming in the hundreds rather than the thousands). (JM)

Q: *Why are the diesel pumps operating again? (JE)*

A: More pumps are needed to dry out the area to get down to the rock. They were able to get the water removed more quickly this time. (JM)

- The dam will operate under three flow regimes:
 - flow over spillway and through fish ladder, anytime lake levels are >19.5 m;
 - flow through fish ladder anytime lake levels are between 19.5 m and 18.8 m, i.e., about 8 inches lower than the existing dam level is now;
 - open sluice gates slightly to let water in anytime water levels are between 18.8 m and 18.5 m because the required 6 cfs won't be going through the fish ladder at this level. Hopefully, this will be a rare occurrence.

Q: *How will you know when these water levels have been reached? (SB)*

A: A level sensor tells us what the water level is. The fish ladder will have an adjustable weir to let out 6 cfs of water. The box will drop automatically. This fish ladder has a bigger operating range than the old fish ladder, which required manual removal of pieces of wood to regulate the water flow. The new one will be mostly automatic. Whenever water levels fall below 18.8 to as low as 17 m, we will be able to let some flow out. (JM)

Q: *What about below 17 m? (DM)*

A: We have never been below that level. That would require further discussion. (JM)

- the dam will be equipped with level sensors. There are manual staff gauges so the

operators can easily see whether they are providing the required 6 cfs;

- the fish ladder will operate based on the lake level; the first four ladders are adjustable between 18.8 and 19.5; and will have a lot more flexibility, operating over a whole metre of height;
- the dam is designed to function automatically; however, when needed, there is operator input at the control room and ability to provide a signal back to a control panel at the dam and manual operation to crank a wheel if the power goes out;
- The next presentation I give, it will be all done.

Q: *How are the lights at the work site JE?* (DM)

A: They are better now. But it is the diesel motor again. (JE)

Q: *Will there be lights on at the dam continuously?* (JE)

A: There will be some with a street light style. (JM)

b. East Lake Dam update

AM directed the members' attention to the map of the watershed area (see 1.iii).

- JM described where East Lake is located and the relative location of the dam (at the outlet of the brook from at the bottom of East Lake, leading to Lake Major);
- For each dam, a safety review is conducted every 7 years;
 - recommended Halifax Water examine where the East Lake dam is leaking;
- Halifax Water hired a contractor to assess the structure and rehabilitation options;
- part of the withdrawal approval to operate is to implement our dam safety program.

Q: *Is the intent to keep the dam?* (DM)

A: The intent is to hire a contractor to assess the East Lake dam; then Halifax Water will make a decision based on recommendations. (JM)

JM was thanked for his presentation.

c. Protected Areas Update – an overview of the Protected Areas Branch of NSE (HO)

- Nova Scotia Environment (NSE) is the lead agency for the planning and management of the province's Protected Areas, which include:
 - Wilderness Areas (WA) and Nature Reserves (NR) of which there are about 150 combined, covering about 520,000 ha – about the size of PEI;
 - Canadian Heritage Rivers – the Margaree/Lake Ainslee River in CB and the Shelburne River in Lunenburg Co.;
 - provide technical advice and expertise on wetlands and oversight of the [Wetland Conservation Policy](#);
 - different levels of protection the province encourages and supports, besides WA and NR, are National Parks, Nova Scotia Nature Trust and Nature Conservancy;
 - total protected land percentage is 12.64% of the province;
- “Protected Area” (PA) means different things to different people – the [International Union of Conservation of Nature \(IUCN\)](#) provides a [definition](#). Essentially, the purpose is to conserve a defined natural space that is legally recognized and managed.
- Why establish protected areas?
 - To protect biodiversity;

- provide places for people to experience and learn about nature, health and recreation, healthy ecosystem services through clean water, air and soil and benchmarks for research;
- contribute to local economies working in or just outside protected areas; and
- leave a legacy of areas that will always be there and protected.
- Nature Reserves vs Wilderness Areas
 - About 80 NR in the province are protected under the [Special Places Protection Act](#), which provides the highest level of protection in the province. They are typically small areas, providing protection for outstanding unique features – a rare species for example; human use is light and more prohibitions are in these areas, e.g., camping, hunting, vehicle use etc. are *not* permitted;
 - About 72 WA are protected under the [Wilderness Areas Protection Act](#). Typically they are larger pieces of land – the largest being the [Tobeatic Wilderness Area](#), amounting to ~120,000 ha; the primary purpose is to protect biodiversity, the secondary purpose is to provide recreation, hunting, and camping, including some vehicle use, under certain circumstances;
- Science-based criteria is used to identify these areas through the following:
 - large remote roadless areas with wilderness characteristics with a range of different features such as coastal, highland, barren, rich, highly productive and diverse, rare or outstanding landscapes;
 - maintaining connectivity in the province, e.g., the Chignecto Isthmus;
 - recreation areas that have been disturbed and have restoration opportunities;
 - social and economic benefits including opportunities for recreation, tourism outfitting businesses;
 - vehicle access – a hot topic for protected areas – are selected and designed in consultation with provincial ATV and snowmobile associations; avoidance of some of their trails is sought when defining boundaries or excluding roads;
- Administration of PA is a shared responsibility between DLF and NSE – DLF helps with surveys and land administration; NSE has limited resources so it relies on community groups to help manage these areas and raise money;

