Okanagan Basin Water Board Meeting Agenda

DATE: Tuesday, March 3, 2020

TIME: 10 a.m. to 2 p.m.

PLACE: Regional District of Okanagan-Similkameen
101 Martin Street, Penticton, B.C.

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1. CALL MEETING TO ORDER
   - 1.1 Acknowledgement of First Nations Traditional Territory

   We acknowledge that we are holding this meeting on the unceded territory of the Syilx Okanagan Nation.

2. INTRODUCTION OF LATE ITEMS
   - 2.1 Final version of source protection letter to province

3. APPROVAL OF AGENDA

4. ADOPTION OF MINUTES
   - 4.1 Minutes of the Regular Meeting of the Okanagan Basin Water Board of Feb. 4, 2020 at Regional District of Central Okanagan *(page 1)*

5. DELEGATION
   - 5.1 Presentation by Lisa Scott, Executive Director of Okanagan and Similkameen Invasive Species Society (OASISS), on 2019 invasive mussel monitoring and outreach

6. STAFF REPORTS
   - 6.1 Executive Director Report *(page 8)*
   - 6.2 Water Stewardship Director Report *(page 11)*
   - 6.3 Operations and Grants Manager Report *(page 17)*
   - 6.4 Communications Director Report *(page 18)* *(resolution requested)*
   - 6.5 Policy and Planning Specialist Report *(page 22)*

7. NEW AND UNFINISHED BUSINESS
   - 7.1 OBWB Draft Strategic Plan 2020-2024 Tracking Measures Memo *(page 25)*
     - 7.1.1 OBWB Draft Strategic Plan 2020-2024
     - 7.1.2 OBWB Draft Tracking Measures for Strategic Plan
   - 7.2 Invasive Mussel Update Memo *(page 40)*

8. CORRESPONDENCE
   - 8.1 Township of Spallumcheen letter to Federal Fisheries Minister Jordan regarding Prevention of Invasive Mussels *(page 42)*
   - 8.2 Letter from Earle Anthony and Glenn Sinclair re: strategic OBWB initiatives *(page 47)*

9. NEXT MEETING
   - 9.1 The next meeting of the Okanagan Basin Water Board will be Tuesday, April 7, 2020 at 10 a.m. at Regional District of North Okanagan in Coldstream.

10. ADJOURNMENT

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 4.1

MINUTES OF A REGULAR MEETING OF THE OKANAGAN BASIN WATER BOARD HELD FEBRUARY 4, 2020, AT REGIONAL DISTRICT OF CENTRAL OKANAGAN

1450 KLO RD., KELOWNA, B.C.

PRESENT

Chair Sue McKortoff	Regional District Okanagan-Similkameen
Vice-Chair Cindy Fortin	Regional District Central Okanagan
Director Victor Cumming	Regional District North Okanagan
Director Rick Fairbairn	Regional District North Okanagan
Director Bob Fleming	Regional District North Okanagan
Director James Baker	Regional District Central Okanagan
Director Colin Basran	Regional District Central Okanagan
Director Toni Boot	Regional District Okanagan-Similkameen
Director Rick Knodel	Regional District Okanagan-Similkameen
Director Bob Hrasko	Water Supply Association of BC
Director Denise Neilsen	Okanagan Water Stewardship Council

ABSENT

Director Christopher Derickson	Okanagan Nation Alliance

STAFF

Anna Warwick Sears	Executive Director
Nelson Jatel	Water Stewardship Director
Corinne Jackson	Communications Director
James Littley	Operations and Grants Manager
Kellie Garcia	Policy and Planning Specialist

GUESTS

Tessa Terbasket	Okanagan Nation Alliance
Doug Gilchrist	City of Kelowna

1. CALL MEETING TO ORDER

Exec. Dir. Sears called the meeting to order at 10:01 a.m.

2. ELECTION OF CHAIR & VICE-CHAIR

2.1 Board appointments and elections for 2020

Dr. Sears welcomed directors appointed for 2020.

Directors appointed to the board:
From **Regional District of North Okanagan**
- Mayor Victor Cumming
- Director Rick Fairbairn
- Director Bob Fleming
- Alternates – Christine Fraser, Amanda Shatzko, Shirley Fowler

Regional District of Central Okanagan
- Mayor James Baker
- Mayor Colin Basran

Mayor Cindy Fortin
Alternates – Mark Bartyik, Charlie Hodge, Stephen Johnson

Regional District of Okanagan-Similkameen
Mayor Toni Boot
Director Rick Knodel
Mayor Sue McKortoff
Alternates – Mark Pendergraft, Subrina Monteith, Doug Holmes

Water Management Appointments
Okanagan Nation Alliance
Chief Chris Derickson
Alternate – Chief Chad Eneas
Water Supply Association of BC
Mr. Bob Hrasko
Alternate – Ms. Zee Marolin
Okanagan Water Stewardship Council
Chair Denise Neilsen
Alternate – Vice-chair Scott Boswell

Dr. Sears requested nominations for chair. Dir. Knodel nominated Dir. McKortoff. Dir. McKortoff accepted the nomination. There being no other nominations, Dir. McKortoff was re-elected chair.

Dr. Sears requested nominations for vice-chair. Dir. Boot nominated Dir. Fortin. Dir. Fortin accepted the nomination. There being no other nominations, Dir. Fortin was elected vice-chair.

3. ACKNOWLEDGMENT

Chair McKortoff respectfully acknowledged that the meeting was being held on the traditional and unceded territory of the Syilx Okanagan Nation and the home of Westbank First Nation.

4. APPROVAL OF AGENDA

"THAT the agenda of the regular meeting of the Okanagan Basin Water Board of February 4, 2020 be approved."

CARRIED

5. ADOPTION OF MINUTES

5.1 Minutes of the Regular Meeting of the Okanagan Basin Water Board of Dec. 3, 2019 at Regional District of Central Okanagan.

"THAT the minutes of the regular meeting of the Okanagan Basin Water Board on Dec. 3, 2019 at Regional District of Central Okanagan be approved."

CARRIED

6. DELEGATION

6.1 Presentation by Lora Nield – Ecosystems Section Head with B.C. Ministry of Forests, Lands and Natural Resource Operations and Rural Development on milfoil permitting procedures and the Rocky Mountain Ridged Mussel

Ms. Nield provided an overview of the provincial government's ecosystems department, noting it works on habitat protection and endangered species, and introduced Mark Phillpotts with the resource management team.

Nield provided an overview of the province's permitting process with OBWB, noting discussions began in 2010 around milfoil control permits and the desire to address species at risk, based on the previous B.C. Water Act. In 2013, some conflicts between Rocky Mountain Ridged Mussels (RMRM) and milfoil rototilling were identified and restrictions were put in place for the OBWB's five-year milfoil control permit.

In 2018, the ministry updated its 2009 "Okanagan Large Lakes Foreshore Protocol" which was intended to look at impacts from multiple projects and provide direction to applicants. The update included mapping based on new information, including expanded red zones in Vernon where live RMRMs were identified. In August 2018, the OBWB applied to renew its five year permit. The province issued an initial permit in April 2019 and a revised permit on Sept. 4. Nield said the revised permit limited rototilling to certain depths in some areas, and added harvesting in other areas until further planning to address rototilling and its impact to RMRMs could be discussed with OBWB.

The province, she added, is talking with universities regarding research to better understand the risks of rototilling to the RMRM. In response to a question from Dir. Fortin, Mr. Phillpotts said the research will also look at the impact of uncontrolled milfoil on the mussel. Ms. Nield added that the ministry would like to discuss the research questions with the Water Board.

Dir. Cumming voiced his concern about the province's decision to limit rototilling at Kin Beach in Vernon and its impact, adding that this is a small stretch along the Okanagan's foreshore but with significant recreational value.

In response to additional questions, provincial staff said adjustments have been made to the permit and there is the potential for additional changes, in part based on new mussel survey information.

Dir. Boot asked for an update on milfoil control in Vaseux Lake. Mr. Littley noted that Penticton and Osoyoos Indian Bands and Okanagan Nation Alliance are still reviewing the idea. He added that the Westbank First Nations has requested milfoil treatment on one of their beaches. Dir. Boot asked that Summerland's foreshore also be looked at for milfoil control.

Dir. Basran added that he agrees with the province that communication could have been better and that decisions around the permit seemed to be a one-sided decision-process, leading to frustration and upset. Ms. Nield responded that a decision was made to get the permit in place as quickly as possible but that better communication was important.

In referring to upcoming research, Dir. Knodel noted the importance of remembering that milfoil is an invasive species.

Mr. Littley added that recent discussions with the province have been productive and OBWB can provide a list of areas of high importance which the province can review to manage conflicts. In response to questions, Mr. Phillpotts added that the RMRM is on the federal radar as a species of special concern and if they find the province is not doing enough to mitigate impacts to the RMRM they could step in.

Dr. Sears responded, noting the federal government did not up-list the species and that communication from the federal government to OBWB has said the province is responsible for regulations. Ms. Nield added that if the OBWB is told in advance that there are mussels in an area and it rototills the area and harms the species that it would be in the board's best interest to get a mussel kill permit from the federal government.

7. STAFF REPORTS

7.1 Executive Director Report

Dr. Sears noted letters were sent from the board to the province with input on B.C.'s climate strategy, Emergency Program Act modernization and Water Quality Objectives for the Osoyoos Aquifer. There will be another opportunity for input on watershed protection in March, she added. It was noted that the Water Stewardship Council, and in particular former chair Dr. Brian Guy, has been instrumental in shepherding these letters, as per the council's mandate. Directors thanked the council for its input.

Flood mapping LiDAR data is being forwarded to communities. Local government staff who have questions or requests for the information are asked to contact Dr. Sears. There was discussion about the importance of allowing third party access to the data. Staff were asked to draft a letter to GeoBC or B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development requesting that this be addressed quickly. Dir. Fortin further suggested that the recent Auditor General's report that speaks to this concern be also noted.

"THAT the OBWB draft a letter to the Province of B.C. urging that third party access to recently collected LiDAR data be addressed and reference the Auditor General's report which noted similar concern."

CARRIED

Dr. Sears provided an overview of a proposal from UBC-Okanagan's School of Engineering to undertake a flood mitigation planning review and gap analysis.

"THAT the OBWB enter into a contract with UBC-Okanagan's School of Engineering to undertake a flood mitigation planning review and gap analysis, as per proposal."

CARRIED

The board was updated on UBCO's Water Research Chair. Over the last several years an advisory committee of funders (including OBWB representation) has met several times a year with the chair to discuss ongoing and potential research priorities. UBCO is now considering a new process where the chair provides an update to funders (for the OBWB – all three regional districts) and holds annual community water forums. Directors discussed the process. Chair McKortoff suggested that the Water Research Chair be invited to present at the 2021 Osoyoos Lake Water Forum.

Despite January's cold snap and snow, it is still too early to know what to expect in the coming months, the board was told. Meteorologists have indicated there are no strong predictors for wetter or drier than normal conditions but the long-term forecast suggests warmer than normal temperatures for the next few months and the State of Wash. is in abnormally dry conditions. Dr. Sears added that work is underway to develop a contract for a hydrologic study in the Similkameen. This river, she noted, is important since its flows have a large influence on Osoyoos when it comes to flooding and drought.

"THAT the Executive Director's Report, dated Jan. 29, 2020, be received."

CARRIED

7.2 Water Stewardship Director Report

Mr. Jatel gave an update on the December council meeting and presentations from Environment and Climate Change Canada, including discussion about the importance of reestablishing hydrometric monitoring.

The February council meeting will include a presentation on the Okanagan region climate projections report, funded in part with a grant from the OBWB.

Referring back to the hydrometric monitoring, Dir. Cumming suggested staff bring a report forward that looks at which areas are highest priorities, the cost and potential next steps. After further discussion, it was agreed that staff would prepare a report.

Mr. Jatel noted that an Okanagan Wetland Action Plan is now available on the OBWB website as a guide for local governments.

Work is also continuing on the flood mapping website. With some additional funding for the project and a small work window, the board was asked to approve additional work for the site.

