

Okanagan Basin Water Board Meeting Agenda



Okanagan Basin
WATER BOARD

DATE: Wednesday, Dec. 12, 2018

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

PLACE: Regional District of Central Okanagan
1450 KLO Rd., Kelowna, B.C.

1. CALL MEETING TO ORDER

1.1 Acknowledgement of First Nations Traditional Territory

2. ELECTION OF CHAIR AND VICE CHAIR

3. INTRODUCTION OF LATE ITEMS

4. APPROVAL OF AGENDA

5. ADOPTION OF MINUTES

5.1 Minutes of the Regular Meeting of the Okanagan Basin Water Board of Oct. 2, 2018 at Regional District of North Okanagan (page 1)

6. BOARD ROUNDTABLE

7. BOARD ORIENTATION

Presentations by Executive Director, Water Stewardship Director, and Operations and Grants Manager (Communications Director and Policy and Planning Specialist will present at next meeting in February)

8. STAFF REPORTS

8.1 Executive Director Report (page 7)

8.1.1 OBWB Meeting Schedule 2019 (page 11)

8.1.2 Special Contracting Resolution (page 12)

8.2 Water Stewardship Director Report (page 14)

8.3 Operations and Grants Manager Report (page 20) (resolution required)

8.4 Communications Director Report (page 23)

8.5 Policy and Planning Specialist Report (page 27)

9. NEW AND UNFINISHED BUSINESS

9.1 Policy Letters to B.C. Government Memo (page 30)

9.1.1 OBWB letter to B.C. Ministry of Environment and Climate Change re: invasive mussels (page 31)

9.1.2 OBWB letter to B.C.'s Ministry of Environment and Climate Change (MOECC) and Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) re: groundwater licensing (page 33)

9.1.3 OBWB letter to B.C.'s MOECC and FLNRORD staff re: groundwater licensing (page 34)

10. NEXT MEETING

10.1 The next meeting of the Okanagan Basin Water Board will be Tuesday, February 5, 2019 at 10 a.m. at Regional District of Central Okanagan in Kelowna.

11. ADJOURNMENT



**MINUTES OF A REGULAR MEETING OF THE OKANAGAN BASIN WATER BOARD
HELD OCTOBER 2, 2018, AT THE REGIONAL DISTRICT OF NORTH OKANAGAN
9848 ABERDEEN RD., COLDSTREAM, B.C.**

PRESENT

Chair Tracy Gray	Regional District Central Okanagan
Vice-chair Juliette Cunningham	Regional District North Okanagan
Director Doug Dirk	Regional District North Okanagan
Director Rick Fairbairn	Regional District North Okanagan
Director Cindy Fortin	Regional District Central Okanagan
Director Ron Hovanes	Regional District Okanagan-Similkameen
Director Lisa Wilson	Okanagan Nation Alliance
Alt. Director Bob Hrasko	Water Supply Association of BC
Director Denise Nielsen	Okanagan Water Stewardship Council

REGRETS

Director Doug Findlater	Regional District Central Okanagan
Director Sue McKortoff	Regional District Okanagan-Similkameen
Director Peter Waterman	Regional District Okanagan-Similkameen

STAFF

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

1. CALL MEETING TO ORDER

Chair Gray called the meeting to order at 10 a.m.

Chair Gray respectfully acknowledged that the meeting was being held on the traditional and unceded territory of Okanagan Nation.

2. INTRODUCTION OF LATE ITEMS

6.1.1 Flood Hydrology Contract Authorization

3. APPROVAL OF AGENDA

"THAT the agenda of the regular meeting of the Okanagan Basin Water Board of Oct. 2, 2018 be approved as amended."

CARRIED

4. ADOPTION OF MINUTES

4.1 Minutes of the Regular Meeting of the Okanagan Basin Water Board of Sept. 7, 2018 at the Regional District of Central Okanagan

"THAT the minutes of the regular meeting of the Okanagan Basin Water Board of Sept. 7, 2018 at the Regional District of Central Okanagan be approved."

CARRIED

5. CHAIR'S REPORT**7.1 Board Chair Report**

Chair Gray, acknowledging that she would not be running in the upcoming civic election, noted the progress the OBWB had made during the last four year term. Over those years, some of the projects include: a review of the board's Strategic Plan and the Water Conservation & Quality Improvement Grant Program, she said. There has also been successful lobbying for provincial invasive mussel inspection station funding, and support for this from other agencies, thanks to Water Board efforts, as well as stronger federal support with checkpoints at the Canada-U.S. border and participation at the Pacific NorthWest Economic Region. The OBWB has led efforts to conduct LiDAR to flood map the valley, as well as various Water Stewardship Council initiatives. There's still a lot of work ahead, but the organization is in good shape, she concluded.

Dir. Fortin entered the meeting at 10:04 a.m.

6. STAFF REPORTS**6.1 Executive Director Report**

Dr. Sears provided an update on the LiDAR flood mapping project, noting difficulty with rain and fog in the spring and fall, the summer fires, as well as the tragic plane crash in August.

Dir. Wilson entered the meeting at 10:06 a.m.

Staff will be getting a project update later today. In response to questions, Dr. Sears noted that the Okanagan-Similkameen still needs to be done, as well as some additional smaller areas.

The International Joint Commission (IJC)'s Osoyoos Lake Board of Control met on Sept. 18. It was noted at the meeting that the three Canadian commissioners (appointed by the Prime Minister) and three U.S. commissioners (appointed by the President) will be replaced this year. The board of control meeting had strong public attendance, likely due to this year's flooding when the lake reached almost historical levels. Water managers in attendance explained the influence of the Similkameen River and historic snowpack.