Q: *What is the difference between a managed trail and a designated trail?* (DD)

A: They are the same thing. The Minister is giving responsibility for each trails' management to the group looking after it. (HO)

Q: *Are some not managed but designated?* (AM)

A: No. There are some that are informal but are not managed. Ideally we want the community group to step up to manage this for a trail development process.

DS from DLF continued by explaining differences between Wilderness Area and Game Sanctuary.

- part of the Waverley Game Sanctuary (Est. 1936) is in Lake Major Watershed Area;
- 13 Game Sanctuaries (GS) in NS; most established in the early 1900s;
- at the time, stringent rules restricted activities that could take place in GS and they were patrolled; a gated one in Liscombe was tended 24/7 to let people in and out;
- walking and recreation can take place in GS now without a permit;

- game cannot be removed;
- dogs must be on leash in a GS;
- warden cabins were a day's hike between each one; a warden cabin remains at three mile lake in the Waverley Game Sanctuary (WGS); HO, staff and a community group – Canoe NS – are working to preserve that cabin;
- signage there is old metal signs;
- GS rules are a more relaxed these days, but hunting is still not permitted;

Q: *Where the Game Sanctuary overlaps the Wilderness Area, is hunting not permitted? (DM)*

A: Correct. The more stringent rule applies where regulations overlap. (DS)

- In a WA there is no forestry, no cutting, leave no trace recreation, education and research;
- a bigger problem areas is off Old Guysborough Road, where ATVs drive right into the lakes;

HO to discuss with NSE Protected Areas Branch staff regarding status of land swap.

- The land swap involves swapping land in the WA with Halifax Water land to try to make the landownership more consistent within the watershed area;
 - a letter of offer was made to the Halifax Water regarding the land swap;
 - staff changes delayed progress on this file;
 - work on this file has resumed.

Q: *Has any Wilderness Area land been considered regarding the Preston Area land titles clarification issue?(SB)*

A: Not to DS' or HO's knowledge. Encourage anyone to come forward with knowledge of this.

Discussion:

- All lands east of Dartmouth were granted, so we need to determine how those Crown lands were acquired and if the [Land Titles Clarification Act](#) will impact it. (SB)
- It is important for people to come forward with claims where warranted. (DS)

Q: *How do I know when I cross from one regulated area into another? (SB)*

A: There will be more WA signage at common entry points, rather than random signage in the middle of the woods. ATVs are crossing into signed areas.

- DM reminded the Board that the [Lake Major Watershed Protected Water Area \(PWA\)](#) is also a factor in terms of [regulated land areas](#).

Action: AM to circulate a map to the membership showing the game sanctuary, WA and PA boundaries to illustrate where they overlap.

AM

- The members expressed satisfaction with the explanations of the land areas and the activity-regulation defining boundaries inside the watershed area.

DS and HO were thanked for their presentations.

JE excused herself from the meeting.

d. Lake Major Regulation changes/considerations

- On-site Sewage Disposal Systems (OSSDS) (Deferred due to AF's absence);

Action: AF will check into whether HRM was aware that they have the opportunity to

AF

receive notification of OSSDS notifications and approvals. (Deferred due to AF's absence.)

Action

i. Swimming in Long Lake:

Deferred due to BG's and WD's absence

Action: WD to discuss the concern about access to Long Lake and private property at the next NPRPA meeting. (Deferred due to WD's absence)

BG/WD

e. North Preston Recreational Field Update:

Deferred until the inspection and compliance issue between HRM and the province has been resolved.

- DM stated that she has no further information on this item.
- AM circulated an information item through media coverage found online about the official opening of the field that she came across doing other research.

Action: Keep on the agenda until the inspection and compliance issue has been resolved.

