SHUSWAP watershed council

AGENDA PACKAGE FOR:

Council Meeting
Wednesday December 11th 2019 | 10:15 AM – 2:45 PM
Columbia Shuswap Regional District Boardroom
555 Harbourfront Drive NE, Salmon Arm

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1.	September 11th 2019 meeting summary for approval	10:25

Council Meeting
September 11th 2019 | 10:00 AM – 2:00 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. Receive operations and financial update from Program Managers
2. Receive 2018 water quality report
3. Receive guest presentation from Bruce Weicker and Cliff Doherty, Royal Canadian Marine Search & Rescue
4. Receive guest presentation from Dr. Jeff Curtis, UBC-Okanagan

Present

Paul Demenok, Chair – Columbia Shuswap Regional District, Area C
Jay Simpson, Vice Chair – Columbia Shuswap Regional District, Area F
Rene Talbot – Columbia Shuswap Regional District, Area D
Ken Christian – Thompson-Nicola Regional District, City of Kamloops
Rod Crowe – Thompson-Nicola Regional District, Village of Chase
Tim Lavery – City of Salmon Arm
Colleen Anderson – District of Sicamous *(to 1:30 pm)*
Denis Delisle – Regional District of North Okanagan, Area F
Rick Fairbairn – Regional District of North Okanagan, Area D *(to 2:10 pm)*
Dennis Einarson – BC Ministry of Environment and Climate Change *(from 10:45 am)*
Randy Wood – Community Representative
Lorne Hunter – Community Representative
Sharon Bennett – Community Representative
Natalya Melnychuk – Community Representative

Erin Vieira and Mike Simpson – Fraser Basin Council

Observers

Ray Nadeau *(from 1:00 pm)*

Regrets

Rhona Martin
Laura Code
Dave Nordquist
Steven Teed

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Call to Order

The meeting was called to order at 10:00 AM by Chair Paul Demenok

Welcoming comments

Chair Demenok introduced Sharon Bennett as a new Community Representative and welcomed her to her first Council meeting.

Adoption of meeting summary

Moved/seconded by Mayor Christian/Director Talbot that:
The summary of the June 12th 2019 meeting of the SWC be adopted.

CARRIED

Report from Chair

No report

Report from Program Managers

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

- Water quality monitoring in the summer months detected unsafe levels of *E. coli* bacteria at some beaches in the watershed, resulting in advisory issues.
- UBC-Okanagan researchers have completed three years of water quality monitoring on Shuswap River and Salmon River for the nutrient research project. Next steps include the completion of a final report, and continuing to engage the agriculture industry, nutrient experts/scientists, advisory committee members, and the BC Ministries of Environment and Agriculture to work toward a nutrient diversion or remediation implementation plan for Spring 2020.
- Staff delivered several education/awareness campaigns for the prevention of Zebra/Quagga Mussel introductions over the summer; additionally, staff worked with the Columbia Invasive Species Society to install new Clean-Drain-Dry signs at boat launches across the watershed.
- Staff are presenting on Zebra/Quagga Mussel prevention at an upcoming conference in October
- Staff delivered several education/awareness campaigns for safe boating and drowning prevention over the summer; marine safety whistles were distributed to recreationists. Over 50 separate campaigns were delivered, which is significantly higher than in previous years thanks to grant funding from Transport Canada for the SWC's Safe Recreation Program.
- Staff provided an update on social media and website analytics: through the spring and summer months, the combined number of impressions through Twitter and Facebook was approximately 70,000

Erin presented a financial report to the end of the first quarter, April 1st – June 30th 2019:

Revenue source for 2019-20	($)
Surplus (from March 31st, 2019)	186,896
CSRD (C, D, E, F and District of Sicamous)	160,000
TNRD	53,600

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City of Salmon Arm	40,000
Adams Lake Indian Band	1300
Grant funding: Transport Canada *Boating Safety Contribution Program*	19,538
Total revenue	**461,334**