The board was provided an update on distribution of "A River Film" to Okanagan libraries, museums, post secondaries and school districts.

6.1.1 Flood Hydrology Contract Authorization

Dr. Sears noted that OBWB staff have been meeting with Okanagan regional district staff and the province and an RFP is now ready to go out to complete hydrologic modeling of the valley's mainstem lakes and river channel. This project is intended to compile the LiDAR and orthophoto data together to help local governments and the province with flood planning.

"THAT OBWB authorizes the executive director to approve the award of contract(s), consistent with all OBWB procurement policies, up to \$200,000 for completing hydrological modeling of the Okanagan mainstem lakes and river channel modeling work supporting flood mapping by Okanagan regional districts. And ONA and other local governments will have access to the data."

CARRIED

"THAT the Executive Director's Report, dated September 26, 2018, be received."

CARRIED

6.2 Water Stewardship Director Report

Mr. Jatel provided a brief update on last month's council meeting and the upcoming meeting on Oct. 11.

Fundraising and registration targets for the siwłkʷ (Water) For All - Environmental Flow Needs (EFN) Conference have been met. The conference will be led by three facilitators, two from Okanagan Nation, who will be using the Syilx lens and four food chiefs to inform the conversation. More details are at www.EFN2018.ca.

Work is underway on an Okanagan hydrology modeling project, providing detailed analysis of 19 sub-basins in lower valley-bottom lakes. The 19 streams have been identified by the Okanagan EFN Project committee with feedback from local municipalities. Two groupings of streams were selected, based on the timing of local government flood risk assessments/flood mapping.

“THAT the Water Stewardship Director's report, dated September 26, 2018, be received.”

CARRIED

6.3 Operations and Grants Manager Report

Mr. Littley updated the board on a presentation provided to the Shuswap Watershed Council, regarding the work of the OBWB and the potential for greater collaboration. The SWC is interested in providing a similar presentation at an upcoming OBWB meeting.

“THAT the Operations and Grants Manager's Report, dated September 24, 2018, be received.”

CARRIED

6.4 Communications Director Report

Following up on a request from the board the previous month, Ms. Jackson noted an offer was made to the Thompson-Nicola Regional District to come and speak about invasive mussels and the potential to work together to protect B.C. waters. There has been no response yet, she added.

Both Make Water Work and Don't Move A Mussel campaigns are wrapping up. Final reports will be provided in December. There has been some additional outreach, she added, including the Thompson Okanagan Tourism Association's golf tournament, whose theme – the UN Sustainable Development Goals – provided a venue to discuss various local water issues with a unique audience.

“THAT the Communications Director's Report, dated September 25, 2018, be received.”

CARRIED

6.5 Policy and Planning Specialist Report

Ms. Garcia told the board about Phase 2 funding that has been approved by the BC Agriculture and Food Climate Action Initiative to extend the OBWB's work, improving communication between the valley's water purveyors and farmers.

The board was also updated on the Mainstem Drought Stage Triggers Project, working with water suppliers who draw off valley bottom lakes to coordinate in times of drought.

Ms. Garcia explained the reason for the project, noting that the 2015 drought made it clear that shared drought triggers were needed since water suppliers on mainstem (valley-bottom) lakes don't control their water levels – the Province does.

Declaration of drought stages can result in personal hardship, economic losses to agriculture and businesses, and so they need to be correct and defensible. Although Okanagan Lake is a large reservoir, every withdrawal matters in a multi-year drought, she added.

The project team included lake management expert Brian Symonds (formerly Okanagan lake level manager for B.C.), well-respected hydrologist Brian Guy, Water Supply Association of B.C.'s Bob Hrasko, Okanagan Nation Alliance's Fisheries Biologist Karilyn Alex and others. Input was provided by the major water suppliers who draw off mainstem lakes and the province. Smaller suppliers were invited but many did not participate.

Regulation of mainstem lakes is guided by the 1974 Canada-B.C. Okanagan Basin Agreement, which was reaffirmed in 1982. The triggers were developed in keeping with the province's lake management practices, as well as using the Okanagan Fish/Water Management Tool computer model. The stages will have to be reviewed over time with climate change and other possible influencing factors, Garcia added.

Osoyoos Lake, as a transboundary waterway, is already regulated through the IJC. As such, any triggers adopted for it through this process would be considered subordinate to the drought criteria and corresponding regulatory requirements set out in IJC orders, but these triggers can act as a guideline for these orders.

In response to questions, Ms. Garcia explained that, as a result of the 2015 drought, OBWB staff are already in contact with utilities and the province on a regular basis regarding lake levels. The next step would be to have utilities align their drought stages and water restrictions.

The OBWB was considered an appropriate agency to act as coordinator given its valley-wide mandate. As such, it would watch lake levels starting on June 1, or earlier depending on the water situation, and then contact the province if it falls into a "stage." Water suppliers would be convened to discuss appropriate response and those suppliers would make the final decision.

Provincial regulations would be enforced by the province, local regulations by local suppliers.

Staff are now following up with utilities who draw off the valley's mainstem lakes to help them integrate these triggers into their drought plans.

"THAT the Policy and Planning Specialist's Report, dated September 25, 2018, be received."