"THAT the OBWB approves a contract extension with Northwest Hydraulics Consultants Ltd. to provide data management and support services for the Okanagan flood plain mapping project with a budget to not exceed $65,000."
CARRIED

"THAT the Water Stewardship Director's Report, dated Jan. 29, 2020, be received."
CARRIED

7.3 Operations and Grants Manager Report

Mr. Littley reported that 132 participants have registered for the B.C. AquaHacking Challenge. Most are from UBCO and Okanagan College, but there are also some from the Lower Mainland and a few from Quebec and Ontario. Registration closes on Feb. 21, he added, noting that the semi-finals will be held March 21. Work is underway to finalize judges and organizers are in the final stages of fundraising the final amount, about $13,000.

"THAT the Operations and Grants Manager Report, dated Jan. 28, 2020, be received."
CARRIED

7.4 Communications Director Report

Ms. Jackson gave an update on the Make Water Work (MWW) 2020 campaign, noting a meeting with local government and utility partners the day before which included a review of more recent water demand numbers. Hiilite Marketing staff, who have been assisting with the MWW and Don't Move A Mussel campaigns, were also in attendance. Jackson added that she has also been working with the Okanagan Xeriscape Association on expanding the MWW Plant Collection and garden centre partnership.

Plans are underway to screen "Brave Blue World" and have a follow-up panel discussion on March 19 as part of Canada Water Work festivities. The film, which celebrates innovative technological solutions to some of the world's greatest water challenges, was chosen as a good fit with OBWB-Okanagan WaterWise's involvement in the B.C. AquaHacking Challenge. The challenge, and the semi-final which is being held two days later, will be highlighted and promoted at this event.

Staff have also been working with the RDCO Waste Reduction Office on the 2020 Living Greener calendar and upcoming composter-rain barrel sale, assisting with the Okanagan Flood Story Map and Aqua-Hacking communications, as well as the upcoming "Building Community

Resilience in a Changing Climate" event on Feb. 26, featuring Sheila Watt-Cloutier and the public launch of the *Okanagan Climate Projections Report*.

"THAT the Communications Director's Report, dated Jan. 29, 2020, be received."
CARRIED

7.5 Policy and Planning Specialist Report

Ms. Garcia reported on the expansion of the Agricultural Water Supply Communication Project and the addition of Lake Country and Oliver, bringing the number of Okanagan utility partners to 10. Some of the focus in the coming year will be on recruiting more farmers to sign up for water supply e-alerts, helping them respond to potential drought, and providing information to increase water efficiency and maximize crop yield.

Work is continuing on a Source Water Protection Plan, including meetings with water utilities and provincial staff to identify gaps, objectives and opportunities to work together.

The board was told that Ms. Garcia and Mr. Jatel will be co-presenting at Adaptation 2020 on collaborative drought planning and the Environmental Flow Needs project.

"THAT the Policy and Planning Specialist Report, dated Jan. 28, 2020, be received."
CARRIED

8. NEW AND UNFINISHED BUSINESS

8.1 OBWB Draft Strategic Plan 2020-2024 Memo

Dr. Sears introduced the draft Strategic Plan, noting that the final document will guide the work of the board and staff. Dir. Cumming suggested an appendix with a baseline or indicators. Dr. Sears offered to provide an updated plan with appendix at the next board meeting.

Dir. Fortin exited the meeting at 1:02 p.m.

"THAT the Draft Strategic Plan 2020-2024 be received and an appendix be provided at the next board meeting."
CARRIED

8.2 Invasive Zebra & Quagga Mussel Update Memo

Ms. Jackson and Mr. Littley provided an update on the invasive mussel file, with the OBWB's calls for provincial and federal action and responses to date, and an overview of B.C.'s 2019 inspection and defence program.

With 16 of the 22 mussel-fouled watercraft intercepted having come from Ontario, Dir. Fleming noted the importance of federal support on the issue. Chair McKortoff raised the idea of sending a resolution to Southern Interior Local Government Association's April AGM regarding invasive mussels and milfoil. Staff offered to touch base with the province for an update on the program and how the OBWB can support efforts, and bring a report back in March.

In response to a question as to how B.C. has managed to keep the mussels out so far, Mr. Littley noted that inspections and public education has been helpful, but water utilities should also be doing risk assessments and looking at retrofitting infrastructure.

"THAT the Invasive Zebra & Quagga Mussel Update Memo be received."

CARRIED

9. CORRESPONDENCE

9.1 Tracy Gray letter re federal funding for invasive mussel prevention
9.2 Osoyoos Aquifer Water Quality Objectives letter
9.3 B.C. Climate Strategy letter
9.4 B.C. Emergency Program Act Modernization letter

"THAT the correspondence from and to the Okanagan Basin Water Board be received."
CARRIED

10. NEXT MEETING

10.1 The next meeting of the Okanagan Basin Water Board will be held on Tues. March 3, 2020 at Regional District of Okanagan-Similkameen in Penticton.

11. ADJOURNMENT

"THAT there being no further business, the regular meeting of the Okanagan Basin Water Board of Feb. 4, 2020 be adjourned at 1:31 p.m."
CARRIED

Certified Correct:		
Chair		Executive Director

7

Okanagan Basin WATER BOARD
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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 6.1

File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears

Date: February 26, 2020

Subject: Executive Director Report

Coronavirus Considerations

As public health officials are raising concerns about the need for a public health response to coronavirus, I've given some thought to how it may affect OBWB operations. Staff have been instructed to ensure that they are prepared to work remotely if they have virus symptoms, or if people are falling ill in the RDCO building. All OBWB staff are up-to-date on their seasonal flu shots. Given these basic preparations, the main threat to operations are if some of our large public events and even board and council meetings scheduled for the next few months may be cancelled. I'm not a pandemic-alarmist, but I think it's worth considering and planning for a broader public health response.

Requests for Comment on Provincial Policy

This month we provided comments on the Ministry of Environment and Climate Change Strategy's Source Drinking Water Quality Guidelines. The Water Stewardship Council's Source Protection Committee provided excellent technical support for writing this letter. The letter was circulated to the board for review on February 24, and will be submitted to the province on March 2, 2020.

LiDAR Project Update

The final batch of LiDAR is being circulated among Okanagan communities. These data are for upper watershed areas, and were captured in 2019. There are still some further delays with processing the ortho-imagery, and those are not expected until sometime in March. This project has received great positive feedback from different communities. One municipal planner told me, "We use it literally every day!"

Flood Resilience Planning Projects

As we wrap up the Okanagan Lakeshore Flood Mapping Project, we continue working on new projects. There will be a pre-release webinar of the mapping website for elected officials, a pre-release workshop for local and Indigenous government staff, and we are planning some additional public outreach for April or May. We are in the process of finalizing the administrative details for our flood policy gap analysis with UBC. We hope to hear about the success of the next round of grant proposals in April. As these next steps move forward we will be able to create workplans for OBWB staff involvement in the flood resilience initiatives.

Adaptation 2020 Conference

I attended the national climate adaptation conference in Vancouver on February 19-21 with Ms. Garcia and Mr. Jatel, who presented on Okanagan Drought Planning and Environmental Flow Needs. This was a very well organized event, with more than 700 people attending from B.C. and Canada. There was a large focus on practical responses to climate change, including drought, flood and wildfire preparedness, financing adaptation, and also many excellent presentations on the co-benefits of green infrastructure. Based on these talks, I feel that Okanagan communities are on the right track, and while we may not be as advanced as some larger municipal regions, we are still leading in British Columbia.

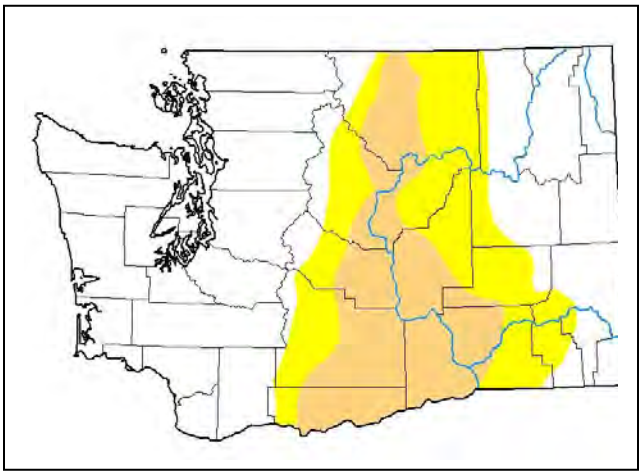
I attended a special workshop held by the B.C. Ministry of Environment and Climate Change Strategy on the afternoon of February 21, following the close of the conference. This was intended for them to gather feedback on the roll-out of the B.C. Climate Adaptation Strategy planned for 2020. There will be extensive public consultation on this planning process beginning in May/June of this year, leading to an expected release of the final strategy in Fall 2020. I've invited the Director of the B.C. Climate Adaptation Team, Ms. Tina Neale, to present on the strategy to the OBWB and Council at our joint meeting in May.

Weather Report

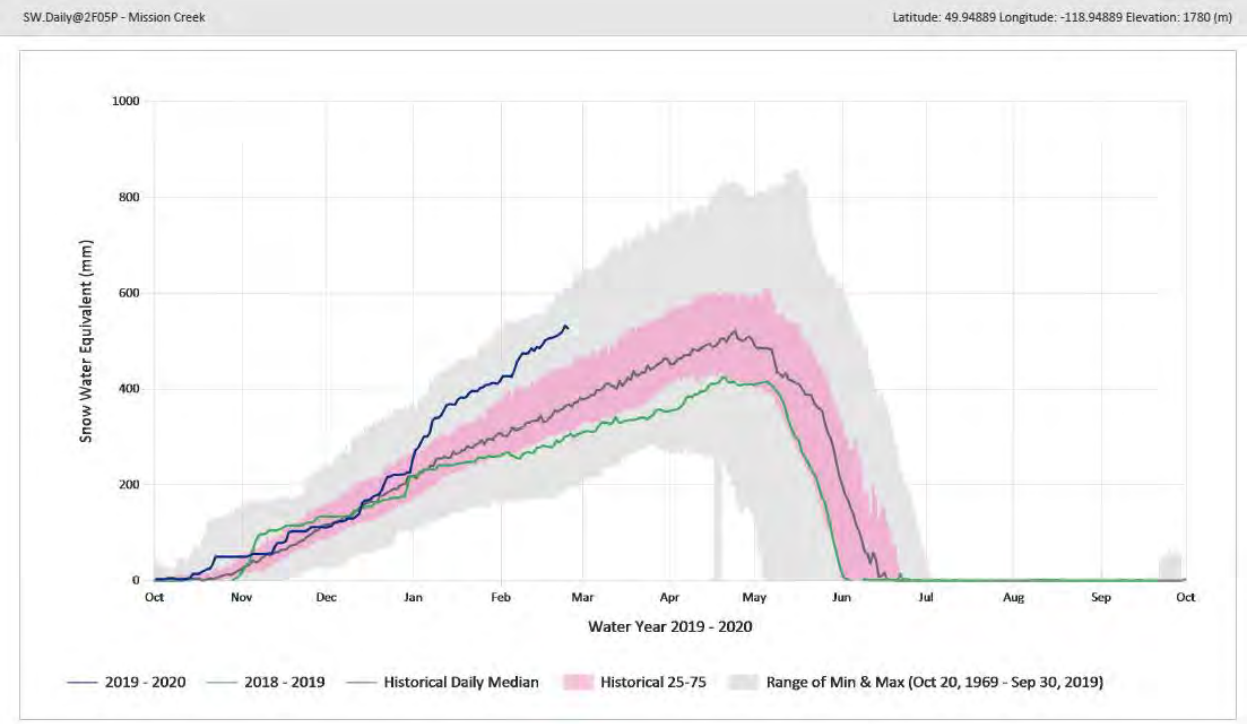
As of February 22, 2020, Mission Creek's snow pillow is at 144% of normal for this date, and Brenda Mine's snow pillow is at 102% for this date. The Okanagan snow basin index (as of February 1) was 128% for the watershed. Last year at this time, the snow pack was at 80% of normal. Typically, the snow pack doesn't peak until late April, so there is potentially quite a bit more snow to come.