	Annual budget ($)	**Expenses ($)**
Water Monitoring Initiative	51,150	11,570
Water Protection Initiative	79,500	19,171
Zebra & Quagga Mussel Prevention Program	30,825	20,981
Safe Recreation Program	26,050	9462
Communications	42,200	8349
Management and Administration	43,150	7394
Operating Reserve	188,459	0
Total expenses to December 31st 2018	**461,334**	**76,927**

Dennis Einarson entered the meeting at 10:45 am

Discussion:
Mayor Rod Crowe inquired about monitoring for Zebra and Quagga Mussels in Alberta. Councillor Colleen Anderson inquired if any research is being done (by other organizations) about treatment methods for invasive mussels. Councillor Tim Lavery inquired if the Province is working with boating stakeholder groups on education and outreach for preventing mussel invasions.

Mayor Ken Christian suggested that staff look at coroners' data from recent years to determine what proportion of water-related fatalities are linked to alcohol consumption. Other SWC members described safe boating campaigns they have seen and thought to be effective.

Councillor Tim Lavery inquired if the SWC has considered making an Instagram account, as another method of communications and outreach.

Action items:
Staff will forward the most recent report from the Province on their Invasive Mussel Defence Program to SWC members

Staff will look into enforcement by the Province of contaminated, quarantined watercraft

Staff will obtain coroners' data and consider new ways to promote sober boating for next season.

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Report from Program Managers: 2018 Water Quality Summary

Erin Vieira reviewed the 2018 Water Quality Summary, which was completed in July and sent out to SWC members and partners by e-mail and posted online (www.shuswapwater.ca). Print copies of the report have been sent to government offices and library branches throughout the Shuswap. The report has been advertised extensively in newspapers.

Discussion

Councillor Colleen Anderson inquired about how to report suspected dumping of grey water into the lake. Dennis Einarson replied that phoning the RAPP line (1-877-952-7277) would be the best way.

Mayor Ken Christian commented on the challenge of describing water quality as being 'good' or otherwise. A key point that must be considered in classifying water quality is its use. He also suggested that interpretation of beach water quality data be interpreted cautiously, as results can be significantly altered by rain.

Chair Demenok inquired if future editions of the water quality report will include water quality trends over time. Erin Vieira replied that the BC Ministry of Environment is working on this, as part of developing water quality objectives for Shuswap Lake. The SWC will work with MOE staff to include these analyses in future reports.

Other updates for information: Provincial Invasive Mussel Defence Program

This item arose out of a brief discussion at the June 12th 2019 SWC meeting, during which a SWC member inquired about the possibility of the SWC supporting the expansion of the Province's K9 unit of the Invasive Mussel Defence Program. Staff discussed this with provincial staff, and relayed the following key points:

- K9s provide a number of benefits to the provincial Program, including multi-purpose detection, evidence recovery, and public education/outreach
- K9s are a long-term commitment, having a 7-9 year career and requiring a full-time handler for that duration
- K9s are a full-time commitment and require a very dedicated handler.
- The initial cost to purchase and train a K9 is insignificant relative to the commitment of training, caring, and exercising.

Discussion

Mayor Ken Christian commented that the cost to the City of Kamloops for an RCMP handler and K9 is over $160,000 per year.

Other updates for information: Canada Border Services Agency Aquatic Invasive Species prevention

Staff have corresponded with the Canada Border Services Agency to determine what measures are in place to prevent the spread of aquatic invasive species (i.e., Zebra and Quagga Mussels) via floatplanes. The CBSA has the following two Memoranda:

Memorandum D19-8-5, *Import Prohibitions and Requirements for Commercial Importers of Aquatic Species and for Travellers Under the Aquatic Invasive*

Species Regulations, which states that conveyances and equipment, including float planes, must be free of invasive mussels.

Memorandum D2-5-12, *Telephone Reporting for General Aviation and Private Boats*, which requires floatplane pilots to inform the Telephone Reporting Centre that floatplanes moving between fresh water bodies are compliant.

