

AGENDA PACKAGE FOR:

Council meeting
Wednesday June 12th 2019 | 9:00 AM – 1:30 PM
Columbia Shuswap Regional District Boardroom
555 Harbourfront Drive NE, Salmon Arm

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| 1 | March 13 th 2019 meeting summary for approval | 9:10 |

Council Meeting
March 13th 2019 | 10:00 AM – 2:30 PM
Columbia Shuswap Regional District Boardroom
555 Harbourfront Drive NE, Salmon Arm

Draft Record of Decisions and Action Items

This record is subject to correction when adopted at the next SWC meeting

Meeting objectives

1. Elect Chair and Vice Chair for 2019
2. Receive report from Program Managers
3. Approve 2019-20 budget and work plan
4. Receive guest presentation on provincial Agricultural Environmental Management Code of Practice

Present

Paul Demenok, Chair – Columbia Shuswap Regional District, Area C
Rene Talbot – Columbia Shuswap Regional District, Area D
Rhona Martin – Columbia Shuswap Regional District, Area E – *by phone, 11:25 am – 12 pm*
Jay Simpson – Columbia Shuswap Regional District, Area F
Ken Christian – Thompson-Nicola Regional District, City of Kamloops
Rod Crowe – Thompson-Nicola Regional District, Village of Chase
Alan Harrison – City of Salmon Arm (alternate)
Colleen Anderson – District of Sicamous
Denis Delisle – Regional District of North Okanagan, Area F
Rick Fairbairn – Regional District of North Okanagan, Area D
Laura Code – BC Ministry of Agriculture
Dennis Einarson – BC Ministry of Environment and Climate Change
Ray Nadeau – Community Representative
Randy Wood – Community Representative

Erin Vieira and Mike Simpson – Fraser Basin Council

Observers

Ian Rogalski, Bob Misseghers

Regrets

Steven Teed
Dave Nordquist
Lorne Hunter

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Call to Order The meeting was called to order at 10:00 am by Mike Simpson

Election of Chair and Vice Chair **ELECTION** of Chair of the Shuswap Watershed Council for 2019 is Paul Demenok by acclamation.

ELECTION of Vice Chair of the Shuswap Watershed Council for 2019 is Jay Simpson by acclamation.

Welcoming comments A round of introductions took place. Chair Demenok acknowledged Ray Nadeau, who is completing his term with the SWC as a Community Representative. Chair Demenok thanked Ray for his contributions and participation in the SWC since 2016, and for his efforts leading up to the establishment of the SWC in the years prior. Director Denis Delisle and Director Rick Fairbairn were introduced as newly appointed representatives from the Regional District of North Okanagan.

Adoption of meeting summary **Moved/seconded** by Mayor Christian/Director Talbot that: The summary of the December 12th 2018 meeting of the SWC be adopted.

CARRIED

Correspondence **Moved/seconded** by Director Simpson/Director Talbot that: The correspondence from Minister Jonathan Wilkinson dated December 13th 2018 be received for information.

Discussion:

Directors expressed their concerns over potential vectors that could bring zebra and quagga mussels into BC, including floatplanes, watercrafts entering BC at un-guarded highways and roads, and trans-boundary waters such as Lake Kooconusa, Osoyoos Lake, and Ross Lake. Directors also commented on the potential for less conspicuous watercraft, such as inflatable watercraft and stand-up paddleboards, as being vectors for invasive mussels.

CARRIED

Action item: staff will discuss floatplane monitoring with the Canadian Border Services Agency

Old business **Moved/seconded** by Director Delisle/Director Simpson that: The draft summary of the Shuswap Water Protection Advisory Committee meeting on December 5th 2018 be received for information.

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Discussion:

Chair Demenok remarked that the final outcomes and recommendations of the nutrient research in the Shuswap and Salmon River watersheds is forthcoming.

CARRIED

Moved/seconded by Mayor Harrison/Director Simpson that:

The draft summary of the Shuswap Water Monitoring Group meeting on February 27th 2019 be received for information.

CARRIED

Report from Chair

Chair Demenok expressed his appreciation for the opportunity to Chair the SWC for another year.