The province is currently drawing down Okanagan Lake levels through releases into the Okanagan River channel, in anticipation of a larger than normal freshet. The likelihood of flooding increases with a higher snow pack, but many other factors determine whether flooding actually occurs. If the snow melts slowly, it is much less of a problem. Hot weather, causing rapid melt, and rain-on-snow can both influence the scale and magnitude of flood events.

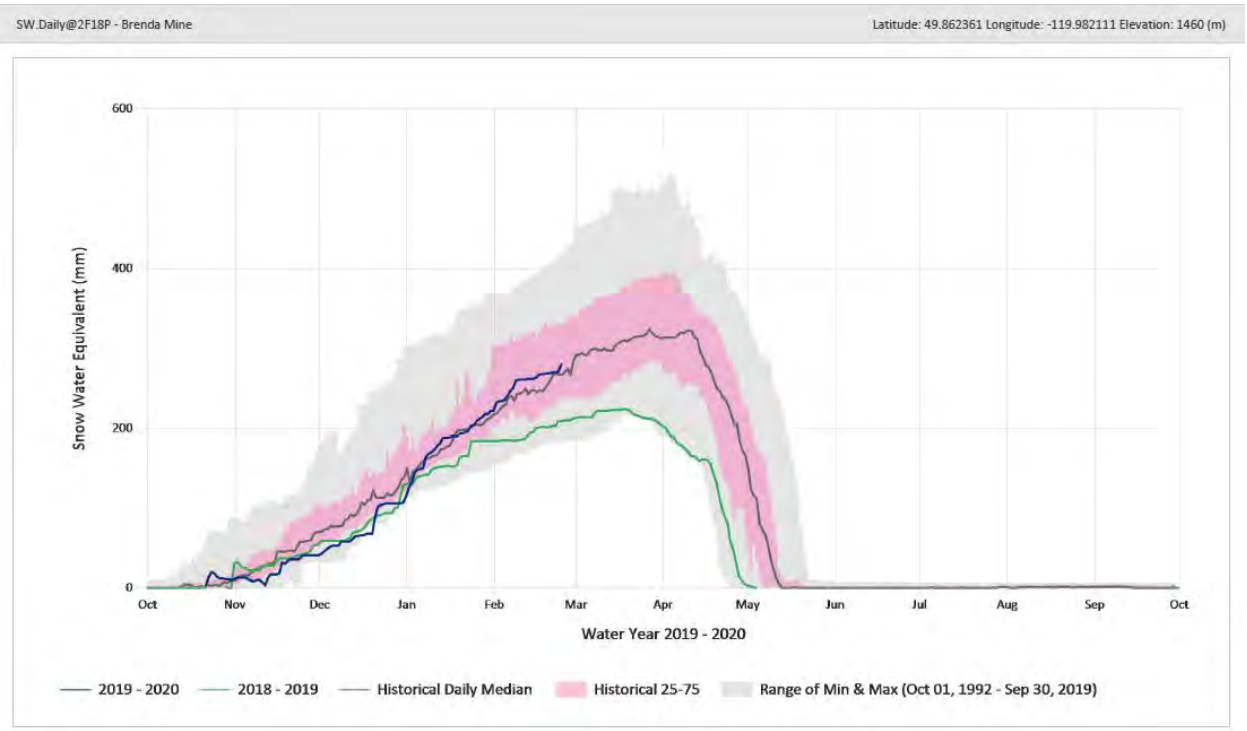
Curiously, the US Drought Monitor (pictured to the right) still considers Okanogan County to be "Abnormally Dry"/ in "Moderate Drought."



Mission Creek snow pillow – February 25, 2020



Brenda Mines snow pillow – February 25, 2020



Okanagan Basin WATER BOARD
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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 6.2

File No. 0550.04

To: Board of Directors

From: Nelson R. Jatel

Date: February 25, 2020

Subject: Water Stewardship Director's Report

Water Stewardship Council

The February 13th Council meeting was well attended and our guest speaker **Gillian Aubie Vines**, principle for Pinna Sustainability consulting presented on the new *Climate Projections for the Okanagan* Report. A full copy of the report is available: http://www.rdno.ca/docs/200104_OK_ClimateReport_Final.pdf

Some of the report findings and important discussion points included:

- Projected warmer temperatures year-round
- Summers will be considerably warmer
- Increased duration of growing season
- Warmer winter temperatures
- Increased precipitation across all seasons except summer
- Summer is expected to remain the driest season, and become drier
- By 2080, projections indicate substantial changes, resulting in a very different climate than the Okanagan today

Extreme weather conditions can tax urban drainage systems to the max and create conditions for community risks including fire, flood and drought (left photo courtesy UBCO, right photo courtesy Canada's National Observer).

The upcoming March 12th Council meeting will be hosted at Kelowna's Coast Capri Hotel from 12:30 – 4:30 p.m. Our discussion will include presentations on recent flood modeling and communications tools under development by the OBWB. Board members are invited and encouraged to attend.

Project updates

Water quality measures website

Developing environmental indicators is challenging in the Okanagan's multi-use watershed because of a lack of data and clear connections between multi-level government jurisdictional boundaries. To help communicate water quality data measures there are a number of helpful information sources summarized online at: www.obwb.ca/wq.

The new Water Quality Database developed in partnership with Larratt Aquatic Consulting (LAC) and Okanagan municipalities and water suppliers provides an excellent starting point to look at water quality measures over time in the Okanagan. The new tool can be used to:

- Generate summary statistics and information visualizations
- Screen data against relevant water quality guidelines
- Compute statistical trends

The *Water Quality Data Base* beta site is available online here: www.obwb.ca/wqdb

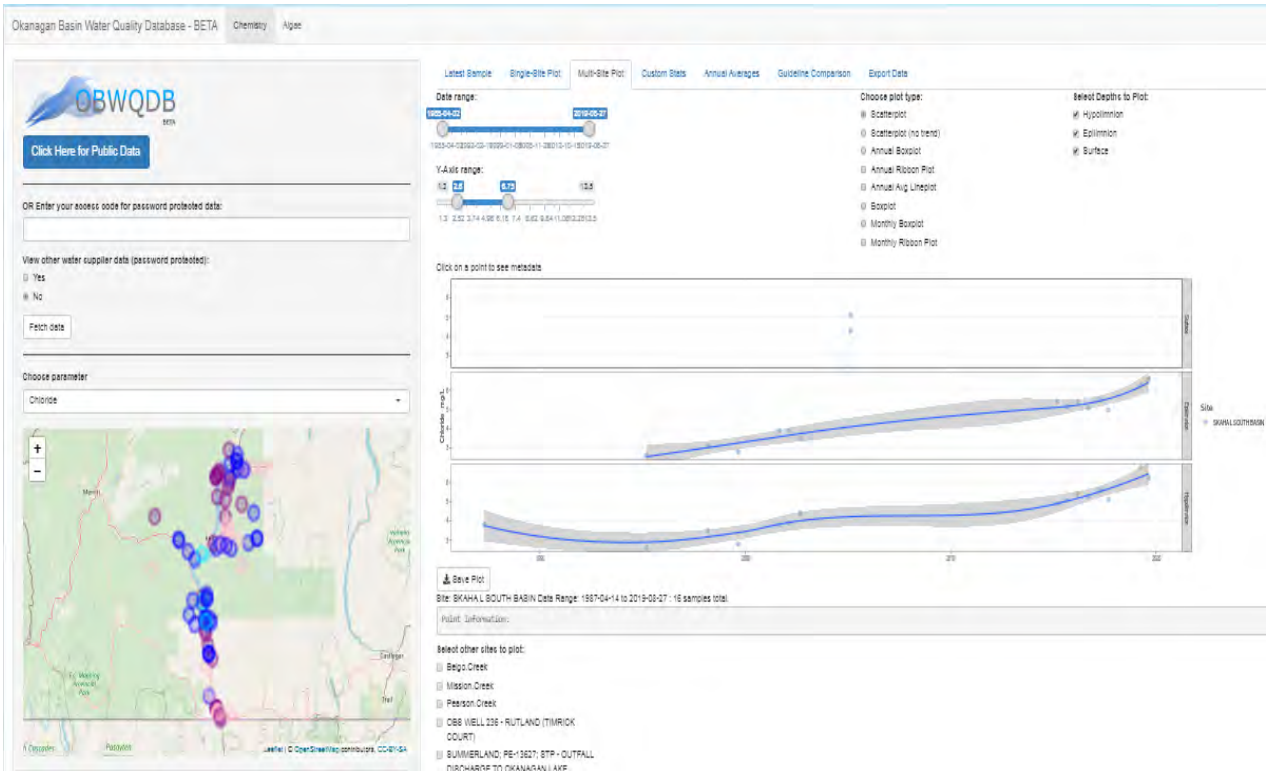

Figure 1. Screen shot of the new Water Quality DB showing chloride trends in the south basin of Skaha Lake between 1985 and 2019.

Okanagan hydrometric station network:

Water quantity-related information is used every day by all levels of government, First Nations, companies, businesses, and non-governmental organizations to make important decisions related to public safety, economic development, and resource protection. Adequate water quantity information saves lives and protects hundreds of millions of dollars of investment each year. Water information is increasingly important due to climate change, flood risks, and development needs. The B.C./Canada hydrometric and related data networks have diminished.

There is an ongoing, essential need to collect high-quality Okanagan hydrometric data and ensure that it is available for multiple actors to make the most of collected data.

What is a hydrometric station?

A hydrometric station is a data collection tool on a river, lake, estuary, or reservoir where water quantity (and sometimes quality) is collected and recorded. Data collection can be real-time meaning that as information is collected it is sent via cell network or satellite to a central database that can be accessed anytime. Environment Canada stations are usually real-time and include present and historic data to identify annual and multi-year trends. Data collection can also be non-real-time meaning that data is collected and the information is stored on-site and downloaded periodically and then added to the data record.

State of Okanagan hydrometric monitoring network

Environment Canada / BC Government Hydrometric Stations

Although water availability has long been a problem in the Okanagan and supply problems are predicted to worsen, the basic network of hydrometric stations has been declining for several years. Only 15 of the 79 drainages in the Okanagan Basin are now being monitored by Water Survey of Canada. Reliable data are needed for water management planning by local governments, water purveyors, and the agricultural community. These data are used for land-use and transportation planning; flood forecasting; drought management planning; protecting in-stream flows for fish; and tracking changes in streamflow, water temperature and other indicators in relation to population growth and climate change.

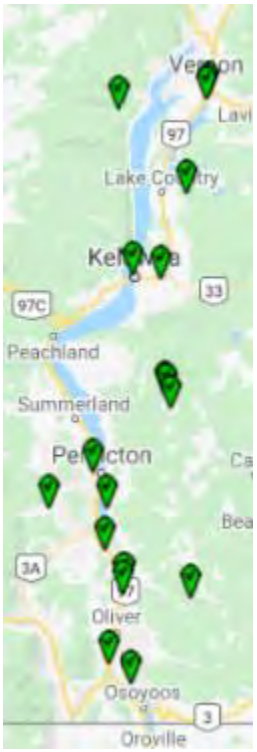

Figure 2. Current (2020) ECC Hydrometric Station Network.

OBWB Stations

Recently, the OBWB has been involved in establishing or re-establishing hydrometric stations to support a number of ongoing projects including the Mission Creek surface-groundwater interaction project, upper-Vernon creek kokanee spawning initiative and the Okanagan Environmental Flow Needs Project. These are *temporary stations*, primarily funded at this time by project grants (the 2021 OBWB budget includes $30,000 for ongoing hydrometric monitoring and software). Table 1. below summarizes OBWB hydrometric stations, and projected annual costs for maintaining them. As our project funding wraps up, we will be working with our partners to determine which stations can remain open, and which will have to be retired for lack of funds. Tables 1 and 2 below provide a summary of costs for managing Okanagan hydrometric stations.