These two memoranda only apply to floatplanes entering Canada from outside Canada.

Discussion
Chair Demenok suggested that the SWC collaborate with the Okanagan Basin Water Board and write a join letter to the federal Department of Fisheries and Oceans and Transport Canada.

Action item:
Staff will prepare a letter as described above.

Staff update:

Mike Simpson provided a more detailed update on the Water Protection Initiative:

- Staff participated in a webinar held Aug 19th with participants from Ministry of Environment, Ministry of Agriculture, dairy sector, and environmental groups.
- Staff have corresponded with nutrient experts, David Poon (Min. Agriculture) and Keith Reid (Agriculture and Agri-Food Canada).
- There are several other initiatives underway by other organizations that will have a bearing on nutrient management in the Shuswap watershed, including the development of Water Quality Objectives for Shuswap Lake (MOE); the final results of the research project led by UBC-Okanagan; the new *Agricultural Environmental Management Code of Practice*; a manure centrifuge prototype being tested; the results of the Mara Lake bottom sediment core research; and an invitation from Kamloops Okanagan Dairy Association to the SWC to collaborate on crop research.

Several ideas are being considered for the SWC's next phase of work on Phosphorus mitigation. The SWC will wait for Dr. Curtis' final report before deciding on a course of action, but some possibilities could be forage nutrient research, improving manure storage, mapping low-lying areas and prioritizing locations for wetland development, and/or supporting farmers and landowners in implementing new practices to reduce or intercept Phosphorus use.

Whichever course(s) of action is decided upon, the desired outcomes are that it is agreeable to all parties, will improve nutrient loss to freshwater, and can leverage SWC funding.

Action item:
Denis Delisle requested a copy of Mike's detailed Phosphorus document

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Roundtable Updates

Several SWC members provided updates on water initiatives underway in their organizations:

Director Denis Delisle reported that a large volume of people float down the Shuswap River on tubes in the summer months. There have been issues with safety, parking, and conflicts between tubers, boaters, and private property owners. The Shuswap River Ambassadors has been effective at talking to people about safety and keeping the river clean. The situation could be made even better with a shuttle service (to alleviate parking concerns).

Director Delisle further commented that the RDNO is awaiting feedback from Splatsin on the Shuswap River boating regulations that are in development.

He further reported that RDNO is working on a strategy for restoring lower Gardom Creek, which is subject to flooding. Ashton Creek is also subject to flooding and the regional district is working with Lee Hesketh to restore it.

Director Rene Talbot reported that Fortis has restored a section of Salmon River where erosion recently took place, exposing some of Fortis' underground infrastructure.

Chair Demenok has met with Minister Farnworth regarding Newsome Creek and the concerns for additional erosion and the potential loss of homes into the creek. BC Ministry of Transportation is replacing several culverts to accommodate the creek during freshet. The Chair commented that a full assessment of the Newsome Creek watershed is also needed.

Lorne Hunter reported that Valid Manufacturing has installed a prototype centrifuge on a farm to test the effectiveness of the centrifuge in separating manure into liquid and solid components.

Director Rick Fairbairn reported that the Okanagan Basin Water Board (of which he is a member, representing RDNO), is concerned about the potential listing of the native Rocky Mountain Ridged Mussel as an endangered species. Such a listing may restrict the Board's water milfoil management plan. The RMR Mussel has been recommended for listing as endangered by the Committee on the Status of Endangered Wildlife in Canada, but the matter has been reprieved for now and is referred for more study and consultation.

Mayor Ken Christian reported that Trans Mountain Pipeline expansion project is scheduled to begin near the Kamloops airport later in September. The pipeline will divert bitumen from being carried by rail through the Shuswap.

Mayor Christian further reported that the City of Kamloops has upgraded its wastewater treatment plant to improve the effluent such that more biosolids are created and discharge to the Thompson River is cleaner. The City is now trying to find a solution for storing biosolids; it has an agreement with Arrow Transportation. Arrow is looking for an alternative to the Turtle Valley.