Report from Program Managers

Erin Vieira presented an update on program operations since the SWC's last meeting in December:

- The second phase of nutrient research with UBC-Okanagan is underway. A sediment core from the Mara Lake bottom has been collected by the researchers, and will be analysed for chronological nutrient deposition this spring and summer.
- The Water Protection Advisory Committee will next meet in April or May, and the meeting will include a tour of the new wetland at Gardom Lake
- The Water Monitoring Group most recently met in February; they discussed water quality monitoring plans throughout the watershed in 2019. They have recommended two monitoring projects for support from the SWC in 2019:
 - Priority monitoring for Zebra and Quagga Mussels at 24 sites in the Shuswap watershed
 - Enhanced monitoring at 7 sentinel sites on Shuswap and Mara Lakes to determine the effects of the 2018 dominant salmon return
- The 2018 Shuswap Water Quality Summary report is underway; it will include some water monitoring results for the previous year, as well as other informative articles.

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Erin presented a financial report to the end of the third quarter, April 1st – December 31st 2018:

| | Annual budget (\$) | Expenses (\$) |
|--|--------------------|----------------|
| Water Monitoring Initiative | 66,400 | 19,647 |
| Water Protection Initiative | 76,300 | 55,219 |
| Zebra & Quagga Mussel Prevention Program | 26,850 | 26,241 |
| Safe Recreation Program | 12,200 | 11,083 |
| Communications | 37,850 | 23,054 |
| Management and Administration | 40,750 | 26,202 |
| Operating Reserve | 131,528 | 0 |
| Total expenses to December 31st 2018 | 391,878 | 161,446 |

Discussion:

Directors commented on the lack of uptake of SWC's \$10,000 grant available to community or stewardship groups for water quality improvement projects in 2018, and cited specific opportunities for projects if only there were 'boots-on-the-ground' organizations to take a lead role.

Directors also remarked on the 2018 Water Quality Summary, and the opportunity to include more evidence-based commentary on water quality, as well as actions that residents of the Shuswap can take to safeguard water quality.

New business: Work plan and budget for 2019-20

Director Martin joined the meeting by teleconference at 11:25 am

Erin Vieira presented the proposed work plan and budget for 2019-20, to take effect April 1st:

| Revenue | \$ |
|---|----------------|
| Carry forward from 2018-19: | |
| Projected operational surplus | 20,000 |
| Operating Reserve (includes \$20K contingency fund) | 131,528 |
| Per Contribution Agreement: | |
| CSRD Areas C, D, E, F and District of Sicamous | 160,000 |
| TNRD | 53,600 |
| City of Salmon Arm | 40,000 |
| Adams Lake Indian Band | 1300 |
| External grant applications (pending): | |
| Boating Safety Contribution Program | 19,538 |
| MITACS | 15,000 |
| Total Revenue | 440,966 |

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| Work plan and budget | \$ |
|---|----------------|
| Water Quality Program: Water Monitoring Initiative | 51,150 |
| Water Quality Program: Water Protection Initiative | 79,500 |
| Zebra and Quagga Mussel Prevention Program | 30,825 |
| Safe Recreation Program | 26,050 |
| Communications | 40,200 |
| Management and Administration | 43,150 |
| Sub-total operational expenses | 270,875 |
| Operating Reserve (includes \$20K contingency fund) | 170,091 |
| Total budget | 440,966 |

Erin highlighted some of the key activities to take place within the Water Quality Program:

- Enhanced monitoring at seven sentinel (long-term) sites on Shuswap and Mara Lakes to determine the effects of the 2018 dominant salmon return. This work will be done by the BC Ministry of Environment.
- The completion of a three-year nutrient research project on the Shuswap River and Salmon River; as well as completion of a follow-up study to understand the chronological nutrient deposition to Mara Lake
- A robust prioritized monitoring detection program for Zebra and Quagga Mussels, to be carried out by the Columbia Shuswap Invasive Species (with financial support from multiple parties, including the SWC).