CARRIED

7. NEW AND UNFINISHED BUSINESS

7.1 Invasive Mussel Memo

Staff provided the board an update on inspection efforts and suggested next steps by the OBWB.

Mr. Littley noted that, while some groups have suggested year-round inspections and out-of-province boat bans, legislation that requires all watercraft entering B.C. to report to an inspection station before launching in provincial waters would be more prudent. The board made this request in October 2017 and there has been no update from the province on this, he

added.

In October 2017 the board also asked for expanded: inspections, full-status COs with authority to intercept those who fail to stop at mandatory inspection stations and, trained mussel detection dogs. In response to questions, Ms. Jackson added that in 2018 inspection stations increased from eight to 10, a second full-status CO was added, and a second dog is being trained to join the program in 2019.

The board was also told that federal Fisheries and Oceans Minister Jonathan Wilkinson has not responded yet to an Aug. 16 OBWB letter requesting an increase in support for mussel prevention efforts. There was some discussion about the August federal funding announcement and it was suggested that the OBWB, again, offer support for those efforts that were announced, including support to the Invasive Species Council of BC.

Ms. Jackson noted staff offered this support as recently as Sept. 27, during a province-wide call regarding aquatic invasive species outreach. She offered to follow-up.

“THAT the OBWB send an open letter to the province calling for legislative changes that require all watercraft entering B.C. to report to an inspection station prior to launching in provincial waters, and requesting an update on all other action items as called for in our October 2017 letter to Minister Heyman.”

CARRIED

“THAT the Invasive Mussel Report, dated September 25, 2018, be received.”

CARRIED

8. IN-CAMERA

8.1 In-camera session (under sec. 90(1)(k) of the Community Charter)

A resolution was presented that the board go into closed meeting at 11:55 a.m.

“THAT the board meeting be closed under sec. 90 (1)(k) of the Community Charter.”

CARRIED

9. RISE & REPORT FROM IN-CAMERA

9.1 The board rose from in-camera at 12:01 p.m. and reported on the approval of a time and materials contract to Vernon's Associated Environmental Consultants to develop 19 hydrologic models for long-term water planning and management.

10. NEXT MEETING

10.1 The next meeting of the Okanagan Basin Water Board will be Wednesday, December 12, 2018 at 10 a.m. at Regional District of Central Okanagan in Kelowna.

Directors, some of which are up for re-election and some who are not running again, provided some final words. Vice-chair Cunningham, who is not running for re-election, noted her time on the board for the last seven years and her support for the work that has been done. She added that she looks forward to continuing to follow the efforts of the organization.

Dr. Sears thanked the board for their continued support to staff and the projects and issues they are involved in.

10. ADJOURNMENT

"THAT there being no further business, the regular meeting of the Okanagan Basin Water Board of October 2, 2018 be adjourned at 12:05 p.m."

CARRIED

Certified Correct:		
Chair		Executive Director

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 8.1

File No. 0550.04

To: OBWB Directors
From: Anna Warwick Sears
Date: December 4, 2018
Subject: Executive Director Report

Changes to Board of Directors and Board Election

The first item on the agenda is the election of Chair and Vice-Chair for the OBWB. Please reach out to your fellow directors to discuss nominations before the meeting. We'll have ballots prepared if there is more than one nomination for either position. For 2018, Directors are:

RDNO: Victor Cumming, Rick Fairbairn, Bob Fleming (alternates: Christine Fraser, Amanda Shatzko, Shirley Fowler).

RDCO: To be announced prior to meeting. Staff will circulate names to Board Directors.

RDOS: To be announced prior to meeting. Staff will circulate names to Board Directors.

Water Management Appointments: Lisa Wilson - Okanagan Nation Alliance (ONA), Bob Hrasko - Water Supply Association of BC, Denise Neilsen - Okanagan Water Stewardship Council (alternate: Scott Boswell).

Board Roundtable and Board Orientation

In 2017, we started a new practice of having a roundtable at the first meeting of the year, in which board directors introduce themselves and talk about the main water concerns in their jurisdiction. At the OBWB table, each director acts on behalf of the entire watershed, but brings the perspectives of their home communities. Board directors are asked to come with some thoughts about priority water issues.

After the Board Roundtable we will have three staff presentations. I will give an overview of the structure and governance of the Board and our programs. Nelson Jatel will present on the Okanagan Water Stewardship Council and the water science projects he manages. James Littlely will present on OBWB grant programs and milfoil control. At our next regular board meeting, there will be presentations from Corinne Jackson on OBWB communications, and Kellie Garcia on policy and planning initiatives. We have broken up the staff presentations between two meetings to give more time for regular business.

OBWB 2019 Schedule

I have attached the OBWB's 2019 meeting schedule. At the request of the board in 2018, most of the winter-season meetings are held in the Central Okanagan, with two meetings a year in the South, and North Okanagan. As a general rule, we meet on the first Tuesday of the month, except in September when the meeting is on Friday, to accommodate the Annual Public Meeting, and when the meeting is cancelled due to conflicts with holiday schedules. The calendar includes notes for important items that occur at specific board meeting dates. Board directors will receive calendar invites for the scheduled meetings. In 2019, the board will be undertaking its 5-year strategic planning process, supported by the Okanagan Water Stewardship Council, the board's technical advisory body. There will be a workshop with the Council on the day of the May 7th board meeting, with a possible extended meeting time. I will provide more information on this process at the February, 2019 OBWB meeting.