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Lunch break

SWC members took a lunch break from 12:00 – 12:45 pm.

Guest presentation: Bruce Weicker and Cliff Doherty

Chair Demenok introduced Mr. Bruce Weicker and Mr. Cliff Doherty from the Royal Canadian Marine Search & Rescue, Station 106 Shuswap (RCM-SAR).

Mr. Cliff Doherty explained the feasibility study being undertaken by RCM-SAR for a regional water safety training centre in the Shuswap. The purpose of the study is to quantify the need for such a training centre. He acknowledged funding from the SWC for the study, as well as from other sources.

Mr. Bruce Weicker explained that the RCM-SAR is also designing a new boathouse to house their two rescue boats and training boat, to be built in Sicamous. The concept design will include a training room.

Mr. Weicker gave an overview of the RCM-SAR's operations during the summer season. They were called out on 16 missions, which is less than half of their average summer call-outs; of these 16, a significantly higher proportion were to cabins (as opposed to on-water). The *Kids Don't Float* lifejacket loaner kiosks continue to be popular, there are 14 kiosks on Shuswap Lake.

Discussion

Director Talbot inquired about the cost of the boathouse, Mr. Weicker estimated between 400 – 700 thousand and that RCM-SAR is considering grant applications to provincial and federal government organizations.

Councillor Anderson inquired about the type of training the centre would offer; Mr. Weicker explained it would be several types including search and rescue, boat operation, radio operation, and more.

Director Fairbairn inquired about the 'parent organization' to RCM-SAR Station 106 Shuswap. Mr. Weicker explained that RCM-SAR groups are 're-branded' from the Canadian Coast Guard Auxiliary; there are 33 RCM-SAR stations on the BC coast, and one inland station which is based in Sicamous. RCM-SAR is not formally connected with other community-based based Search and Rescue groups, although they do share information and attend training session together.

Councillor Lavery inquired about the possibility of engaging youth in RCM-SAR; Mr. Weicker replied that they have one junior member who, with parental consent, can participate in missions.

Chair Demenok thanked Mr. Weicker and Mr. Doherty for their presentation.

Guest presentation: Dr. Jeff Curtis

Dr. Jeff Curtis provided an update on the nutrient research underway in the Shuswap River and Salmon River watersheds. The research team has completed three years of data collection, and they are in the final stages of data analysis and reporting.

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The research objective is to obtain credible understanding of where the point and diffuse sources of Phosphorus are, and how Phosphorus is being transported into the Shuswap and Salmon Rivers. Some key points from Dr. Curtis' presentation:

- The research is quantifying the contribution of phosphorus from three sources in both rivers: the upper reaches, the tributaries, and the incremental flow sub-watersheds (ditches, groundwater, seasonal streams)
- The methodology includes components of hydrometrics (measuring and modeling flow from the three aforementioned sources or regions of the rivers); Phosphorus measurements from all sources; and land use coefficients, to estimate annual contributions of Phosphorus from land uses
- Phosphorus (P) loads can be expressed in terms of concentration (mass per volume, i.e. mg P/Litre) or flux (mass per time, i.e., kg P/year).

Councillor Colleen Anderson left the meeting at 1:30 pm

Results to-date indicate:

- In the Shuswap River watershed, the hydrograph is defined by snowmelt. Phosphorus flux follows the snowmelt. The contributions of Total Phosphorus (TP) from incremental flow sub-watersheds accounts for most of the TP; tributaries and the upper reaches provide very little TP.
- The Salmon River also has a hydrograph and Phosphorus flux that are defined by snowmelt. The tributaries and upper reaches of the watershed contribute the most TP, and the incremental flow sub-watersheds contribute less. These conclusions need to be considered carefully, as the Salmon River is complicated: the upper reaches include an aquifer, and the river 'leaks' (loses surface water to ground water) as it flows downstream. The incremental flows therefore don't appear to have a higher contribution of TP because water and nutrients decrease as the river flows downstream.