Table 1. OBWB Station: Annual maintenance budgets (estimate)

Creek	Project	Type (real-time or manual)	Site Visits (6)
Shorts	EFN	RT	3,500
Mission	GW-SW Interaction/EFN	RT / M	3,500
Upper Vernon	EFN	RT	3,500
Middle Vernon	BC Gov.	M	3,500
Coldstream	EFN	M	3,500
Equesis	EFN	M	3,500
Nashwito	EFN	M	3,500
Whitemans	EFN	M	3,500
McDougall	EFN	M	3,500
Shingle (up)	EFN	M	3,500
Shingle (low.)	EFN	M	3,500
Shuttleworth	EFN	M	3,500
Vaseux	EFN	M	3,500
Inknaeep	EFN	RT	3,500
Shorts	RDCO – Inf.	RT	3,500
Darke	RDOS	RT	3,500
Sub-total			*56,000*
Annual management costs to maintain this level of service			
Project Mng	ONA		7,500
Data Mng	ONA		10,000
Data Mng	AE		10,000
QA/QC	AE		5,500
Maintenance	OBWB		15,500
Software	OBWB		10,000
Server support	OBWB		5,500
Sub-total			*64,000*
Total Annual			**120,000**

Table 2. Additional budget considerations

ECC Stations	(each)	Annual Maintenance costs	$12,000
Station hardware and installation		Per station	$ 8k - $ 15k

Other third-party stations

There are a number of water utilities and other third-party organizations (i.e. BC Hydro) that run hydrometric stations in British Columbia. Of note is the recent project developed by the City of Kelowna to install needed hydrometric stations on Mill Creek. This is important data that is currently missing and will significantly improve data needs on the Mill Creek system that includes the Kelowna Air Port and commercial/residential areas of downtown Kelowna.

Data management

The OBWB is involved in managing Okanagan hydrometric data for a number of our projects including: Environmental Flow Needs, Mission Creek groundwater and surface water project, Middle and Upper Vernon kokanee spawning, and local government infrastructure on Shorts Creek

Aquarius system

AQUARIUS Time-Series is the most commonly used platform (i.e. Environment Canada, BC Government, USGS, etc.) for managing time-series hydrometric data. Environmental data from multiple sources are securely stored for fast, central access. Its simple design delivers the latest science and techniques in an intuitive interface. In the Okanagan, Aquarius helps water managers easily correct and quality control data, build better rating curves, derive statistics, and report in real-time to meet stakeholder expectations for timely, accurate water information.

BC Data Warehouse

The OBWB is partnering with the BC Government on a new pilot project to warehouse hydrometric data and ensure that data is properly labeled as well as made accessible. The BC data warehouse initiative has included all of the Okanagan's recent Environmental Flow Needs data as well as Mission Creek data and made it publically accessible – providing additional transparency and value to collected Okanagan data.

OBWB data storage (RDCO)

The OBWB stores hydrometric data on the secure Regional District of Central Okanagan server. Limited support is provided for the data storage and management of the servers as well as maintaining support software enabling the operation of our Aquarius software.

Quality Control / Quality Assurance

As part of the operational collection by ONA technical fishery staff, the OBWB contracts with hydrometric experts to audit hydrometric field data-collection techniques and data management. This is an important aspect of ensuring collected data quality is high and the information is credible. This is an ongoing cost for providing data outside of the Water Survey of Canada system.

Future Considerations

- Hydrometric data is valuable information.
- The Okanagan is underserved, compared to our "ideal" network (23 vs 54)
- OBWB could provide leadership (low likelihood that other levels of government will fill the gap), and more work is needed to determine what a stable network system would look like, and which partners will commit long-term
- Downloading of senior government responsibilities

Okanagan Basin Flood Portal

Work continues on developing an Okanagan Basin flood portal website with an anticipated launch in spring 2020. This site complements community flood websites and provides a regional perspective including photos and stories about flood history in the Okanagan.

Figure 3. Draft Okanagan Basin Flood Portal under development to explore flood hazards anticipated along Okanagan Mainstem lakes.

Since development intensification through the early 1900s, the Okanagan valley has largely used the strategy of protection with river realignment and channelized flow through diking under the Okanagan Lake Regulation System Flood Control Program. This strategy has led to intensified development behind the dikes. As flood risk increases, the strategies of accommodation, retreat and avoidance may better fit the Okanagan's needs.

Water is a central aspect of life in the Okanagan. The story of flooding in the Okanagan valley began thousands of years ago and has continued to change through many generations of Okanagan valley residents. It is a story of regeneration, balance, resilience, community and conservation. This project will provide the public with an interactive tool to explore flooding in the Okanagan.

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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 6.3

File No. 0550.04

To: OBWB Directors

From: James Littley

Date: February 25, 2020

Subject: Operations and Grants Manager Report

Milfoil Control Program

Following the February board meeting presentation from Lora Nield and Mark Phillpotts of FLNRORD on milfoil control and regulations around Rocky Mountain Ridged Mussels (RMRM), I was invited to participate in a conference call between FLNRORD staff, researchers at UBCO, and a PhD freshwater mussel expert from Norway who previously conducted research on RMRM. This discussion focused on developing research questions to help clarify whether a conflict actually exists in milfoil control areas.

The first idea was to look at the effect of dense milfoil beds on lake-bottom oxygen levels, because freshwater mussels require sufficient oxygen in their habitat. Another idea was to complete more thorough mapping of milfoil areas and RMRM areas, where there is a suspected conflict.

During the call I stressed the importance of recognizing that any study areas already treated for milfoil are not good scientific control areas (without other variables), because they have already been significantly altered, compared to areas where milfoil has been left to grow uncontrolled. In other words, treated areas might make good RMRM habitat **because** we have not let milfoil thrive there, so research at those sites would not be ideal for answering certain questions.

AquaHacking Update

Registration for the AquaHacking Challenge closed on February 20th, and we had 158 participants registered at the deadline. We are continuing to recruit judges for the March 21st semi-final, who will be technology, water or business experts. We are also looking for corporate sponsors for the Challenge as we seek to close the remaining funding gap for the project. At this point, we are significantly under our projected budget, due in large part to our partnership with UBCO, which has provided facilities and support.

WCQI Grant update

The grant deadline for this year's WCQI intake is Friday, Feb. 28 at 4 p.m. I will provide the board an update on the number of applications received and totals requested in a supplemental memo at the board meeting.

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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 6.4

File No. 0550.04

To: OBWB Directors

From: Corinne Jackson

Date: Feb. 25, 2020

Subject: Communications Director Report

Make Water Work & Don't Move a Mussel 2020

As noted last month, discussions and planning are already underway for the spring launch of *Make Water Work (MWW)*, our spring to early fall outdoor water conservation campaign, and *Don't Move a Mussel (DMM)*, which runs during the same time period, when outdoor recreation and the chance of a zebra or quagga mussels being introduced into waters is greatest.

Marketing Contract Renewal

Back in March 2018, following a thorough review of proposals for marketing consultants, the board approved an initial contract of $50,000 for MWW and $50,000 for DMM. The contract included an option to extend for two further periods of one year. Based on results, the contract was renewed for 2019. Once again, it's recommended that the contract be extended for one more year without going to an RFP.

Recommended Motion

THAT the Board approve an extension of the existing contract at $50,000 for 'Make Water Work' and $50,000 for 'Don't Move A Mussel' for one year without further competition.

UN World Water Day - Canada Water Week 2020

In celebration of Canada Water Week-UN World Water Day (March 15-22), the OBWB - Okanagan WaterWise will be screening "*Brave Blue World*" on March 19 at UBCO, in partnership with UBC's Okanagan Institute for Biodiversity, Resilience, and Ecosystem Services (BRAES).

The film tells the story of people and projects around the world, tackling various water challenges, including water contamination, wastewater, water scarcity, and more. The film stands on its own as an inspiring piece of work, but also has some star power, with Liam Neeson as narrator and actor Matt Damon, co-founder of Water.org. We chose the film because it aligns nicely with our hosting of the B.C. AquaHacking Challenge, aimed at addressing local water issues and the semi-final being held just two days later, on March 21 at UBCO.

Following the 50 minute film we will have a panel discussion and Q&A. Confirmed panelists include:

- Our own **Dr. Anna Warwick Sears** – speaking to the top issues we are facing in the Okanagan (and being addressed through the B.C. AquaHacking Challenge),

- Well-known local hydrologist **Mr. Don Dobson** – on what advances we have seen in the recent past with water management in our valley using western technology (e.g. from dumping waste water directly into our waterways to waste water treatment plants, from channeling waterways to address flooding to re-naturalizing areas),
- **TBA** – the importance of Traditional Ecological Knowledge, how it has been side-lined in the recent past but is key in addressing the challenges we are facing, and
- **Dr. Nicolás Peleato** from UBCO's School of Engineering – on the future of addressing water challenges in our valley with young people, artificial intelligence/machine learning, trends.

The event, to be held at UBCO's Commons Theatre, will conclude with a reception. Doors will open at 6:30 and the event will run 7-9:30 p.m. Tickets will be available starting Friday, Feb. 28 on EventBrite.

A trailer for the film is available at https://www.youtube.com/watch?v=-rajZBWFH1Q.

Other communication initiatives

This month I co-wrote an article with **AquaHacking** (AH)'s Development Officer regarding the B.C. challenge for BC Water and Waste Association's *WaterMark* magazine and have been providing other AH communications support. I have also been assisting with the **Okanagan Flood Story Map**, gathering and reviewing content, and bringing Okanagan local government communications staff together to provide input.

As noted last month, we are teaming up with the Regional District of Central Okanagan (RDCO)'s Waste Reduction Office to sell **rain barrels** in the spring while they sell composters. The items will be available by pre-ordering online, March 2 to 31. We are selling the rain barrels at-cost for $78 and there will be 200 available. A poster is included below.

Finally, I have also been providing communication support to the Okanagan regional districts' recent ***Climate Projections Report for the Okanagan***, funded in part through OBWB's Water Conservation and Quality Improvement Grant Program, as well as RDCO's upcoming ***"Building Community Resilience in a Changing Climate"*** **event** on Feb. 26, sponsored in part by the OBWB and featuring Sheila Watt-Cloutier. This event is now sold-out.

<u>Summary of Recent OBWB-Related Media</u>

Jan. 30 "Cool, cloudy summer stopped milfoil growth," *Kelowna Daily Courier*

Feb. 5 "A cooler summer last year might benefit Okanagan lakes this summer," *InfoNews.ca*

Feb. 6 "Okanagan and Similkameen regions have lost 90% of wetlands since 1800: board," *Kelowna Capital News, Vernon Morning Star, Salmon Arm Observer, Keremeos Review*

Feb. 12 "Climate projections report completed for the Okanagan region," *AM 1150*

Feb. 24 "Invasive milfoil will thrive in Okanagan lakes impacted by climate change," *InfoNews.ca*

Recent Presentations

Feb. 19 "Collaborative Drought Planning in the Semi-Arid Okanagan," to Adaptation Canada 2020 – Kellie Garcia and Nelson Jatel

Upcoming Presentations

Feb. 26 "Building Community Resilience in a Changing Climate" public event panel – Anna Warwick Sears; display – Corinne Jackson

March 19 "Brave Blue World" public film screening and panel – Anna Warwick Sears

March 25 "A River Film" Q&A to Oasis United Church – Anna Warwick Sears

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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 6.5

File No. 0550.04

To: OBWB Directors

From: Kellie Garcia

Date: February 25, 2020

Subject: Policy and Planning Specialist Report

Source Water Protection Planning

On February 7, I facilitated a meeting in Summerland to discuss opportunities for collaborative source protection planning for Okanagan Lake. The meeting was very well-attended, with water suppliers from Kelowna, West Kelowna, Peachland, Penticton, RDOS, Summerland, RDCO, and Black Mountain Irrigation District and a representative from Interior Health. Each community gave an update on the status of their assessments and plans, and then talked about the greatest impacts and risks to water supply in the Okanagan Lake watershed and the main barriers to source protection planning. Lastly, we brainstormed ideas on how we can work together to improve source water protection and what tools and resources are needed to support this.