Okanagan Floodplain Mapping

In March-April 2018, the OBWB received \$1.45 mill. from Emergency Management BC to fund a LiDAR (Light Detection and Ranging) acquisition project for the Okanagan for use in flood mapping. LiDAR is a radar technology that gives very detailed digital elevation maps. This project is nearing completion. The actual acquisition took place between March and October, and suffered many delays including smoke, overcast skies and a terrible plane crash. Hard drives containing a portion of the LiDAR were in the plane crash, and the contractor is still attempting to recover the data. If any data is not recoverable, the area will be re-flown in June. All of the secure data will be available for Okanagan partners in January.

The RDNO, RDCO and RDOS have pooled their federal grants from the National Disaster Mitigation Fund, and are working with the OBWB to do flood mapping of mainstem lakeshore and river channel areas that flooded in 2017. The OBWB will hold the contracts, and manage the project.

During the October 1, 2018 board meeting, there was a resolution of support for OBWB to issue a request for proposals and subsequent contract to do a hydrological analysis of the Okanagan mainstem lakes and river system as the next stage of the flood mapping project. OBWB directors must approve any contracting above \$25,000. Working with our technical advisors, it then became evident that it would be much more cost-effective to organize the project differently, with one contract to do a bathymetry (channel depth) study of the Okanagan River, and one contract to do the rest of the flood mapping (including the hydrological analysis). This plan was approved by email resolution by the OBWB directors on October 16th. The memo to support this resolution request is attached. In November, we awarded contracts for the flood mapping itself, as well as a bathymetric survey of the Okanagan River channel (needed as part of the flood mapping project, along with the LiDAR).

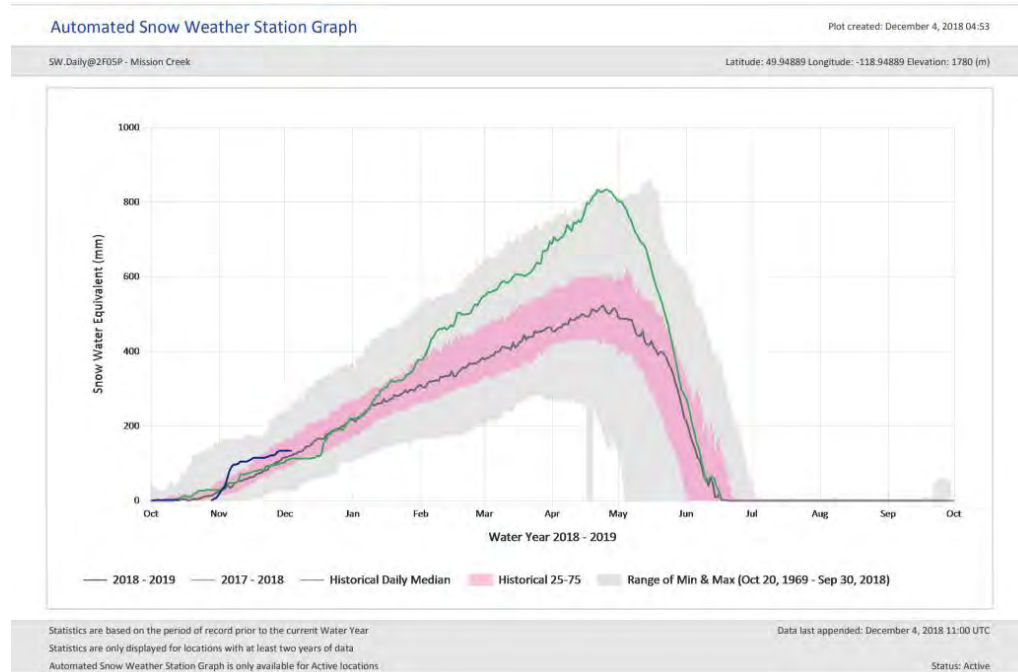
More details on these studies are given in the Water Stewardship Director report.

Weather Report

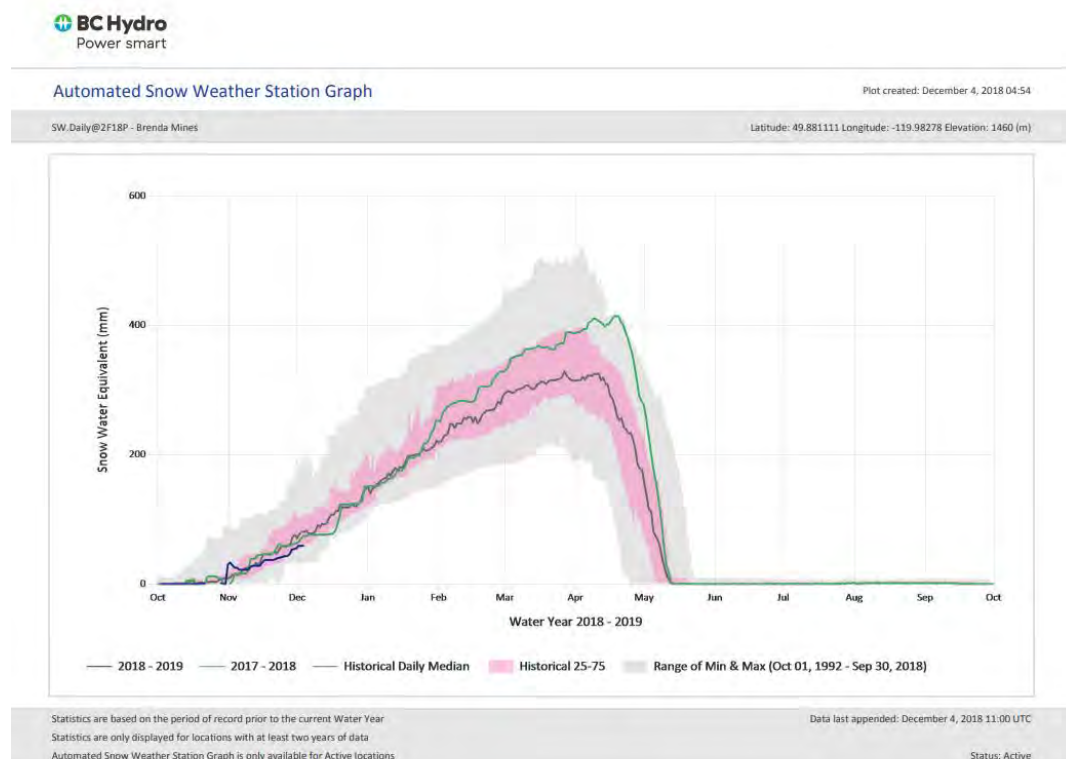
Each OBWB meeting I give the board a brief overview of the latest water forecasts from the B.C. River Forecast Centre, Environment and Climate Change Canada, and other agencies. These reports are