Dr. Curtis concluded his presentation by stating that the highest contributions of Phosphorus come from the incremental flow sub-watersheds, in the valley bottoms where the most anthropogenic development is. Management options for the SWC to consider in the future could include flow path management to enhance phosphorus retention (e.g., developing or restoring wetlands, or decommissioning ditches) and/or cultural modifications (changing human behaviour with regards to Phosphorus use in the watershed), and/or doing further modeling to project response times and effectiveness of different management options relative to objectives.

Discussion:

Director Simpson inquired if models, such as what Dr. Curtis referred to in his conclusions, are available. Dr. Curtis replied that they are, and that it would be a matter of carefully selecting the right one.

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Lorne Hunter inquired about data from monitoring the lower sections of the rivers. Dr. Curtis replied that the final report will include data, including flux. He cautioned that in looking at water quality data, the flux should be given priority because concentrations can be misleading – you may have a high concentration of Phosphorus in an area, but if there's no movement of it, there's no flux.

Director Rick Fairbairn left the meeting at 2:10 pm

Mike Simpson asked if it would make the most sense to focus management actions on the incremental flow sub-watersheds, since they account for the highest proportion of Phosphorus flux. Dr. Curtis replied that the most effective actions will be informed by areas of flux.

Chair Demenok thanked Dr. Curtis for his presentation and remarked that he looks forward to receiving the final report.

Adjourn Meeting adjourned at 2:15 pm.

Item No.	Agenda item	Time
2	Old business: Draft summary of the Shuswap Water Monitoring Group meeting, November 13th 2019	10:30

Shuswap Water Quality Monitoring Group
November 13th 2019 | 10:30 AM – 2:15 PM
Fraser Basin Council Office
200A – 1383 McGill Road, Kamloops

Draft meeting summary as at 22 November 2019
This summary is subject to correction at the next Monitoring Group meeting

Attendance

Clint Wright – Village of Chase
Dennis Dodd – Columbia Shuswap Regional District
Diana Tesic-Nagalingam – Interior Health Authority
Sue Davies – Columbia Shuswap Invasive Species Society
Dan Ferguson – First Nations Health Authority
Trever Andrew – Adams Lake Indian Band
Kathrine Stegner – Adams Lake Indian Band
Rob Niewenhuizen – City of Salmon Arm
Dennis Einarson – BC Ministry of Environment & Climate Change Strategy
Lily __ – BC Ministry of Environment & Climate Change Strategy
Deb Epps – BC Ministry of Environment & Climate Change Strategy
Connie Hewitt – Regional District of North Okanagan

Erin Vieira – Fraser Basin Council (SWC program manager)
Mike Simpson – Fraser Basin Council (SWC program manager)

Summary of discussions and action items

Erin welcomed all present and acknowledged Secwepemc Territory. A round of introductions took place.

The draft summary of the last meeting (February 27th 2019) was approved.

1. Review 2018 Shuswap Water Quality Summary

Erin briefly reviewed the 2018 Shuswap Water Quality Summary with Water Monitoring Group (WMG) members (summary available online here). WMG members provided their input:

- Consider increasing graph font sizes to make them easier to read
- The articles in the summary are useful (i.e., invasive mussels, algae blooms, etc.)
- Include aspects of the BC MOE's Shuswap water quality objectives project, when complete, in future editions of the summary. Components to include could be water quality trend analyses and cultural values of water.
- Could potentially report out on issues at beaches at Sandy Point and Pierre's Point (from 2019) in a future edition of the summary.
- Highlight new Provincial Monitoring website in future edition of the summary.

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2	Old business: Draft summary of the Shuswap Water Monitoring Group meeting, November 13th 2019	10:30

Action item: Erin will follow up with Trever and Kathrine in spring 2020 re: preparing an article about Sandy Point/Pierre's Point water quality issue and response.