Barriers to source protection identified by the group included a lack of capacity and funding, jurisdiction limitations, poor understanding of cumulative effects, lack of public understanding and awareness, and a lack of direction related to source protection plan format and content.

Some collaborative solutions identified by the group included:

- Launch a valley-wide public outreach campaign focused on water quality and source protection (modeled after Make Water Work).
- Better share completed source protection assessments and plans.
- Identify how regional districts can help municipalities and vice versa (given their different legislated responsibilities and powers).
- Work with Interior Health to develop templates for water assessments and protection plans and include in the Source Water Protection Toolkit.
- Host a workshop focused on source protection planning in the fall using the new Source Water Protection Toolkit as a framework.
- Reconvene this group of water suppliers a few times a year to work on initiatives of shared interest and need.

This week, I am attending two meetings hosted by the B.C. Ministry of Forests, Lands, Natural Resource Operations and Rural Development – in Penticton and Kelowna. These annual meetings bring together water purveyors, range tenure holders, timber licensees and recreation groups to talk about measures they are using to mitigate impacts to water quality in their community watersheds. I will give a verbal report on any outcomes or lessons learned at the March board meeting.

The Source Water Protection Toolkit request for proposals call closed yesterday. We should have a consultant selected by our March board meeting.

<u>Adaptation Canada 2020 Conference</u>

Last week, I attended the Adaptation Canada 2020 conference in Vancouver. It was very interesting to hear about work that is going on around Canada to advance collaboration and innovation in climate change adaptation. I attended sessions on using regional-scale approaches to expand green infrastructure, engaging agricultural stakeholders to foster actions in adaptation, effectively sharing knowledge and building networks to address a changing climate, and achieving optimal use of climate data in planning and design, among others. I learned a great deal from the keynote speaker, Per Espen Stoknes, about the main psychological barriers to thinking constructively about climate change and making changes, and solutions to overcoming these hurdles.

Mr. Jatel and I gave a presentation at the conference that was attended by about 70 people. We talked about three winning conditions for drought resilience: 1) coordination, collaboration and communication, 2) translating information to action, and 3) committed and credible leadership. We shared best practices, challenges and opportunities associated with these three themes using stories about the work we are doing on drought planning and environmental flow needs. Live polls were used to gather information from the audience (see below). We endeavored to leave the audience with tangible recommendations and practical tools and resources that they could apply in their own communities.

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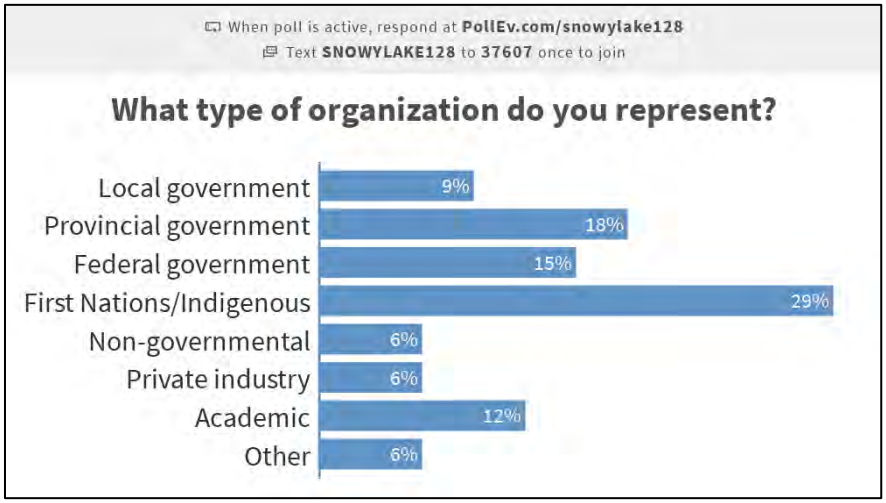

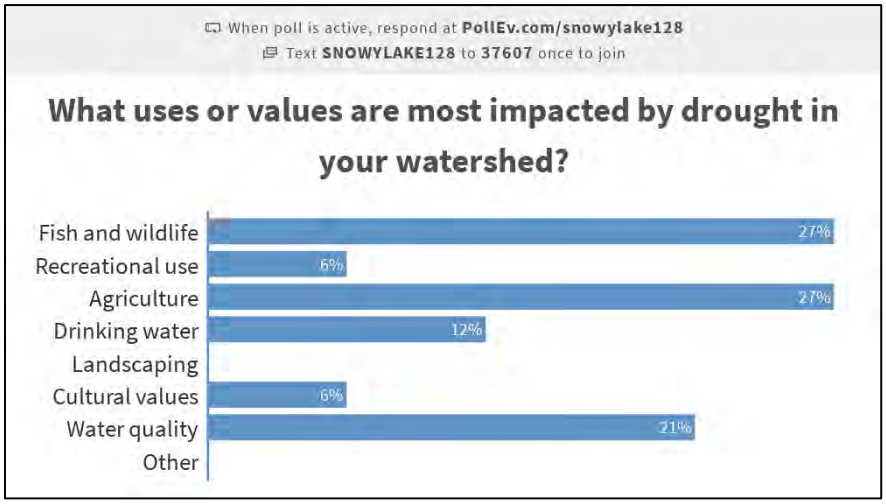

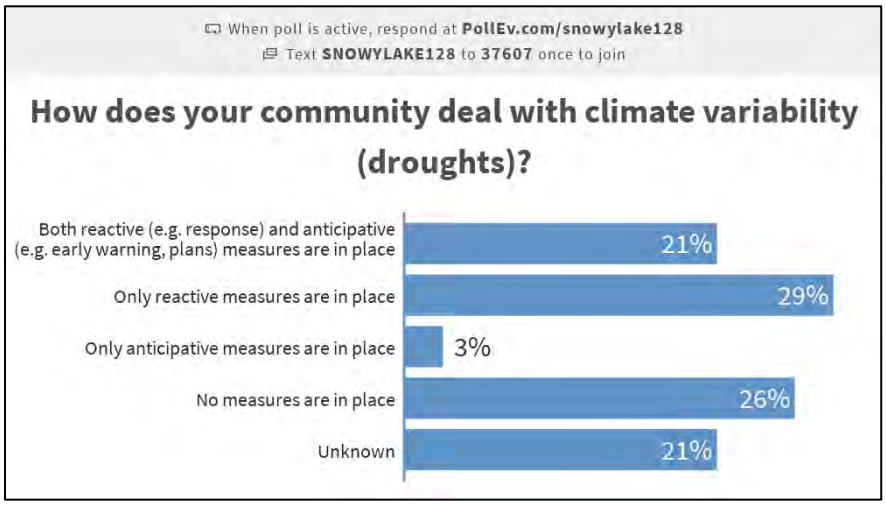

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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 7.1

File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears

Date: February 26, 2020

Subject: Strategic Planning Tracking Measures

With the exception of Appendix A, the attached version of the OBWB's 2020-2024 Strategic Plan is ready for final adoption by the board. This main part of the plan has been further reviewed by staff, and with minor edits it is unchanged from last month. We are working on preparing it for final formatting to a more public-friendly version.

I have also attached a draft of Appendix A for the board's review and discussion. This section still needs more consideration and work. At OBWB's February board meeting, directors recommended that we develop indicators for the effectiveness of our plan at making concrete changes in the watershed.

Indicators are tricky to develop, which is why I want to take more time and give these some substantial thought. We want them to be good "tracking measures" for our activities, and how we spend our time and budgets. We work on many types of initiatives in partnership, where we don't have full control of our partner's capacity or competing priorities. For this reason, we've had slow successes over time, building capacity and momentum. When major funding opportunities or partnerships arise, we are ready to act.

Despite the difficulty in having clear numeric indicators for many of our goals, it seems valuable to follow and record what is working, and what the barriers are – even if sometimes the evaluation will be qualitative rather than quantitative.

I welcome the board's review and contributions to the proposed "tracking measures," and how they can be improved, clarified or expanded.

Okanagan Basin Water Board Strategic Plan: 2020-2024

The 2020-2024 Strategic Plan is intended to guide the OBWB's work for the next five years. The plan reflects our priorities, and our unique strengths, and the way we carry out our work. The plan is a framework for future projects, programs, partnerships and decisions. It will create clarity for our partners, and help us shape our work together.

This plan focuses on actions that can be undertaken by the OBWB, complementing the Okanagan Sustainable Water Strategy, and the planning initiatives of Okanagan communities. The plan describes key activities, and our role in supporting actions by diverse partners.

Why a Strategic Plan?

The world is changing rapidly. The global economy is bringing unexpected stresses, global climate change is creating unpredictable swings in weather, and within the next 30 years the global population will grow from 7.8 billion to 9.7 billion people. Although these are world-wide processes, their effects on water are local. We enjoy healthy water in the Okanagan – from the drinking water in our taps to the clear blue waters of our lakes. But we also experience water problems – from pollution to shortages to flooding – and many of the solutions are local. Working locally, we have the capacity and agency to respond to external change.

The OBWB supports the work of Okanagan communities, and all sectors of Okanagan society, to collectively improve the way water is managed in the valley. We want to be a centre for collaboration and creativity. We also want to strengthen and grow partnerships with Okanagan Indigenous communities, because of our mutual responsibility to care for water, and in the spirit of reconciliation. We believe that *thinking strategically* about these approaches allows us all to make best use of human and financial resources – finding the right solutions and making the right decisions to adapt to a changing climate. It also allows us to accommodate our growing population while protecting the natural environment – so that the Okanagan continues to have an excellent quality of life.

Introduction to the Okanagan Basin Water Board (OBWB)

The Vision of the OBWB is for the valley to have clean and healthy water in perpetuity, meeting the needs of natural ecosystems, residents and agriculture.

The OBWB's mission is *to provide leadership to protect and enhance quality of life in the Okanagan Basin through sustainable water management.* The OBWB was initiated in 1968 as a collaborative local government agency, to identify and resolve critical water issues in the Okanagan. We link and catalyze water initiatives throughout the valley.

The OBWB's strength is in our partnerships: bringing people and resources together, and providing a means for joint strategic action. We advocate for local water concerns to senior governments, and are a public voice for water education. Our financial structure enables us to bring together funds from many sources – creating new opportunities based on regional collaborations and goals. We have the capacity to deliver complex, multi-partner projects.

The Okanagan is a leader for many of Canada's water issues. We have among the lowest water availability per person, and many water-dependent industries. With less water available, we must protect water quality, so it can be used and re-used for many purposes – while preserving environmental flows and environmental health. Few comparable examples exist, so we must be innovative in our water policy and water management. This has been our history, and this will also be the key to our future.

OBWB Purpose or Mandate

The OBWB's mandate[1] was established in 1969 through the *Municipalities Enabling and Validating Act* and Supplementary Letters Patent to the Okanagan regional districts, to:

- Organize or receive proposals from private interests, organizations or agencies and all levels of governments regarding best practices for water use and management;
- Define water problems and priorities, economic feasibility of solutions, responsibility, necessary legislation and required action;
- Communicate and coordinate between levels of government and their agencies about water use and management;
- Present proposals and recommendations to local or senior governments, according to jurisdiction and responsibility;
- Participate financially or otherwise, in surveys, investigations or projects on behalf of Okanagan local governments;
- Coordinate implementation of the Okanagan Basin Study Plan (1974) – for water management activities that affect the Valley as a whole;
- Advise local or senior government agencies when proposed actions, regulations or bylaws are contrary to the Okanagan Basin Study Plan or OBWB recommendations; and
- Participate in an aquatic weed control program for Okanagan lakes

[1] See www.obwb.ca/board-of-directors/governance/

Current Situation

The Okanagan region has many advantages – mild and sunny weather, deep lakes, and a dramatic backdrop of grassy hills and forested mountains. As a result, students, young families and retirees are moving to the valley from other parts of Canada and around the world to enjoy this beautiful place. New residents bring vitality, culture and economic growth to our region, and local communities are making plans to accommodate them. However, we are working with a legacy of past planning decisions that have not been gentle to the environment. Our ecosystems are stressed through intense development on floodplains, loss of wetlands and riparian areas, and resource extraction. Our growing communities are vulnerable to climate change, which will bring more intense droughts, floods, and storms.