publicly available, and help forecast whether the Okanagan will experience droughts, floods, or other water challenges in the months ahead.

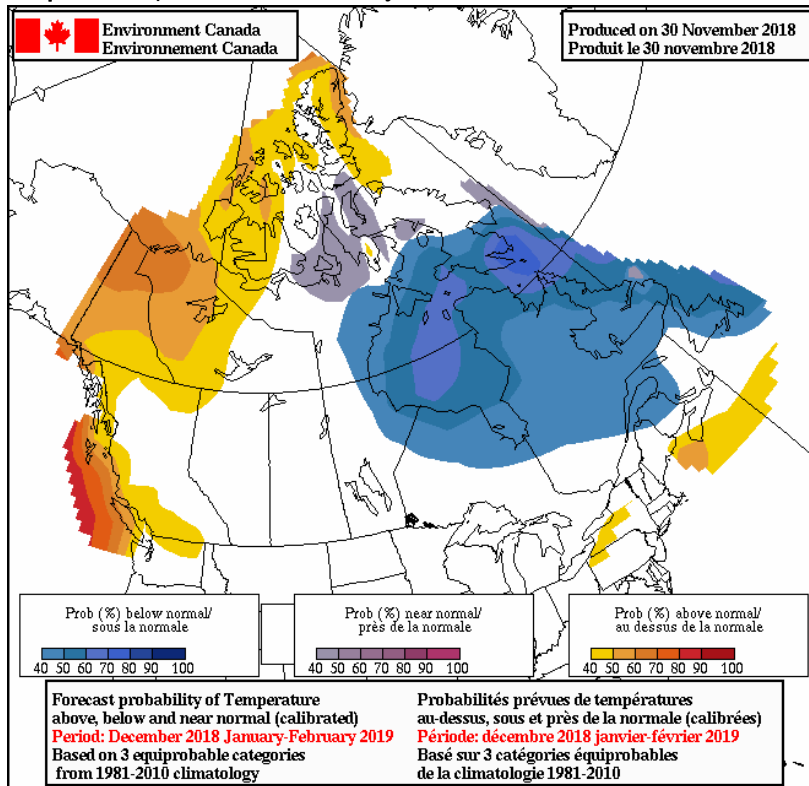
Mission Creek Snow Pillow – December 4, 2018 (Elevation 1794m)



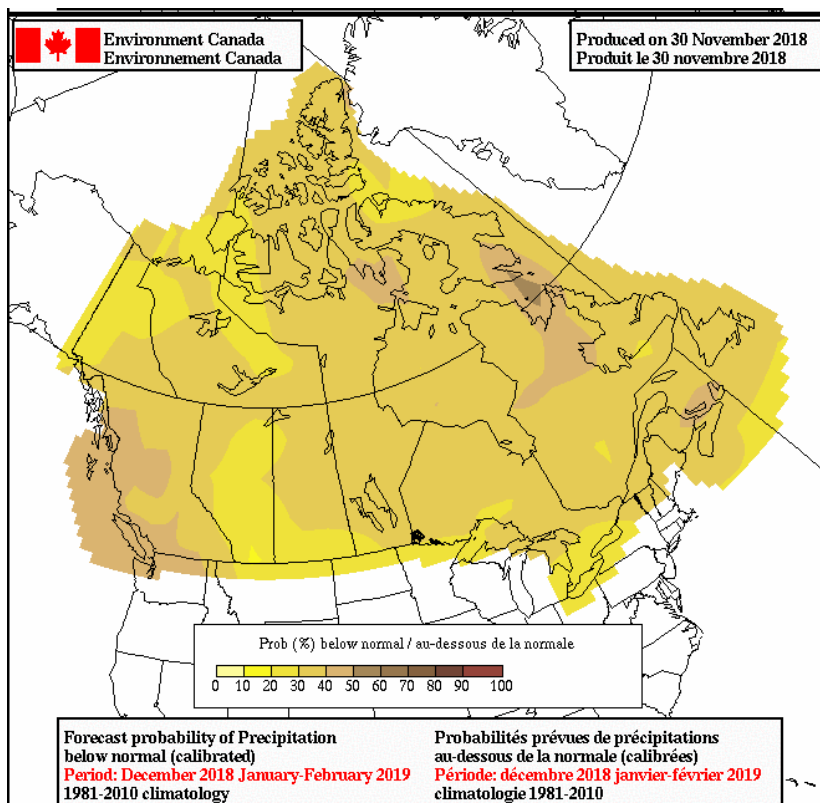
Brenda Mines Snow Pillow – December 4, 2018 (Elevation 1,453 m)