Other key activities for the SWC will be the ongoing delivery of educational/awareness campaigns to prevent the introduction of Zebra and Quagga Mussels, with a strong emphasis on promoting watercraft inspection and Clean-Drain-Dry practices. The SWC will also continue its education and outreach for safe boating and recreation. The SWC Communications work plan includes the production and distribution of a 2018 Water Quality Summary report, as well as several outreach initiatives including participation at an aquatic invasive species conference. The nutrient management education program will be cut from the SWC's work plan this year, in part because the Ministry of Environment will be doing outreach across BC with regard to its new Agricultural Environmental Management Code of Practice in 2019.

Moved/seconded by Mayor Christian/Mayor Crowe that:
The 2019-20 work plan and budget be received and approved, as presented.

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Discussion:

Mayor Harrison inquired about the SWC's operating reserve; Chair Demenok responded that it has built up over the past few years from operational surpluses, and may be used in the future as the SWC considers reasonable measures for collaboratively managing or mitigating nutrient-loading in the watershed.

CARRIED

Director Martin left the meeting at 12:05 pm

Lunch break

The SWC took a lunch break from 12:05 – 12:45 pm

Guest presentation

Josie Beruldsen and Chris Jenkins of the BC Ministry of Environment and Climate Change, and David Poon of the BC Ministry of Agriculture presented an overview of the Agricultural Environmental Management Code of Practice (AEMCoP or simply CoP).

Ms. Beruldsen thanked the SWC for their involvement in the regulatory review, and their submissions to the Province with regard to development of the AEMCoP. The CoP replaces the Agricultural Waste Control Regulation (1992); it came into effect on February 28th.

The CoP applies to over 17,000 agricultural operations in BC, which includes over 35 distinct sectors of the agriculture industry. The goal of CoP is to have all farms in BC achieve a basic level of environmental protection. Ms. Beruldsen outlined some of the desired outcomes from the Code to protect water quality: these include universal requirements as well as special requirements for high-risk areas or high-risk conditions. She outlined vulnerable aquifer areas and phosphorus-affected areas within the Shuswap, to which special requirements under the Code will be phased in. She also highlighted the Ministry's compliance and enforcement plan for the new Code.

Director Fairbairn left the meeting at 1:00 pm

SWC members had several questions and comments for Ms. Beruldsen and her colleagues. These pertained to the Ministry's plan for outreach; compliance and enforcement; and the Ministry's definitions and designations for high-risk areas and high-risk conditions. In particular, Mr. Chris Jenkins indicated that the Ministry is prioritizing phasing in requirements for nitrate management (due to human health impacts), and phosphorus management requirements will be subsequently phased in.

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Chair Demenok inquired if the Ministry is considering supporting any mitigative works with regard to nutrient-loading to rivers and lakes; Mr. Jenkins replied that it is something the Ministry would need to consider.

Ray Nadeau expressed concern over the largely unknown cumulative effects of agricultural pollution in the watershed, and inquired if the Ministry is addressing this. Mr. Jenkins replied that there is provision in the CoP such that the Ministry may obtain information from farms at a regional level and undertake an assessment.

Director Delisle commented that there may be potentially high costs imposed on some farms to come into compliance with the CoP, and inquired if there is any assistance from the Province for this; Mr. Jenkins replied that there are several existing cost-sharing programs such as the Environmental Farm Plan.

Action item:

Ms. Beruldsen committed to sharing a list of regional organizations with the SWC that the Ministry will work with during their outreach; the SWC may be able to assist by building upon their list.

In Camera meeting

Moved/seconded by Mayor Harrison/Director Simpson that: Pursuant to Sections 90(1)(1) – *personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the Regional District or another position appointed by the Regional District* – of the Community Charter, the SWC move in camera

CARRIED

The regular meeting of the SWC re-convened at 2:20 pm.

Roundtable updates

None provided

Adjourn

Moved/seconded by Director Delisle/Director Simpson that: The March 13th 2019 meeting of the Shuswap Watershed Council be adjourned.

CARRIED

Meeting adjourned at 2:20 pm.