The "drought of record" was marked by three consecutive years of low rainfall beginning in 1929. The population of the valley was much smaller then, and there was less extensive agriculture. A multi-year extended drought now could make it very difficult to manage water systems and provide for all needs. A climate-driven shift from winter snow to winter rain could also lead to water shortages even if overall precipitation is the same, because there may not be enough storage in lakes and reservoirs to hold the water necessary. The "flood of record" was in 1894, and had far greater volume than the most recent damaging floods of 2017 and 2018. These historical events remind us that even if climate change were not occurring, the Okanagan is vulnerable to extreme drought and flood. **Figure 1** shows that the amount of inflow each year fluctuates wildly. Average years are rare. Instead we must plan for changing conditions.

We have great potential to strengthen our resilience. Okanagan communities have many advantages, compared to elsewhere in B.C. A spirit of innovation exists here, balanced with a respect for maintaining the quality of the environment – especially the water. As we better understand the causes and solutions for environmental stress, we can make strong, integrated community-based plans and decisions that reduce human impacts to our water in this time of change.

OBWB Operating Principles and Core Values[2]

- One Valley – One Water. Our actions and decisions will recognize that all water in the Okanagan is connected, in all its forms and sources.
- Transparency. Our actions and decisions will be transparent and open.
- Collaboration. We will seek collaborative solutions to water concerns, to bridge the interests of all Okanagan citizens and orders of government, and to help resolve water conflicts.

[2] From the OBWB Governance Manual

- Informed Action. We will undertake actions that are informed by the best available science and the expertise of the community.
- Credibility. We will be a reliable source of water science and information for the Okanagan, and a hub for water research.
- Balance. We will take a non-partisan approach, and balance environmental, social, and economic interests.
- Sharing. We will share knowledge, data and information, contributing to the creation of resilient community water plans, and educating citizens.
- Innovation. We will be committed to innovation, seeking out new ideas and approaches, while at the same time respecting and drawing on historical knowledge.
- Leaving a Legacy. We will consider the needs of our children and grandchildren, as well as those of the present, looking ahead to protect water in times of change.

Long-term goals/Strategic priorities

Goal 1: Delivering our mandate across all projects and programs

Over 50 years, as the Okanagan Valley has grown and changed, the OBWB has adapted to meet community needs. Looking forward, we need to maintain a stable and flexible organization and remain open to new challenges. The OBWB has a strong organizational structure, with board, staff and the Okanagan Water Stewardship Council working together. We must stay awake to trends and understand how needs are changing. At the same time, we are valued for consistency and reliability – aligned with our mandate. We create capacity for all Okanagan communities to continuously improve the sustainability of Okanagan water, regardless of the pace of change.

Sub-goal 1 (a): Water management in the Okanagan is not limited by funding or capacity, and costs are minimized through partnerships, leveraging and advance planning

As both a grant maker and recipient of senior government funding, and by tapping the expertise of the Okanagan Water Stewardship Council (the Council or OWSC), the OBWB has accelerated funding for water in the valley. Seed funding to and from our partners – local governments, universities, improvement districts and other organizations – triggers new funds from many sources. External funding may come to OBWB or to any partner to benefit Okanagan water. The OBWB also has the ability to leverage in-kind contributions, which can be as valuable as cash.

Desired Outcomes and Actions: The OBWB works to diversify funding sources, securing new funding partners and leveraging those through further partnerships. The OBWB also

identifies and advocates for new senior government funding policies to support water initiatives.

Sub-goal 1 (b): The OBWB is a respected advocate for water concerns

The OBWB has a mandate to make recommendations to local and senior governments, to improve water management in the Okanagan, and to advocate for needed changes in legislation. To be most effective, the OBWB seeks to provide information of the highest quality, maintaining a balanced approach and professional standards. This requires the board, staff and council to continuously learn about water issues and trends, and find the OBWB's role to promote solutions. The OBWB is objective, transparent and non-partisan.

Desired Outcomes and Actions: The OBWB maintains close communication with all levels of government, with our network of water experts and the public – to understand needs and challenges. Through ongoing learning, the board, staff and council continuously enhance the quality of information and advice we provide. The OBWB will use this information to provide advice to all levels of government where appropriate.

Sub-goal 1(c): The Okanagan has a knowledgeable and engaged public, with widespread support for science-based planning, water conservation and reducing pollution

The public are essential partners for all of our work. By bridging the communications of local water providers and water-related agencies, the OBWB supports consistent public outreach, reducing costs and increasing social impact. Giving information to our citizens helps reduce waste, and builds support for water protection and improvements.

Desired Outcomes and Actions: The OBWB has a key role in creating a common understanding of Okanagan water challenges, countering the myth of abundance so that the public knows the value of water and are meaningfully engaged and empowered to help with solutions.

Sub-goal 1(d): The OWSC extends the OBWB's knowledge and communications, and provides insight and advice on current and future water issues

The OWSC is an essential partner of the OBWB and is formally established in our legislation. Through their respective organizations, members represent all corners of the water sector, sharing expertise and strategic information across a wide range of water issues. The OWSC's advice and analysis supports the OBWB's role in advocating for Okanagan water concerns. Members also share information back to their wider networks, raising the collective knowledge of the broader community.

Desired Outcomes and Actions: The OWSC improves the quality of the OBWB's programs and projects, diversifies our partnerships, and increases our credibility with the broader community. The OWSC supports the OBWB in our strategic initiatives, and assists with developing policy recommendations to senior government. The board and council meet at least once a year, and members of the board and council attend each other's monthly meetings.

Sub-goal 1(e): The OBWB tracks progress toward the goals in this strategic plan

The OBWB will measure success in a variety of ways, tracking the work of the Board and Council, as well as our contributions to the efforts of our partners. Real success is progress toward a sustainable water future for the valley. Healthy water depends on healthy partnerships: communities and stakeholders working together to increase capacity and understanding, improving water quality and conservation, and adapting to changing environmental, social and economic conditions. Thus, one measure of success is the strength and diversity of our partnerships – whether for a short project or long initiative.

Desired Outcomes and Actions: The goals in this strategic plan are used as the benchmarks for reporting each year in our Annual Report, and for the Water Management Program Review every four years. An appendix of baseline indicators is given in Appendix A.

Goal 2: Managing water for all needs, under all conditions

Water shortages are common in dry years and recently there have also been historic floods in the Okanagan. Under extreme conditions, with variable snow pack, we risk dry streams and drawing down lakes during multiyear droughts and being swamped with water in wet years. Many conflicts can be avoided with careful management and planning based on good science and data. The best and least costly way to access more water in dry years is through conservation. The best and least costly way to reduce flood risk is to improve land use planning and policy, use green infrastructure, and restore natural systems.

Sub-goal 2 (a): Local communities have plans in place and the capacity to prepare for and respond to climate change

By coordinating local efforts, securing external funding, and sharing information and best practices we can help local governments create better plans at lower cost for drought and flood response and mitigation, to improve water quality, and to enhance the resilience of water systems. Mitigation through planning and policy changes is often more effective, durable, and cost-effective than building dikes or expanding reservoirs. The OBWB has a key role to

coordinate planning among local governments, Indigenous communities, and utilities, and to support valley-wide planning efforts.

Desired Outcomes and Actions: The Okanagan has a sustainable water supply and robust system to manage water for human and environmental needs, with plans and policy that support healthy communities and a resilient economy while reducing conflicts between sectors.

Sub-goal 2 (b): The Okanagan has sufficient, accessible, water data to adapt to weather extremes, to changes in the economy, and to population growth

We can't manage what we don't measure. To ensure water security, and equitable water sharing between different sectors and needs, we must understand how much water enters the valley, in what location, where it is needed, and how these factors change from year to year. This information forms the backbone of planning and emergency preparedness. Data accessibility includes being able to use and understand the data. The OBWB seeks to facilitate and coordinate water data collection and accessibility without duplicating the role of senior government.

Desired Outcomes and Actions: The OBWB supports and increases efforts to monitor surface and groundwater, gathering and sharing information where there is no other agency performing these functions.

Sub-goal 2 (c): The Okanagan has the best available water science and models to sustainably manage surface and groundwater

The Okanagan's hydrology is changing. Water and climate models are needed to understand this change, and to support infrastructure planning, flood mitigation, water allocations, environmental flows, and other water management planning. Much less is known about groundwater than surface water, and it is a priority to better understand our aquifers. As technology and data improve, and as the climate and population patterns change, we will continue to improve and update these models.

Desired Outcomes and Actions: The OBWB continues to improve models of climate, surface and groundwater, to support water planning and management in a changing system.

Sub-goal 2 (d): All sectors in the Okanagan use water efficiently

The least costly way to expand water availability and increase the resilience of water supplies is to decrease demand by reducing waste. Actions may include upgrading irrigation systems, stopping leaks, metering end users, developing conservation plans, and conducting outreach campaigns, among other approaches. Improving water efficiency is insurance against harm caused by shortages, and reduces burdens on delivery systems during wet years when there are high-turbidity events. Reducing demand also saves the costs and energy needed to pump, treat and deliver water. Water purveyors should have consistent language and approaches to water efficiency campaigns and the application of watering restrictions.

Desired Outcomes and Actions: The OBWB assists water purveyors, agriculture and other industries to improve water efficiency by sharing data and information, and supporting consistency in long-term planning and public outreach.

Sub-goal 2 (e): Water is managed and regulated in a way that protects the needs of the environment, agriculture, and communities over the long term

Water use and management is primarily regulated by the province, who oversees licensing and requirements to maintain stream flows, regulates lake levels, and looks after dam safety, among other things. Local communities and water suppliers manage water distribution for their customers, and may manage environmental flow releases from reservoirs. Local jurisdictions can also have powers for land use regulation that affect water quality and the availability of water for the environment, as well as drought response and flood risk reduction. The OBWB has a mandate to identify problems with regulations and policy, and/or how they are executed, as well as potential remedies.

Desired Outcomes and Actions: The OBWB works with partners to identify gaps in policy, planning and regulation for water management, makes recommendations to all levels of government, and assists with solutions.

Goal 3: Maintaining excellent water quality in the Okanagan

Water quality can be difficult to manage because small sources of pollution add up to big problems. Source protection falls into three areas: upper-watershed lakes and streams; agricultural areas; and developed cities, towns and roadways. Different actions are needed for each. Healthy riparian areas and wetlands protect water quality and reduce runoff. Aquatic invasive species are a specific kind of water pollution. Local communities need the tools and resources to maintain the quality of water sources and aquatic habitats, and provide safe drinking water.

Sub-goal 3 (a): The OBWB has the data and research needed to fully understand risks to source water, and how to manage those risks

Source protection is one of the most complex issues facing the Okanagan. We rely on healthy lakes and streams for our drinking water, but we have multi-use watersheds under provincial jurisdiction, and our main valley lakes and most productive aquifers are surrounded by urban development and agriculture. Risk assessment, planning and response are ongoing challenges as our population increases. Water quality monitoring requires coordination, and more work is needed to expand water quality data collection and accessibility.

Desired Outcomes and Actions: The OBWB facilitates source protection by supporting research and data collection, helping to set consistent baselines, indicators and targets, and helping to share and manage water quality data.

Sub-goal 3 (b): The OBWB fosters collaborative approaches to protect water quality

Many source protection conflicts can be reduced through policy and management practices. The province, Indigenous Peoples, water purveyors, and a large number of different resource users are finding ways to work collaboratively on source protection to minimize the impact of range uses, resource development, and recreation. There is a need for additional research, policy, and planning so that approaches are consistent throughout the watershed.

Desired Outcomes and Actions: The OBWB assists local governments, water purveyors, Okanagan Indigenous communities, provincial agencies and other partners, including the public, to work collaboratively on source protection, and advocates to senior governments for water-protective policies.