Map 1. Temperature Probability



Map 2. Precipitation Probability



Board Meeting Schedule for 2019

Month	Date	Location	Notes
January	Tuesday, Jan 1	Cancelled	New Year's STAT
February	Tuesday, Feb 5	Regional District Central Okanagan, Kelowna	
March	Tuesday, March 5	Regional District of Okanagan Similkameen, Penticton	
April	Tuesday, April 2	Regional District North Okanagan, Coldstream	WCQI grant approvals
May	Tuesday, May 7	Regional District Central Okanagan, Kelowna	Joint OBWB/Stewardship Council meeting and Strategic Planning Session
June	Tuesday, June 4	Regional District of Okanagan Similkameen, Penticton	Adopt audited financial statements
July	Tuesday, July 2	Cancelled	Day after Canada Day STAT
August	Tuesday, August 6	Cancelled	Day after BC Day STAT
September	<u>Friday</u> , September 6	Regional District Central Okanagan, Kelowna	Annual Public Meeting/OBWB regular meeting
October	Tuesday, October 1	Regional District North Okanagan, Coldstream	
November	Tuesday, November 5	Regional District Central Okanagan, Kelowna	Present draft 2020-21 OBWB budget (can adopt)
December	Tuesday, December 3	Regional District Central Okanagan, Kelowna	2020-21 OBWB budget must be adopted by this meeting

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
Dec. 12, 2018
Agenda No. 8.1.2

File No. 0550.04

To: Board of Directors
From: Anna L. Warwick Sears, Executive Director
Date: October 15, 2018
Subject: **Extended Authorization for Executive Approval of Mainstem Flood Mapping Contract**

Background

At the last OBWB meeting, October 2018, the board authorized me to approve the award of a contract (up to \$200,000) for hydrology modeling of the Okanagan mainstem lakes and river channel as part of the overall LiDAR/flood mapping project. The funds come from the National Disaster Mitigation Program, Emergency Management BC, and UBCM, flowing through from the RDCO, RDOS, and RDNO. The project has no budget implications for the OBWB.

The grant funding related to this project comes with strict timelines for expenditures. Last week, I discussed the project with EMBC staff, regional district staff, and our external advisory committee (Rod MacLean (City of Kelowna), Shaun Reimer (FLNRORD), and Brian Symonds (FLNRORD-retired)).

To meet the timelines, simplify the project and increase efficiency, our advisors have recommended that (rather than the hydrology modeling RFP/contract above), we issue two RFPs:

1. An RFP, leading to a contract for a bathymetry survey of the Okanagan River channel from dike to dike, showing the depth of the channel and comparing it to the 1980 cross sections. This contract would be for up to \$150,000;
2. An RFP, leading to a contract for the full flood mapping of the Okanagan mainstem lake system. This project would include the hydrology (inflows from snow and rain, climate change), the hydraulics (operations of dams and control structures), and incorporate both the LiDAR information and the bathymetry survey. This contract would be for up to \$500,000.

As the project has become more complex, the timelines have also been shifted slightly to the end of November, but we would still like to aim to be under contract before the beginning of December, before the board is reconstituted.

It will require special board authorization for me to approve and sign the contracts. Under our purchasing policy, all contracts over \$25,000 must be approved by the Board of Directors.

Process

The following timeline provides an overview of the process:

- RFPs will be issued on October 26, 2018
- Submissions to be received by the closing deadline of November 19, 2018

- A committee of external experts reviews and ranks all submissions, recommending successful bidders.
- Notice of awards date (estimated) November 23rd.

The final contract awards will also depend on establishing a written funding agreement with each of the regional districts, who originally received the grants to do the projects.

Recommended motion: THAT OBWB *authorizes the executive director to approve the award of contract(s), consistent with all OBWB procurement policies:*

- 1: Up to \$100,000 for a bathymetry survey of the Okanagan river channel;*
- 2. Up to \$500,000 for flood mapping of the Okanagan Mainstem Lake and river channel pooling and coordinating the work of the three Okanagan regional districts.*

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 8.2

File No. 0550.04

To: Board of Directors
From: Nelson R. Jatel
Date: December 4, 2018
Subject: **Water Stewardship Director's Report**

Water Stewardship Council



Mandate and Vision

The Council's vision is that the Okanagan will have clean and healthy water in sufficient abundance to support its natural ecosystems, agricultural lands and high quality of life in perpetuity.

The Council was established by the Okanagan Basin Water Board as an advisory body and communication channel to water stakeholder communities throughout the Okanagan. The Council provides independent advice supporting sustainable water management in the Okanagan, using its collective expertise to identify basin-wide water issues and develop workable solutions that reflect the best available science, innovative policy, and consensus approaches. The Council recommends only those actions that can be undertaken within the bounds of the OBWB mandate. In addition to its role as an advisory council, the Council will develop programs that contribute to the local knowledge base and provide stewardship tools for the watershed community, as well as providing ad hoc technical advice on Board projects.