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| 2 (a) | Correspondence: Chair's and Program Manager's speaking notes for presentation to Parliamentary Committee on Fisheries and Oceans | 9:20 |

Hon. Ken McDonald
 Chair, House of Commons Standing Committee on Fisheries and Oceans
 Sent by e-mail to fopo@parl.gc.ca

Re: Speaking notes for witness appearance before the Standing Committee on Fisheries and Oceans on May 6th 2019, 12:30 – 2:00 PM (PDT)

Thank you and introductions

[Chair Paul Demenok and Program Manager Erin Vieira introduce themselves]

Thank you for the opportunity to speak to you today on behalf of the Shuswap Watershed Council, and provide our input to the review of the National Aquatic Invasive Species Program. We have some significant concerns about potential new introductions of aquatic invasive species, and we believe this is an important review. Our concern is regarding two species in particular: Zebra and Quagga Mussels.

The Shuswap Watershed Council is a watershed-based partnership of regional district governments, municipalities, the Secwepemc First Nation, and provincial government agencies. Our mandate is to enhance, protect, and advocate for water quality in the Shuswap watershed, which is in the interior region of British Columbia. Since our formation as a Council in 2014, we have become increasingly informed and concerned about the threat of invasive Zebra and Quagga mussels, and the risks to aquatic ecosystems and to our regional economy. Preventing an invasion of these mussels is of utmost importance.

i. What's at stake? What do we stand to lose if the Shuswap and British Columbia are invaded by Zebra and Quagga Mussels?

Zebra and Quagga mussels haven't been detected in BC, but our waters are greatly at risk because of our proximity to infested waterways, the high volume of boat traffic and recreational tourism in and out of our watershed which is the primary pathway for new invasions, and our water quality conditions which are ideal for Zebra and Quagga mussels to establish and thrive.

There is much at stake: The Shuswap watershed has been described by some as the most socially, economically, and ecologically important large-lake aquatic ecosystem in British Columbia. It is the drinking water source for several communities, it is the centre of a thriving tourism industry and an expanding residential and commercial property market, and it provides migration, spawning, and juvenile rearing habitat for four species of Pacific salmon including the world-famous Adams River Sockeye. The Shuswap watershed is a tributary to the Fraser River, a watershed of its' own great significance.

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The Zebra mussel, in particular, is thought to be one of the most destructive aquatic species ever to have invaded North American fresh water¹. Its impacts are well known, and costs associated with maintenance requirements imposed by invasive mussels are conservatively estimated to be \$43 million per year to British Columbia tax-payers and rate-payers. Additionally, the impacts suffered by Pacific salmon in the Shuswap watershed, and potentially downstream in the Fraser watershed, are not yet well understood.

ii. We don't believe enough is being done to prevent new invasions of Zebra and Quagga Mussels

We are gravely concerned about the risk of an invasion of these mussels to the Shuswap and to all of British Columbia, and are dissatisfied by the measures to-date to prevent new invasions in Canada. In light of our concern, last year the Council spent \$43,000 on invasive mussel prevention in the Shuswap watershed, derived from local tax revenue, and this year it will spend close to \$46,000.

In 2017 the Department of Fisheries and Oceans budgeted \$43.8 million over five years to prevent and manage aquatic invasive species²; of that, approximately 86% is allocated to two species in Ontario, neither of which are invasive mussels. In August 2018, Minister Jonathan Wilkinson announced an additional \$400,000 over three years for Zebra and Quagga Mussel research, education and outreach. We believe these are disproportionate allocations of funding, both geographically and by priority species.

iii. What we think needs to be done to prevent new invasions of Zebra and Quagga Mussels

We feel strongly that the Department should invest more to prevent further spread of invasive mussels, and federal funding ought to go toward collaboratively supporting the following three prevention strategies in British Columbia:

- A contribution to the Province of BC's watercraft inspection program to enable the establishment of more inspection stations around BC's perimeter, and longer operating seasons and hours for the stations. British Columbia's borders ought to be better guarded from potentially contaminated incoming watercraft.
- Robust measures to ensure aircraft (i.e., floatplanes) into BC aren't contaminated with invasive mussels
- A contribution to early detection monitoring programs to enable more waterbodies to be regularly tested for invasive mussels.