Sub-goal 3 (c): Pollution is reduced in developed areas through infrastructure improvements and policies that limit contamination of surface and ground waters

Although wastewater treatment has reduced sewage pollution overall, a growing population and resulting development has increased the volume of stormwater. This has increased the need to reduce pollution from stormwater and to better understand emerging contaminants. Stormwater flows mostly untreated into the valley lakes, potentially polluting one of our primary drinking sources and our greatest natural asset. During intense rain events – expected to occur more frequently with climate change – stormwater can flood small neighborhood streams with contaminated water. Infrastructure improvements, sized for climate change, along with best planning practices, are essential; supported with good policies by local and provincial governments.

Desired Outcomes and Actions: The OBWB shares information and helps local communities coordinate and improve stormwater and wastewater plans and policies, and helps secure funding for plans and infrastructure improvement.

Sub-goal 3 (d): Okanagan communities understand the value of green infrastructure systems, and the condition of our existing natural assets, and have plans and policies to protect and restore them

Wetlands, riparian areas and other natural buffers protect water quality, mitigate flooding and erosion, and have many other values as green infrastructure, especially for stormwater treatment. Communities need regularly updated inventories of sensitive areas, and plans and policies to protect, restore and maintain them over time. Engineered natural systems, like constructed wetlands, have many of the same functions that nature provides.

Desired Outcomes and Actions: The OBWB works with partners to identify, inventory, and evaluate natural assets, and to secure funding to protect and restore green infrastructure in the Okanagan.

Sub-goal 3 (e): Harmful new aquatic invasive species, including zebra mussels, are kept out of the Okanagan, and Eurasian watermilfoil continues to be controlled

It is impossible to eradicate aquatic invasive species once they enter the Okanagan lake system, as the OBWB has experienced with watermilfoil. Only the provincial and federal governments have authority to inspect boats and equipment at B.C.'s borders. The province is coordinating efforts to educate boaters and recreational users who can unknowingly spread invasive species. The role of the OBWB and local communities is to both advocate for prevention and to think ahead about management options for current and potential invasive species.

Desired Outcomes and Actions: The OBWB advocates for inspections, regulations and controls; and educates the public to raise awareness of the potential threats and future costs of new invasive species. We have a long-standing mandate to manage watermilfoil, and if necessary to support mitigation efforts for other aquatic invasive species.

Goal 4: Advancing Partnerships with Okanagan Indigenous Communities

The governments of Canada and British Columbia have committed to recognizing the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Significant changes in senior government policy will be coming, and local governments have an important role to advance reconciliation. The OBWB will take steps to further our engagement and partnerships with Okanagan Indigenous communities, committing to ongoing learning about Indigenous culture, Indigenous values with respect to water, and rights of self-determination.

Sub-goal 4 (a): The OBWB's directors, staff and council members are knowledgeable about the history, culture and values of Okanagan Indigenous communities with respect to water

Education and understanding are essential for strong partnerships, and non-Indigenous communities have had few opportunities to learn about the Indigenous history, culture and values of the Okanagan, and the ways that traditional knowledge complements Western science. Okanagan Indigenous communities have a strong vision for the future, which can inform OBWB's projects and programs.

Desired Outcomes and Actions: The OBWB finds many more opportunities for engagement and learning from Okanagan Indigenous communities, in meetings, workshops, and in the field.

Sub-goal 4 (b): The OBWB engages in long-term partnerships with Okanagan Indigenous communities to advance mutual goals to protect Okanagan water quality and supply

The OBWB has had many partnerships with the Okanagan Nation Alliance and individual Indigenous communities in the valley, including projects on environmental flow needs and wetland restoration. There are many opportunities for aligning efforts, including potential for projects incorporating traditional knowledge and Western science. While undertaking these partnerships, the OBWB will respect the self-determination of Indigenous communities, and strive to abide by their principles established for data sovereignty.

Desired Outcomes and Actions: The OBWB finds many more opportunities to collaborate with the Okanagan Nation Alliance and Indigenous communities in the Okanagan to undertake projects that meet mutual goals in water management.

Okanagan Basin Water Board Strategic Plan: 2020-2024

Appendix A

The following are tracking measures for a baseline with which we will use to measure certain key areas for OBWB. They are not comprehensive, but they represent aspects of watershed protection and management that are important, measureable, tangible, and with which the OBWB is directly involved. Overall, the measures are intended to represent progress for the watershed, more so than operational milestones for OBWB. Some of the measures represent the maintenance of best practices rather than continued expansion. We have chosen measures for which there is readily-available data, although some measures will best be tracked through a qualitative, narrative approach. Each measure is associated with a specific goal. The OBWB will track these measures annually in our annual reports. We will report on the barriers as well as the successes over time.

Tracking measures for Goal 1: Delivering our mandate across all projects and programs

A1 (a): Funding water in the valley

- Sum of grants to OBWB, annually and over the 5-year period of this strategic plan;
- Sum of successful grants to OBWB partners for which OBWB staff assisted with application.

A1 (b): Change through informed advocacy

- Clear examples of government policy changes, consistent with OBWB advocacy.

A1 (c): Educated public

- Okanagan WaterWise survey results measuring changes in public knowledge about water availability, water quality, and invasive aquatic species.

A1 (d): OWSC engagement

- Number of letters, reports and other documents prepared by OWSC members for OBWB.

A1 (e): Tracking progress

- OBWB reports each year on these strategic tracking measures. The results are given in the OBWB's Annual Report, and may be qualitative or quantitative. We want to know what is working, and what is not working.

Tracking measures for Goal 2: Managing water for all needs, under all conditions

A2 (a): Plans for climate adaptation

- Number of drought and flood response plans and reports developed by the OBWB, or with OBWB assistance;

A2 (b): Availability of water data

- Number of hydrometric stations under operation with publicly-available data, including Water Survey stations, and independently-operated stations;
- Number of climate/weather stations under operation with publicly-available data, including government-operated stations, and independently-operated stations;

A2 (c): Excellent water science

- The number and scope of initiatives to improve Okanagan models of surface flow, groundwater, and groundwater/surface water connections.

A2 (d): Improving water efficiency

- The number and scope of initiatives to improve Okanagan water use efficiency.

A2 (e): Managing water for all needs

- Water management is primarily a provincial responsibility, although Indigenous and local governments also have significant roles. As the OBWB has a mandate to identify gaps, make recommendations, and assist with solutions, the tracking measure should be a narrative of the successes and failures related to water management over the life of this plan.

Tracking measures for Goal 3: Maintaining excellent water quality in the Okanagan

A3 (a): Understanding risks to source waters

- The number, scope and progress of initiatives related to research, data collection, and the development of baselines and targets for source water quality.

A3 (b): Fostering collaborative approaches

- The number of formal new source assessments and source protection plans, as well as their consistency among water purveyors.

A3 (c): Pollution reduction through policy and infrastructure

- Demonstrated improvements to stormwater management in the Okanagan, including infrastructure, plans and policies.

A3 (d): Supporting green infrastructure

- The number and scope of green infrastructure initiatives, including physical green infrastructure as well as plans and policies that support green infrastructure.

A3 (e): Preventing and controlling aquatic invasive species

- The measure of OBWB's ability to continue controlling invasive milfoil on public beaches and boating areas;
- The scope and success of prevention measures to exclude invasive mussels.

Tracking measures for Goal 4: Advancing partnerships with Okanagan Indigenous Communities

A4 (a): Increasing knowledge about Okanagan Indigenous history, culture and values

- The number of Indigenous-led workshops, training sessions and other education opportunities attended or undertaken by OBWB board, staff, and members of the OWSC each year.

A4 (b): Partnerships with Indigenous communities

- The number and scope of initiatives, new and ongoing, undertaken in partnership with Okanagan Indigenous communities.

Okanagan Basin WATER BOARD
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MEMORANDUM

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 7.2

File No. 0550.04

To: OBWB Directors

From: James Littley

Date: February 26, 2020

Subject: Invasive Mussel Update Memo

Invasive Mussel Action Items and Update

At the February Board meeting we provided a progress report on our calls to action to senior governments for invasive mussel prevention. Staff have reviewed those calls to action, and recommend that we send an open letter to the province (a draft will be provided at the board meeting) calling for action in the following areas:

Province of B.C.:

1. Pass legislation to require all watercraft owners to pull the drain plug to their watercraft prior to transporting it.

We understand that the province is looking at this legislation, and we recommend that the board call for it to be a high-priority item on the current legislative agenda.

2. Increase inspection program funding at least back to 2017 levels at $4.45 million.

It is unclear what the total amount allocated to the inspection station program will be this year, but there was no mention of Aquatic Invasive Species in the 2020 B.C. Budget, or in the Ministry Service Plans for FLNRORD or the Ministry of Environment and Climate Change Strategy. We recommend that the board reiterate this call to action.

3. Renew the private-public funding agreement, which has been used to fund inspection stations for the past several years and is set to expire in 2021.

We understand that the province is working on this objective, and approaching partners for a renewal of funding. It is important to stress to the government of B.C. that they must provide government funding first, and not simply rely on partners to fund inspection and prevention programs while cutting government funding. We recommend that the board reiterate this call to action.

4. Introduce legislation requiring all watercraft entering B.C. to report for an inspection prior to launching in provincial waters. And supplement provincial inspection efforts using partner organizations such as marinas and yacht clubs, or implementing a sticker program.

The latest response from the province indicated that they were considering this option, but that it would be a complex change in legislation requiring supportive mechanisms like enforcement, funding, and outreach. We recommend that the board continue to call for this action, and suggest a working group to explore options and partnerships, as well as incorporate lessons from other jurisdictions which have taken a similar approach.

Calls to Action – Federal

From February board meeting:

Our most recent calls for federal action were sent to the new Minister of Fisheries and Oceans Canada, Bernadette Jordan, in a Dec. 18, 2019 joint letter from OBWB and the Shuswap Watershed Council (SWC) and follow-up news release (link: http://bit.ly/DMM-Dec2019_fed-letter). The letter calls for:

1. Parks Canada to provide inspection and decontamination stations at Banff and Jasper National Parks.

2. Expansion of early detection monitoring programs to enable more water bodies to be regularly tested for invasive mussels.

3. Expansion of education and outreach programs, complimenting efforts that are currently underway.

4. The Federal Fisheries Act's Aquatic Invasive Species (AIS) Regulation be fully enacted and require watercraft leaving invasive mussel-infested jurisdictions be inspected and decontaminated to prevent new invasions; the development of new robust measures to prevent floatplanes and amphibious aircraft from transporting aquatic invasive species; and the inclusion of AIS prevention education in the Canadian Boating Licence program.

To date, we have not yet received a reply from Minister Jordan since this letter was sent.

Since February:

While we have had prior assurances from the federal government that Canada Border Services Agency (CBSA) staff are working with provincial inspectors, there is still a concern that not all stations and regions of CBSA in the province are trained to inspect for AIS, or report consistently. We recommend that the board call on the federal government to mandate that CBSA's B.C. ports of entry be required to inspect all incoming watercraft for AIS. 100% compliance by CBSA would help free up provincial inspection resources which could be reallocated to efforts at interprovincial border crossings.

B.C. Inspection Progress to 2019

In February we also provided an update on inspection numbers compared to prior years. We noted a slightly lower number of reported high-risk boats (6% in 2017, 4% in 2018, 2.5% in 2019) and only about one-third of the number of watercraft were decontaminated and quarantined in 2019 compared to the year before. This could be a measure of outreach and education success, or it could be inconsistencies in reporting, or a combination of factors. We recommend that the board call on the province to improve reporting consistency for accurate year-over-year progress reports.

THE CORPORATION OF THE

TOWNSHIP OF SPALLUMCHEEN

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OUR FILE NO.

4144 Spallumcheen Way
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Email: mayor@spallumcheentwp.bc.ca

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OFFICE OF THE MAYOR

February 6th, 2020

Sent by email to Bernadette.Jordan@parl.gc.ca

Hon. Bernadette Jordan
Minister of Fisheries, Oceans, and the Canadian Coast Guard
House of Commons
Parliament Buildings
Ottawa, Ontario K1A 0A6

Dear Minister Jordan:

Re: Preventing the spread of Aquatic Invasive Mussels to British Columbia

At the Municipal Council meeting held on Monday, February 3rd, 2020, the following resolution was passed:

> "....***that the Township of Spallumcheen Council direct staff to send a letter of support to the Minister of Fisheries, Oceans, and the Canadian Coast Guard with regards to Preventing the spread of Aquatic Invasive Mussels to British Columbia."***

We attach a copy of the December 17th, 2019 letter from the Okanagan Basin Water Board and the Shuswap Watershed Council and agree wholeheartedly with their concerns of an invasion of Zebra and Quagga mussels into our lakes. Any action that can be taken to avoid this situation would be most desirable.