2. Group discussion: 2019 water quality monitoring

WMG members reviewed the 2019 watershed water quality monitoring plan to confirm that their organizations' water quality monitoring activities took place as planned, or noted any differences.

The Group briefly discussed the water quality advisories that were in place during the summer months at Pierre's Point and Sandy Point campgrounds. Trever advised that ALIB is working on replacing/upgrading septic systems there.

Kathrine inquired about how to remove a vessel from Adams Lake; Dennis E. suggested phoning the RAPP line.

Trever mentioned that Adams Lake Band tracks water quality data on a portable app he developed in 2013. ALIB adopted it in 2018.

Dan commented that First Nations Health Authority samples water quality from beaches on behalf of First Nation communities, but that the data is owned by First Nations. With their permission, FNHA could release that data to the SWC reporting.

Action item: Erin will follow up with WMG members to update the 2019 water quality monitoring table to accurately reflect monitoring activities that took place. Erin will circulate the table to WMG members by email.

Action item: Erin will follow up with Trever to arrange a presentation to the next WMG meeting about the portable water quality data app.

3. Provincial Water Quality Monitoring website

Deb and Dennis E. provided an overview of the new provincial lakes monitoring website, www.gov.bc.ca/lake-monitoring. The website features an interactive map that illustrates locations of the BC Lakes Network Monitoring Program (the long-term monitoring stations that are sampled twice per year, spring and fall). The map is linked to water quality data in the Environmental Monitoring System (EMS). You can click on a point on the map and retrieve information about that monitoring station or download data for that site from the EMS.

Deb clarified that the map does NOT show other special monitoring projects that are taking place in the province, such as attainment monitoring in the Shuswap. Deb also pointed out that the map is still a work in progress, and Shuswap monitoring locations are not fully and accurately populated on the map yet.

Dennis gave an overview of the Okanagan Lake Collaborative Monitoring program and website. The collaborative is a pro-active group of permitted dischargers in the Okanagan that work together to monitor and report on water quality Okanagan Lake (under permit). The website (click here) illustrates the Okanagan Lake watershed and includes links to technical water quality reports prepared by a consultant on behalf of the collaborative. Deb pointed out that within MOE, lots of databases and technological

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infrastructure are currently being upgraded and in the future MOE could explore the possibility of creating a similar resource for the Shuswap.

4. Roundtables Updates

WMG members provided the following updates on initiatives underway within their organizations:

Trever Andrew: working with Priscilla at First Nations Health Authority. ALIB has removed 37 Boil Water and Do Not Consume water advisories that have been on for several years; working on relieving the remaining advisories. Also working on hooking up residences to main water distribution and water treatment plant at Sahaltkum (ALIB main reserve).

Dan Ferguson: recreational water monitoring took place at five sites in July and Aug 2019: LSLIB Quaaout Beach, Sky Blue Resort, Glen Echo, Sandy Point, and Pierre's Point. Within these sites, there were multiple monitoring locations.

Sue Davies: CSISS sampled for invasive mussels at several locations throughout the Shuswap, including plankton tows (for larvae) and substrate samplers (for adults. This monitoring is 'early detection monitoring' which would provide notice of an infestation as quickly as possible, enabling rapid response. CSISS is also working on invasive species prevention via education and outreach.

Diana Tesic-Nagalingam: first time to a Shuswap WMG meeting and looks forward to collaborating with SWC regarding beach water quality.

Clint Wright: happy to collaborate with CSISS and SWC on invasive mussel samplers and signage.

Mike Simpson: Fraser Basin Council is facilitating a flood risk assessment and flood mapping project throughout the whole Thompson watershed. A high-level risk assessment of areas subject to debris flows and clear-water floods is complete and available online. The project also includes a component of LiDAR collection. Another phase of the project will produce detailed flood maps. www.thompsonflood.ca for more information.