Concurrently to supporting a stronger partnership with the Province of BC in preventing an invasion, the federal Department of Fisheries and Oceans needs to take more action on containing mussel infestations and fully enact the Aquatic Invasive Species Regulations of the *Federal Fisheries Act*. One such measure ought to be that all watercraft leaving invasive mussel-infested jurisdictions be inspected, and decontaminated if necessary, thereby closing primary pathways of new invasions.

¹ Report on Aquatic Invasive Species, Commissioner of the Environment and Sustainable Development to the Parliament of Canada, 2019.

² *ibid.*

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iv. Recent audit report findings on Zebra and Quagga Mussel prevention

A recently released audit report from the Commissioner of the Environment and Sustainable Development on Aquatic Invasive Species³ is consistent with our concerns about the lack of urgency and intervention by the Department of Fisheries and Oceans:

- The audit found that DFO lacked a strategic approach to prevent aquatic invasive species from entering and spreading within Canada
 - In particular, DFO did not distinguish its regulatory responsibilities from those of the provinces and territories and this is part of the reason why international borders between Canada and USA were not sufficiently protected against the entry of Zebra and Quagga Mussels
- It also found that DFO (and the Canada Border Services Agency) did not adequately enforce the Aquatic Invasive Species Regulations
- It also found that DFO did not respond rapidly to known threats.

v. Concluding remarks

Our belief that the investment and actions by the federal government on invasive mussels have been inadequate and disproportionate, combined with the recent findings of the audit report, lead us to conclude the National Aquatic Invasive Species Program is not effective in protecting ecosystems in BC nor is it serving the socioeconomic interests and values of British Columbians. British Columbia – the home province of lake ecosystems of significant ecological and economic importance – is at risk of being invaded by the most impactful and devastating aquatic invasive species. When one considers all that is at risk in the Shuswap watershed and the rest of BC, and the current likelihood of an invasion due to gaps in preventative measures, one does have to wonder why more isn't being done to prevent new invasions of these mussels. Prevention is more sensible and responsible, and less costly, than controlling it afterward.

All of these considerations should inform a larger proportion of federal investment and effort being directed at protecting British Columbia from Zebra and Quagga Mussels.

Thank you for your consideration of our input to the aquatic invasive species program review. It is our hope that the Committee can determine a more effective and prioritized method of distributing federal funds and effort to prevent and manage aquatic invasive species.

³ *ibid.*

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| 2 (b) | Correspondence: [LATE AGENDA ITEM] Letter from Henry Bremer, Kamloops Okanagan Dairy Association, June 6 th 2019 | 9:20 |

[Received by e-mail to msimpson@fraserbasin.bc.ca]

Hello Shuswap Water Council

We are the association representing the 75 family dairy farms in the North Okanagan and Shuswap area. Our member's farms range in area from Edgewood to Kamloops, but are mostly situated in the Armstrong, Enderby, and Salmon Arm areas.

KODA suggests that agriculture producers and SWC work together to encourage research and education in the area of regional crop production and nutrient usage. This important work has been lost to continual government cutbacks.

Without it, producers will not have the knowledge needed to maximize production and use nutrients in a environmentally friendly manner, matching the needs of the crops we grow. We believe that such research would be beneficial to the entire region by helping grow the economic benefits of agriculture, and maintaining the pristine environment.

KODA would be interested in participating in trial plots on the most common soil types in the Salmon and Shuswap river low lands to study the effects of soil nutrition on the most common crops grown by livestock producers (grass, corn, alfalfa) to determine the soil nutrient requirements to produce the optimal forage crop quantities and volumes, relevant to local soils and weather conditions.

Potential related research: To determine the source of total phosphorus (P) or soluble P, whether the source is crop residues, soluble soil P residues, wildlife, erosion, or natural sources of P, specifically targeting the low land run off times in March and April.