Respectfully,

Christine Fraser
Mayor

/jh

Attach: Letter from Shuswap Watershed Council dated December 17th, 2019

SHUSWAP watershed council

Okanagan Basin WATER BOARD

Hon. Bernadette Jordan
Minister of Fisheries, Oceans, and the Canadian Coast Guard
House of Commons
Ottawa, Ontario
K1A 0A6
Sent by e-mail to Bernadette.Jordan@parl.gc.ca

December 17, 2019

Re: Preventing the spread of Aquatic Invasive Mussels to British Columbia

Dear Minister Jordan,

Congratulations on your recent appointment as the Minister of Fisheries, Oceans and the Canadian Coast Guard.

We are writing to express our concern about the threat of a Zebra and Quagga mussel invasion to the pristine lakes of British Columbia, and all of Western Canada. While we acknowledge the August 2018 announcement of federal funding for invasive mussel prevention in B.C., we reiterate our call for greater support and funding.

Although B.C. does not presently have any known infestations of these mussels, an introduction would have devastating and costly impacts to water quality, fish populations and habitat, hydro-electric facilities, water utilities, beaches, and property values. Shuswap and Okanagan lakes are popular tourist destinations and see an influx of watercraft to our region each summer – and each year, watercraft contaminated with the mussels arrive in B.C. As federal government research has noted, we are especially vulnerable due to our warm water temperatures and high calcium content which puts us at greater risk than other regions since these conditions increase the chance of the mussels' survival. A single contaminated watercraft from an infested lake in Ontario or Manitoba could start an irreversible infestation in B.C. Currently, there is no method of eradicating Zebra or Quagga mussels in ecosystems as large and complex as the Shuswap and Okanagan.

An introduction would have a devastating impact on our economies. A 2013 Okanagan Basin Water Board (OBWB) study conservatively estimated an infestation at $42 million annually in direct costs and lost revenues in the Okanagan alone. Estimates from the Pacific NorthWest Economic Region (PNWER) peg the costs of an invasive mussel infestation at $500 million annually to the region.

As noted in an earlier letter from the OBWB, invasive mussels would cause a catastrophic collapse of Pacific salmon stocks were they to infest freshwater spawning habitat in the Columbia and Fraser River systems, both at high risk for infestation and ecological damage. A 2017 study by the Pacific Salmon Commission found that the contribution of the commercial and recreational sectors from Pacific salmon averaged $1.364 billion (USD) in output, $850 million (USD) in GDP, $485 million (USD) in labour income, and 12,400 FTE jobs to the Canadian economy. Additionally, Pacific salmon are a vitally important food

and ceremonial fish for several B.C. First Nations. We cannot afford to lose the spawning habitat which makes these important fisheries viable.

To date, we believe the federal government has not taken sufficient action on this issue, nor has it provided equitable funding to stop the spread of invasive Zebra and Quagga mussels. A report on Aquatic Invasive Species (AIS) by the Commissioner of the Environment and Sustainable Development (2019) is consistent with our concerns about the lack of urgency and intervention by the Department of Fisheries and Oceans. More recently, a report from the Standing Committee on Fisheries and Oceans (June 2019) found that the federal government's protection of Canadian lakes and waterways against AIS is inadequate. Additionally, the B.C. government reports that at least 19 infested watercraft were intercepted at provincial borders this summer: further evidence that despite current efforts, the threat of a mussel infestation continues.

Prevention is the best and most cost-effective option. A new federal investment in our province is needed, building upon the financial commitment of $400,000 provided by your department in August 2018, and could go toward the following prevention strategies:

- Expansion of B.C.'s watercraft inspection program to enable the establishment of more inspection stations around the province's perimeter. Recognizing previous Minister Jonathan Wilkinson's Dec. 13, 2018 response to a letter from the OBWB noting DFO cannot provide financial support for inspections since it "does not have budgetary authority," we recommend Parks Canada provide inspection and decontamination stations at Banff and Jasper National Parks, both protecting the National Parks, and preventing infested watercraft from entering B.C. through those routes.
- Expansion of early detection monitoring programs to enable more water bodies to be regularly tested for invasive mussels
- Expansion of education and outreach programs, complimenting efforts that are already underway.

Concurrent to supporting these programs in B.C., the department needs to take more action to contain mussel infestations and fully enact the Federal Fisheries Act's *Aquatic Invasive Species Regulation*. Such measures should include a requirement that watercraft leaving invasive mussel-infested jurisdictions be inspected and decontaminated to prevent new invasions; the development of new robust measures to prevent floatplanes and amphibious aircraft from transporting aquatic invasive species; and the inclusion of AIS prevention education in the Canadian Boating Licence program.

We take this issue seriously and are heavily invested in protecting our waters. For its part, OBWB has run its Don't Move A Mussel outreach and education campaign since 2012, spending more than $334,000 in local tax dollars on this initiative, and thanks to support from the Okanagan business community, delivered a program worth over $847,000. It has also provided $195,000 in local tax dollars between 2013 and 2019 to the Okanagan and Similkameen Invasive Species Society to assist with direct boater outreach and to conduct mussel monitoring. Similarly, the Shuswap Watershed Council spent $42,750 in local tax dollars on monitoring, education and outreach in 2018 and is spending a similar amount in 2019. Both our organizations have significant local experience and broad reach into Shuswap and Okanagan communities that can complement your efforts.

Considering all that is at risk in the Shuswap and Okanagan, and the current likelihood of an invasive mussel infestation, we call on the Government of Canada to take a more active role in protecting our waters. We look forward to working with you to address this threat and thank you for your attention and swift action on this matter.

Sincerely,

Paul Demenok
Chair, Shuswap Watershed Council
c/o Fraser Basin Council
200A – 1383 McGill Road
Kamloops, B.C. V2C 6K7
250 314.9660

Sue McKortoff
Chair, Okanagan Basin Water Board
1450 KLO Road
Kelowna, B.C. V1W 3Z4
250 469.6271

cc:

- Hon. Jonathan Wilkinson, Minister of Environment and Climate Change, responsible for Parks Canada
- Shuswap and Okanagan MPs: Mel Arnold, Tracy Gray, Dan Albas, Richard Cannings
- Federal Critics: Conservative Party – Mel Arnold; NDP – Gord Johns
- Secwepemc Chiefs: Wayne Christian, Oliver Arnouse, Judy Wilson, Cliff Arnouse
- Chiefs Executive Council, Okanagan Nation Alliance
- MLAs: Greg Kyllo, Eric Foster, Norm Letnick, Steve Thomson, Ben Stewart, Dan Ashton, Linda Larson
- Regional District Chairs for Columbia Shuswap, North Okanagan, Central Okanagan, Okanagan-Similkameen, and Thompson-Nicola
- Mayors of Okanagan and Shuswap municipalities
- Matt Morrison, Chief Executive Officer, Pacific NorthWest Economic Region
- Gail Wallin, Executive Director, Invasive Species Council of BC
- Chambers of Commerce: Kelowna, Vernon, Salmon Arm, South Shuswap, and North Shuswap
- Thompson Okanagan Tourism Association

About the Shuswap Watershed Council

The Shuswap Watershed Council (SWC) was established in 2014 as a watershed-based partnership that enhances water quality and safe recreation in the Shuswap. There are 18 SWC members that represent three regional districts, two municipalities, the Secwepemc Nation, two provincial government agencies, and Shuswap communities. The SWC is a collaborative, non-regulatory group. It works alongside organizations that have regulatory roles in managing the Shuswap watershed, complimenting their work and carefully avoiding duplication. Its primary mandate is to enhance, protect, and advocate for water quality in the Shuswap watershed.

About the Okanagan Basin Water Board

The Okanagan Basin Water Board (OBWB) was instituted in 1970 as a collaboration of the three Okanagan regional districts (North Okanagan, Central Okanagan, and Okanagan-Similkameen) to provide leadership on valley-wide water issues. The board is made up of 12 directors including three from each regional district, as well as a representative from the Okanagan Nation Alliance, the Water Supply Association of BC, and the Okanagan Water Stewardship Council (WSC). The WSC is a cross-disciplinary technical advisory body to the board. Advised by the council, the board delivers programs and activities to promote coordinated water management throughout the basin.

Okanagan Basin Water Board
Regular meeting
March 3, 2020
Agenda No: 8.2

Mailed on February 15, 2020.

TO: Mayor Sue McKortoff, Chair

Okanagan Basin Water Board.

1450 KLO Road.

Kelowna BC V1W 3Z4

Dear Ms. McKortoff.

This letter has been prepared by Earle Anthony, who was the Regional Water Rights Engineer for the Okanagan Basin in the 1970's and participated in the preparation of the Okanagan Basin Study released in 1974: and by Dr. Glenn Sinclair, who organized the Public Involvement portion of the 1974 Study.

Together we attended the Annual General Meeting of the Okanagan Basin Water Board in Kelowna in September 2019. We noted that the OK Basin had experienced significant flooding in the Spring of 2018 and that it was necessary to impose drought protocols in August of the same year. This combination of extremes in the same year clearly indicated that the annual water demand in the OK Basin has grown to the point that it is very close to the average annual inflow minus evaporation losses.

In the following months we reviewed recent reports on water use and reports on flooding in the basin. In particular, we reviewed a report prepared by the Province following the record floods of 2017. We noted that following near record floods in the Spring of 2017, the net inflow to Okanagan Lake in August in the same year was negative. This is another indication that annual water demand is approaching net annual water inflow to the basin.

We discussed our concerns with your staff and with Provincial and Federal employees who have a role in water management in the Okanagan Valley. In addition, we raised our concerns with some of the Federal and Provincial politicians in the Okanagan region.

From these reports and conversations, we concluded that unless significant changes are made to water management in the Okanagan Basin there will be serious economic, social and environmental problems in the near future.

Specifically, we recommend that the Basin Water Board and the senior levels of government give early attention to the following:

1) Improved inflow data. Expand the existing stream and lake gauge network to the number necessary to accurately determine the volume of water runoff into the basin. Many of the gauging stations established after of 1974 OK Basin Report have been discontinued.
2) Improve withdrawal data. Require accurate prompt reporting from the major water users (cities, irrigation districts, waterworks districts and water utilities) to document monthly the volume of water being diverted.

3) Improve computer models. The existing computer models used to determine water discharges from the major lakes consider only minimization of flood damage. These models must be modified to also deal with water use and drought control.
4) Improve water management planning. Studies need to be done to estimate and manage future water demand
5) Improve public participation in water management. The public must be engaged in decisions related to water use and water conservation. The current Public Involvement programs of your Board should be expanded with the support of the two governments to influence the curriculum of the elementary and secondary schools as well as the general public in matters related to water conservation and use in the OK basin.

It is our conviction that if these steps are taken by those with the mandate to do so, a water management system can be put in place in the Okanagan Basin to minimize the negative impact of future water shortages.

Yours Truly

Earle Anthony P.Eng (retired)
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Copies sent by email to:

Tracy Gray, MP Kelowna-Lake Country

Dan Albas, MP Central Okanagan-Similikameen-Nicola

Richard Cannings, MP South Okanagan-West Kootenays

Dan Ashton, MLA for Penticton

Steve Thompson, MLA for Okanagan Mission.

Mark Zacharias, Deputy Minister, Ministry of Environment and Climate Change Strategy

John Allan, Deputy Minister, Ministry of Forests, Lands, Natural Resource Operations, and Rural Development.

Ted White, Comptroller of Water Rights

Stephen Lucus, Deputy Minister of Environment and Climate Change Canada.

David Hutchings, Environment and Climate Change Canada