Council's mission is to be a trusted source of expertise and knowledge for sustainable water management in the Okanagan, providing balanced and considered advice to the Okanagan Basin Water Board – and through them to the community at large. The Council will draw upon its member's diverse range of knowledge and experience to develop the recommendations and implement the actions needed to achieve the Vision.

Additional information about the Council, 18 month work plan and committees are available here: <https://www.obwb.ca/about-the-council/>.

November Meeting Highlights

Zoe Kirk and Paul Edmonds (RDOS) and Dawn Russell (PIB) presented on 'Spring freshet and fire overview,' looking at the effects of the 2018 spring/summer freshet and fires, emergency operations by local government, and lessons learned.

Copies of Council presentations are available online:

- <http://www.obwb.ca/about-the-council/presentations-videos/>

December Meeting

The next regularly scheduled Council meeting will be Dec. 13 at the Coast Capri Hotel from 12:30 p.m. to 4:30 p.m. All Board members are encouraged to attend. Following our December Council meeting will be the annual Council holiday celebration – all Board members are invited.

Project Management

The Water Stewardship Director's office supports two principal activities: the organizational support of the Water Stewardship Council and Senior Project Management. Select highlights and project activity from the month of September include:

Environmental Flow Needs Conference





On Oct. 17-18, the OBWB in partnership with the Canadian Water Resource Association (CWRA) hosted the *siwlkʷ* (WATER) FOR ALL... OUR RESPONSIBILITY - Environmental Flow Needs Conference in Kelowna. This conference was co-chaired by **Nelson Jatel** and **Brian Guy** (CWRA) and provided an opportunity to celebrate the unique OBWB/Okanagan Nation Alliance (ONA) collaborative partnership spanning three years of intensive in-field stream flow sampling to develop relevant EFN calculations (Modified Tennant and Weighted Usable Width) to the semi-arid Okanagan. Over 250 people attended the event.

The conference hosted an exceptional line-up of speakers including: **Claudine Pahl-Wostl** (renowned Water Governance Scholar- Germany), **Karilyn Alex** (Senior Fishery Biologist - ONA), **Ted White** (Water Comptroller - BC), Robert Sandford (UN EPCOR Chair, Water Security), and **David Tichner** (Water Scholar - England).

One unique feature of this conference was the talented team of facilitators including **Kelly Terbasket** and **Aaron Derickson**, both members of the Okanagan Nation. They brought their experience and facilitating skills, applying a Syilx Tradition and Dialogue Process approach which included the traditional Four Food Chief story. More information about the Four Food Chief process can be found here: <https://www.syilx.org/wordpress/wp-content/uploads/2010/11/Okanagan-Syilx-Nation-Health-Plan-2010.pdf>

The conference program is available online at: www.EFN2108.ca and we are finalizing the event legacy document – scheduled for completion in mid-January.

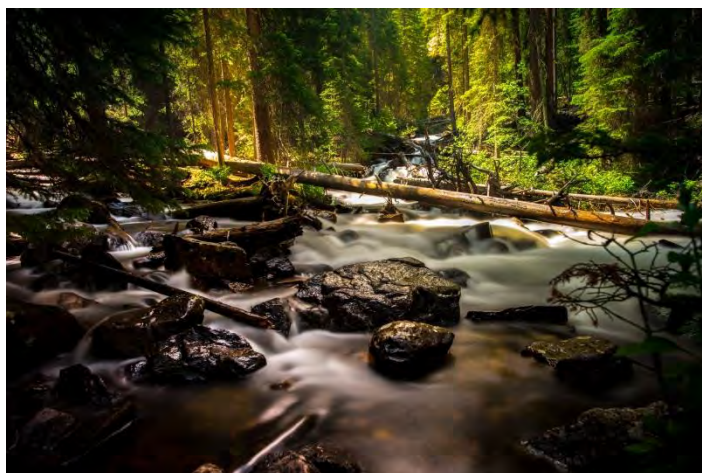
Okanagan Environmental Flow Needs Project (2 year project)

This two-year study looks at the Environmental Flow Needs (EFNs) – or the water needs of fish and aquatic ecosystems – in the Okanagan. The phase of the project includes 18 stream-by-stream studies, using flow monitoring equipment in streams identified as important for fish habitat throughout the valley.

The Okanagan Environmental Flow Needs project is primarily funded with a gas tax grant and is being delivered as a collaborative multi-agency project involving:

- OBWB (lead)
- ONA – Fishery Department
- B.C. Ministry of Forest Lands, Natural Resource Operations and Rural Development

As part of developing strategic pilot Environmental Flow models for Okanagan streams, calculating sub-basin naturalized flows is an important component of our activities.



The project deliverables will follow the previously developed methods document titled: *Recommended methods for the development of streamflow datasets to support the application of the Okanagan Tennant method in Okanagan streams* (Associated Environmental for the Okanagan Basin Water Board, 2017)

Project deliverables: The activities involved in developing streamflow datasets for Okanagan pilot streams include:

- (1) Water demand and management information collection
- (2) Development of scaling relationships
- (3) Streamflow dataset development – stream specific
 - a. Identification of naturalized long-term mean discharge (LTD Mad)
 - b. Creation of three annual hydrographs (naturalized, residual, and maximum licensed)
 - c. Calculation of percentile streamflows for each hydrograph

Okanagan Hydrology Model (19 sub-basins)

This important project will develop a suite of sub-basin hydrological models for Okanagan tributaries (16-19) that enter mainstream Okanagan lakes. The models will link surface and groundwater flow models (where groundwater data is available) with Okanagan water demands – to enable water balances to be determined at multiple points along each tributary (see Figure 1). This Okanagan Hydrology modeling project is made possible with funding provided by the Federal/Provincial Gas Tax Program Services initiative.