Rob Niewenhuizen: the City is doing a site assessment study for a Waste Water Treatment Plant, considering options for moving the current plant as it's reaching its capacity. Public consultation is taking place through the Liquid Waste Management Plan. Also working on electrical upgrades to the water treatment plant.

Dennis Einarson: Salmon River attainment monitoring report is nearing completion. Completion of Water Quality Objectives for Shuswap Lake is being headed by MOE staff in Victoria.

Deb Epps: The Ministry is working on a 'contaminants of emerging concern' project, considering a number of different contaminants (pharmaceuticals, etc.) and what guidelines other jurisdictions have in place for them. Presently, BC has a guideline for EE2 (a synthetic hormone). MOE obtained water quality data from large regional governments and found that many contaminants are below the detection limit in water samples.

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5. Next meeting

The group decided that the next meeting will take place mid- or late-February, or possibly early March. Erin will send out a Doodle poll to WMG members in January.

The tentative agenda will include: 2020 watershed water quality monitoring plan; the Shuswap Watershed Council contingency fund, Trever Andrew's water quality app, and Salmon River watershed objectives. The meeting will likely be held in Salmon Arm.

Meeting adjourned at 2:15 pm.

Item No.	Agenda item	Time
3	New business: SWC meeting schedule for 2020	10:50

2020 Meeting Schedule

	Date	Draft agenda[1]
4th quarter (2019-20)	March 11th	Election of Chair and Vice Chair 2020-21 work plan presentation and approval Financial and program operations update Business arising
1st quarter (2020-21)	June 10th	Financial and program operations update 2017-18 Annual report Business arising
2nd quarter	September 9th	Financial and program operations update Business arising
3rd quarter	December 9th	Financial and program operations update Business arising

Meetings are held once per quarter, on the second Wednesday of the month, approximately 10:30 AM – 2:30 PM.

Meetings are held at the Columbia Shuswap Regional District Boardroom unless otherwise noted.

Federation of Canadian Municipalities Conference and Trade Show: June 4th – 7th 2020 @ Toronto

Union of BC Municipalities Convention: September 21st -25th 2020 @ Victoria

[1] The draft agenda, at minimum. The full agenda will be posted at www.shuswapwater.ca approximately one week in advance of meetings.

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4	Report from Program Managers	11:00

Program Managers' Report

Financial summary for the second quarter (April 1st – October 31st 2019)

INCOME

Source	Amount received ($)
Surplus SWC funds (from March 31st 2019)	186,896
TNRD	53,600
CSRD (C, D, E, F and District of Sicamous)	160,000
City of Salmon Arm	40,000
Adams Lake Indian Band	1,300
Grant funding: *Transport Canada Boating Safety Contribution Program*	19,538
Total	**461,334**

EXPENSES

Activity (per 2019-20 work plan)	Budget ($)	Expenses ($) Apr 1st – Oct 31st
Water Quality Program: Water Monitoring Initiative	51,150	11,930
Water Quality Program: Water Protection Initiative	79,500	22,051
Zebra and Quagga Mussel Prevention Program	30,825	21,781
Safe Recreation Program	26,050	20,104
Communications	42,200	16,301
Administration	43,150	14,966
Sub-total (Operating Expenses)	**272,875**	**107,133**
Operating Reserve	188,459	0
Total for 2019-20	**461,334**	**107,133**

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5	Information for discussion	1:30

Next steps on Phosphorus management/mitigation (updated December 4th 2019)

The following background information, objectives and desired outcomes, and project ideas (a running list compiled from committee and Council meetings, to-date) are offered for the SWC to consider in determining next steps on Phosphorus management and mitigation.

Background

The SWC's five-year plan identifies an objective within the Water Protection Initiative to support phosphorus (P) remediation and mitigation projects to improve water quality. Phase 1 (2016-2018) funded small demonstration projects to improve water quality at Alderson Creek and Gardom Lake.