Thank You for your consideration

Henry Bremer, President
Kamloops Okanagan Dairymen's Association (KODA)

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| 3 | Old business: Draft summary of the Water Protection Advisory Committee meeting, May 15 th 2019 | 9:30 |

**Water Protection Advisory Committee Meeting
Wednesday May 15, 2019 | 9:30 AM – 2:30 PM
Splatsin Development Corporation Boardroom
5655 Hwy 97A, Enderby, BC**

Draft meeting summary as at May 21, 2019

Meeting objectives

1. Clarify the next steps for nutrient management and make a recommendation to the Shuswap Watershed Council
2. Receive update on research and lake coring
3. Tour the Gardom Lake constructed wetland

Attendance (committee members)

Laura Code, Ministry of Agriculture (from 9:40AM)

Jeff Curtis, UBC Okanagan

John Dedood, Agriculture – dairy

Dennis Einarson, Ministry of Environment and Climate Change Strategy (from 9:40AM)

Lee Hesketh, Agriculture – cattle

Lorne Hunter, Agriculture – dairy

Robyn Laubman, Splatsin Development Corporation

Megan Ludwig, Associated Environmental

Ralph Vandalfsen, Agriculture – dairy (from 9:40AM)

Guests

Christine Campbell, ALUS Canada (by phone, to 11:15AM)

Nicholas Hebda, UBC Okanagan

Rhonda King, ALUS Canada (by phone, to ~11:30AM)

Pete Spencer, Environmental Farm Plan Program (from 9:50AM)

Ian Walker, UBC Okanagan

Staff

Erin Vieira, Shuswap Watershed Council c/o Fraser Basin Council

Mike Simpson, Shuswap Watershed Council c/o Fraser Basin Council

Meeting Outcomes

1. Committee members discussed nutrient research results in the context of other initiatives, but no clear recommendation was made.
2. Updates provided for UBC-O water quality monitoring and Mara Lake core sample.
3. Gardom Lake constructed wetland was toured, next planned phases discussed.

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Summary of discussions, decisions and action items

Welcome, Introductions, Agenda and Objectives

Mike Simpson welcomed everyone and thanked them for their time, and thanked Robyn Laubman for hosting and coordinating meeting space. Secwepemc territory was acknowledged. Introductions were made around the room. The agenda was reviewed and accepted as presented.

Meeting Summary from December 5, 2018

The meeting summary from December 5, 2018, was approved with the modification of adding that not all present support the use of the term “sensitive” as it pertains to describing the Shuswap watershed or “degradation” as it pertains to inputs of nutrients from agriculture and municipal wastewater. Old action items were reviewed and were all completed.

Research Update – Nutrient and Water Quality Monitoring, Mara Lake Core Sample

Jeff Curtis noted that the 3 years of water quality monitoring in the lower Shuswap River and Salmon River will finish at the end of May. Jeff will provide a final report by August.

Nicholas Hebda and Ian Walker noted that the analysis of the lake core taken from the bottom of the deepest part of Mara Lake is currently being dated using cesium and lead isotopes, and that subsequent to that Nicholas will analyze and re-construct historic nutrient-loading. This is anticipated to provide about 150 years of history of the changes to the nutrient levels in the lake. Report to be expected in fall 2019, by early December at the latest.

Learning About Different Partnership Opportunities

Two presentations were received about possible partnership opportunities, should a decision be made to implement a nutrient management program as outlined in the Shuswap Watershed Council 5 Year Plan:

- Christine Campbell and Rhonda King of ALUS Canada (ALUS = Alternative Land Use Systems) presented on what ALUS is, how they work, what kind of projects they get involved in, and how they are funded. See their presentation named ALUS 15may19.pdf circulated with this meeting summary. They can be contacted at ccampbell@alus.ca and rking@alus.ca with any further questions.
- Pete Spencer, Planning Advisor with the Environmental Farm Program (EFP), described the history EFPs in BC but in particular the Shuswap and Okanagan, the requirements of the program, and the funding approach. Pete can be reached at pspencer@uniserve.com with any further questions.