BG/AM

f. Bundy Lane Subdivision Application # 21907:

- Sewer is all that is needed, water is already provided to existing home;
- however, this application includes a request to extend water and sewer service to the lots in question;

Q: Has the Bundy Lane application been approved?(SB)

A: No update at this point. (AM)

- the request is to extend services for both water and sewer within this application, where either is currently, is not provided;
- The Lake Loon/Cherry Brook Development Association (LL/CBDA) is very interested in having sewer service extended to Bundy Lane;
 - SB wanted to wait until after the new house development application was finished before they undertook requesting water and sewer service extension into the subdivision;
- The new home would need both water and sewer services, but the rest of the community would only need sewer;

The Board to send letter to HRM Planning in support of the Bundy Lane Subdivision Application # 21907.

Complete

Q: Has letter been sent? (DM)

A: Yes. SC signed the letter from the Board regarding the Subdivision Application #21907. (SC)

g. Letter requesting municipal service extension in Lake Loon/Cherry Brook:

- AF is the HRM development officer and would know better the details on the status of this request;
- SB was waiting to see whether water would be brought down Bundy Lane before writing a letter on behalf of the LL/CBDA;
- It might be most effective to have the whole community write a letter asking for extension of services (AM):
 - First, make a request for what services are required through your councillor;
 - the Community Plan (MPS) recommends services be extended in this area;

- HRM Council and Halifax Water would need to be sent the request;
- it is in this Board's best interest to have municipal sewer services to help protect the watershed;
- the Board supports sending a letter upon request;
- The LL/CBDA must take the first step by consulting with the local councillor, following her recommendations with respect to HRM Council and Halifax Water; then, if warranted, make a request to the Board to support their request to extend services.

Action: The Board supports sending a letter to HRM, at the request of the Cherry Brook Development Association, in support of extending municipal services into the Lake Loon/Cherry Brook area of the watershed, as a means of reducing the risk of contamination to the water supply from On Site Sewage Disposal Systems.

BG joined the meeting after returning from inspecting the dam site.

4. New Business:

a. Source Water Protection Plan Annual Report (BG):

DS displayed the document onto his computer due to lack of paper copies;

- An annual Report of source water protection accomplishments and outstanding issues within our watersheds;
- 1st 8 pages discusses general monitoring, Emergency Measures Operations and source water protection efforts and reporting:
 - Under the [Environment Act](#), Halifax Water has the responsibility for implementing the PWA Regulations;
 - waiting for Nova Scotia Environment approval on BG's Special Constable Status;
 - Research on water quality impacts with respect to forest management activity aimed at knowing how to reduce impacts on water quality;
 - April 24, 25, 26 is when a [forWater](#) forum on forest management practices, hosted by Halifax Water is taking place in its watershed areas;
- Accomplishments:
 - development applications have been circulated;
 - Lake Major Newsletters – one per year has been published;
 - Still in clean-up mode from Hurricane Juan damage – forest management; and
 - dam construction.
- Outstanding issues:
 - OHVs (ATVs) – not much activity in the Lake Major watershed, according to the cameras;
 - Letting people know that cameras are there helps to deter activity;
 - Land Swap – continuing;
 - Recreation (Arnold D. Johnson Sport Field);
 - Unsightly premises – does not violate the PWA, so it's not something Halifax Water or the Board can address – complaint falls under HRM's jurisdiction;
- Water Quality:

- 7 sample points and one deep lake sample point measures baseline conditions;
- 2 years ago returned to monthly from every two-month baseline sampling;
- this year’s water quality sampling data indicates no appreciable changes;
- map outlines whole source water sampling baseline program – 53 points/month.

5. Landowner Questions/Update

Halifax Water to prepare a map and a presentation of the history of the development of the LMWAB, showing watershed and community boundaries.

Action: Members asked to review the Lake Major Working Committee Briefing Booklet and provide comment. AM will remind the members in advance of the next meeting to provide questions about what they would like to have information about in a presentation on this topic at the next meeting.

6. Education Update

b. Arnold D. Johnson Sr. Water Resources Award Update

- The [Arnold D. Johnson Award application website](#) was circulated to the Board members;
- Continue to provide reminders of ADJ Award application deadlines.

c. Lake Major Newsletter Update

- Topics for next newsletter:
 - Profile SB
 - Arnold D. Johnson Sport Field

7. Municipal Update:

- Nothing to report according to AF’s email when he sent regrets

8. Election of Officers:

- Next election of officers – Fall 2020.

9. Next Meeting Date/Time:

- Thursday, October 17, 2019 – 2:00 – 4:00 p.m.

10. Adjournment: 4:20 p.m.

Action

Deferred

AM/All

Respectfully submitted by AM