In Phase 2 the SWC planned to implement phosphorus mitigation projects, commencing as early as 2019 pending the results of a three-year nutrient research project led by UBC-Okanagan, in partnership with the SWC. It's anticipated that these projects would also draw upon best management practices outlined in McDougall (2014) to reduce the movement of P to surface water. $50,000/year was budgeted for Phase 2 in 2019 and 2020, intended to be granted to proponents of nutrient remediation projects.

Work completed to-date

- Nutrient research data collection period complete. Master's thesis (M. Ludwig) complete. Final report (Dr. J. Curtis) forthcoming. See Appendix 1 for a simplified map of results to-date.
- SWC Water Protection Advisory Committee meeting was held on May 15th 2019 to receive research results to-date and discuss potential nutrient mitigation projects. No clear direction was given by the committee.
- SWC meeting was held on June 12th 2019. No clear direction was provided.
- A follow-up phase of nutrient research, involving the collection and analysis of a lake-bottom sediment sample for historic nutrient loading, is underway.

'Pieces of the puzzle' to consider in determining SWC's next steps on P

- Shuswap Lake water quality objectives (a MOE-led initiative, underway)
- Final report from Dr. Jeff Curtis on UBC-O led nutrient research
- Core sample from Mara Lake sediment analysis
- Water quality attainment monitoring in the Salmon River underway, complete in 2019
- New *Agricultural Environmental Management Code of Practice*
- Manure centrifuge trial by Valid Manufacturing

Desired outcomes of SWC P-management/mitigation projects

- Effective management actions that will reduce nutrient loss to freshwater (i.e., not experimental methods)
- Projects should leverage SWC funds
- Agreement by all parties/sectors on actions taken, including landowners and producers
- SWC funds allocated to incremental nutrient management strategies by landowners (i.e., not on mandated requirements)

What do we know so far? (summarized from M. Ludwig's research presented to SWC September 19th 2018 and from J. Curtis September 11th 2019)

- Anthropogenic activities are the main contributors of Phosphorus to the Salmon River and Shuswap River

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- Anthropogenic contributions of P in the 'Incremental Flow Sub-watersheds' and tributaries are the highest, and within the ranges of what's reported in scientific literature
- Background levels of P coming from the upper watershed areas is very low
- The Shuswap River and Salmon River are sensitive systems (having low back-ground levels of P) and therefore small additions of P could result in large changes
- 'Legacy P' will play a significant role in the outcome, and changes to surface water may not be visible for several years after implementing nutrient mitigation projects and improving nutrient management in the watershed

Possible project ideas going forward

The following ideas have been identified from earlier discussions, and may be undertaken to help identify where to implement nutrient management and mitigation projects:

- Forage nutrient research or regional crop production and nutrient usage (correspondence from H. Bremer on behalf of Kamloops Okanagan Dairy Association, June 6th 2019)
- Determine manure storage areas as a point-source in the watershed (as potential project partners)
- Consider and take direction from UBC-O final report and research:
    - Where is P coming from – specifically, which geographic Incremental Flow Sub-watersheds?
    - What form of P is transferring to water and is it transporting via erosion, overland flow, or groundwater seepage?
- Undertake modeling to determine which beneficial management practices will be most effective at reducing P losses to freshwater
- Lean on Ministry of Agriculture Resource Management staff for expertise, guidance
- Determine whether irrigation with nutrient-rich groundwater in Salmon River watershed is feasible

Possible actions for early 2020 to plan and prepare an approach

- Host a workshop/deliver presentations to producers and landowners on nutrient research results – utilize Dr. J Curtis or M. Ludwig
- Develop a granting program to solicit proposals from producers/landowners for activities for financial support (e.g., wetland establishment, riparian restoration, manure management)
- Map out incremental flow sub-watersheds (IFSW) in the lower Shuswap and Salmon Rivers, overlay property boundaries, land uses, and lower slopes of fields to guide where to implement projects
- Proceed with modelling to identify most effective activities