A very brief summary of the two programs, within the context of SWC’s interests:

- ALUS Canada is a national charitable program that invests in agriculturalists’ stewardship initiatives; it is a ‘payment for ecosystem services’ program. ALUS is not yet in BC; having a partnership with local community is key to a successful ALUS project because the local community drives the types of projects and convenes the local partners; generally seek farmer/landowner to pay 50% of project/establishment costs, then the farmer/landowner receives a payment for the ecosystem service, typically under a 5-yr agreement.
- EFP raises awareness for and encourages farm stewardship, and reduces risks to the environment as a result of farming. EFP has been around a long time, unknown exactly how many EFPs are active and in place in lower Shuswap and Salmon Rivers; a farmer needs to have an active EFP in

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place to get project funding; challenge is annual funding from feds/province; there is a well established list of 25 project best management practices (BMPs) and 13 engineering BMPs that farmers can receive funding for; EFPs are confidential, so there are no monitoring results or confidence for a funder (e.g., SWC) that BMPs will remain long-term.

Next Steps for Nutrient Management

Mike outlined the context of the nutrient research findings, the new Agricultural Environmental Management Code of Practice, the draft water quality objectives for Shuswap Lake being developed by the BC Ministry of Environment (Dennis noted a new approach is being taken), water quality attainment results for Salmon River (Dennis reported that generally, the water quality objectives for Salmon River are not being met), and the nutrient management strategies proposed by Ruth McDougall in 2014. Additional context pieces added were modelling options to determine what management activities would be most effective and feasible to reduce nutrient inputs to rivers and lakes, the results of the Mara Lake core sample, and other options being developed such as small scale centrifuges/digesters.

Some of those present shared their thoughts on next steps (unattributed list):

- The SWC ought to set objectives – what level of P in Shuswap and Mara Lakes are we managing for, or to?
 - At a minimum, wait for the province to establish water quality objectives
 - Consider setting our own objectives, not just water quality parameters, but others
 - Consider waiting for Mara Lake core sample results to understand the history
- The SWC ought to pursue modelling to determine what nutrient management activities would be most effective and feasible at reducing nutrient loading to rivers and lakes
 - Concern expressed about what data and what assumptions are used
 - Model BMPs from the EFP, or the nutrient management strategies from McDougall
- If SWC can't roll out the \$50 000/year program as originally envisioned in Year 4 and 5, consider a smaller amount of funds for a small scale project or a pilot project this year
- Clarify what nutrient management activities farmers/landowners are willing to do, possibly through a survey

Some of those present noted the following should be considered before taking next steps:

- The agriculture sector is constantly improving, they don't apply chemical fertilizers, nutrients are managed more carefully than in the past
- Avoid individual, isolated nutrient management projects – it would be ideal to have a significant number within a specific area to monitor and measure results
- Impacts of projects implemented may not be measurable for years to decades (i.e., due to the effects of 'legacy P' in the soils needing to be depleted first)
- Shuswap and Mara Lakes are pristine environments – we are aiming for maintenance or ongoing improvement of water quality, not fixing a degraded system
- The balance of where this goes from a scientific issue to a political issue, and public perception of different management actions
- Waterfront property owners are the beneficiaries of maintaining a low-nutrient aquatic environment
- Agricultural Environmental Code of Practice is new, farmers are still understanding it and they need support
- Lack of funding for basic crop research and Ministry of Agriculture extension on nutrient management

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Language and Terminology

Not all present support the use of the terms sensitive or degradation. Alternatives for sensitive were 'responsive' or 'vulnerable to change'. Alternatives for degradation are 'nutrient loading/loaded'.

ACTION ITEMS:

- None.

Next Meeting, Draft Agenda

A half-day in fall 2019. Mike to seek a date through a doodle scheduling poll a few weeks in advance.

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| 4 | Program Managers' Report | 9:55 |

Program Managers' Report

The Annual Highlights Summary, covering the SWC's program operations for April 2018 – March 2019, was completed in April. The four-page summary is on the SWC website, www.shuswapwater.ca. The report has been emailed to SWC members on May 8th; and print copies have been provided to city halls, band offices, and regional district offices.

Financial summary for the year (April 1st 2018 – March 31st 2019)

INCOME

| Source | Amount received (\$) |
|--|----------------------|
| Surplus SWC funds (from March 31 st 2017) | 136,978 |
| CSRD (C, D, E, F and District of Sicamous) | 160,000 |
| TNRD | 53,600 |
| City of Salmon Arm | 40,000 |
| Adams Lake Indian Band | 1300 |
| Total | 391,878 |

EXPENSES

| Activity (per 5-yr plan) | Budget (\$) | Expenses (\$) Apr 1 st – Mar 31 st | Variance (\$) |
|---|----------------|---|----------------|
| Water Quality Monitoring – team/annual work planning | 8750 | 6231 | 2519 |
| Water Quality Monitoring – monitoring expenses | 57,650 | 30,599 | 27,051 |
| Water Quality Protection – advisory committee | 6200 | 5202 | 998 |
| Water Quality Protection – nutrient research | 47,800 | 46,708 | 1092 |
| Water Quality Protection – water quality improvement projects/remediation | 12,400 | 4928 | 7472 |
| Water Quality Protection – education initiatives | 7900 | 1642 | 6258 |
| Water Quality Protection – other education initiatives, pollution reduction | 2000 | 47 | 1953 |
| Zebra/Quagga Mussel Prevention | 26,850 | 27,750 | -900 |
| Recreation Safety Program | 12,200 | 11,849 | 351 |
| Communications – brand and collateral | 4450 | 4438 | 12 |
| Communications – public engagement | 14,400 | 10,849 | 3551 |
| Communications – annual water quality report | 19,000 | 18,467 | 533 |
| Management and facilitation | 27,050 | 24,631 | 2419 |
| Administration and fund development | 13,700 | 11,640 | 2060 |
| Total program expenses | 260 350 | 204,982 | 55,368 |
| Operating reserve | 131,528 | 0 | 131,528 |
| Total for 2018-19 | 391,878 | 204,982 | 186,896 |

| Item No. | Name | Time |
|----------|-------------------------------------|-------|
| 5 | Biosolids resources for information | 12:45 |

Background

A recent proposal for land application of biosolids in the Turtle Valley, near Falkland and Chase, has generated some concern. Some community members are curious and apprehensive about contaminants that may be in biosolids, how contaminants may transfer to water and food products, and how the effects of the land application on nearby streams and lakes will be monitored.

Biosolids are, and continue to be, extensively researched. There is an abundance of research that indicates the benefits of biosolids as a soil conditioner. However, studies about the health risks of biosolids are less conclusive and more subjective. It can be difficult to find credible, science-based information about biosolids.

SWC staff have compiled the following resources to help inform a roundtable discussion about biosolids, and a potential role for the Council as a leader in providing water quality information.

Biosolids resources

The BC Ministry of Environment has compiled several documents on their website about biosolids, including what they are, how they're regulated, how different jurisdictions around the world manage them, and recent research on biosolids. These documents are posted on this website: <https://www2.gov.bc.ca/gov/content/environment/waste-management/food-and-organic-waste/biosolids-in-bc>.

The Organic Matter Recycling Regulation, which governs the production and use of biosolids in British Columbia, can be found here: <https://www2.gov.bc.ca/gov/content/environment/waste-management/food-and-organic-waste/regulations-guidelines>.

The BC Ministry of Environment has also created a special webpage with resources specifically about the land application of biosolids to the Turtle Valley Bison Ranch: <https://www2.gov.bc.ca/gov/content/environment/air-land-water/site-permitting-compliance/turtle-valley-biosolid-application>.

NutriGrow, the proponent of the biosolids land application in the Turtle Valley hired by the City of Kamloops, has written two letters to the Turtle Valley community about their proposal. The letters include soil testing results. Those can be found on this website: <https://nutrigrow.ca/resources/>.

A Master's Thesis by Sarah Whitehouse, a student at Thompson Rivers University, on public perceptions of biosolids in British Columbia, can be found here: https://www.tru.ca/_shared/assets/Sarah_Whitehouse_thesis45241.pdf

More general information about biosolids, from Northwest Biosolids based in Washington State. <https://nwbiosolids.org>