The Okanagan Hydrology modelling project is intended to build on the significant 2010 Water Supply and Demand study developed for the Okanagan basin. The original modelling project, one of the first of its kind in Canada, provided an important whole basin hydrology perspective.

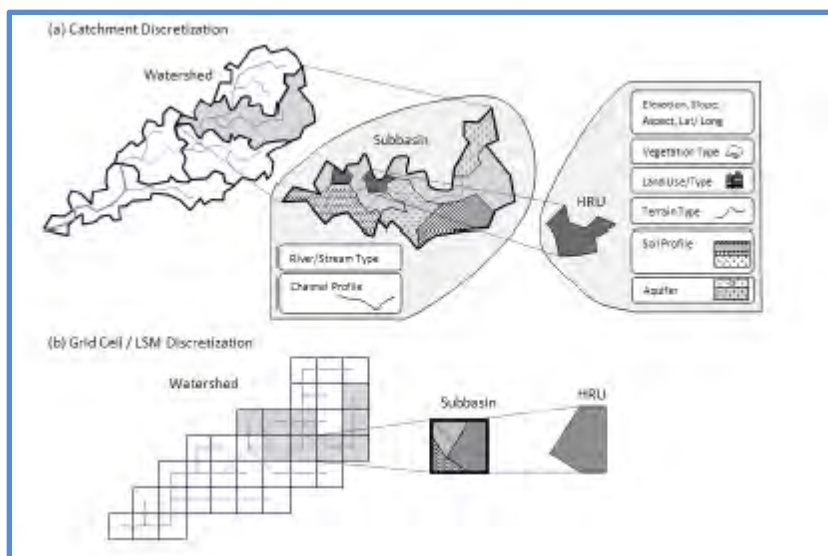


Figure. 1. Example of sub-basin hydrology model.

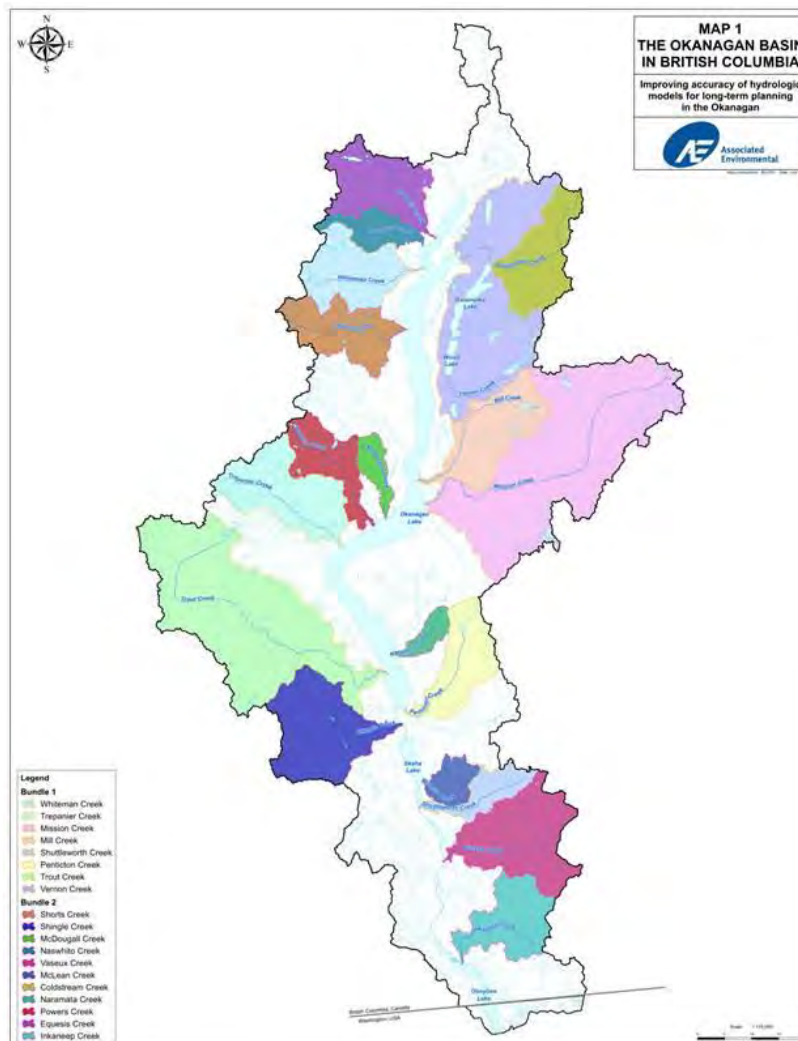
This new hydrology study provides a more detailed look at sub-basins in the Okanagan. With enhanced hydrology modeling resolution at the sub-basin level, the new models will provide local governments improved data for use in their 2-D hydraulic models (i.e. sewer systems, storm systems) applied in day-to-day operational decisions.

Improving water management in the tributary streams, which support aquatic, riparian, and wetland habitats and the needs of fish and other aquatic life is an important outcome from this project, which will also support local government infrastructure planning.

The hydrology models will be developed in two waves (or bundles) of development so that we can learn from our first efforts and help inform the second set of modelling efforts.

<u>Selected Streams (Bundle 1)</u>	<u>Selected Streams (Bundle 2)</u>
Whiteman Creek	Coldstream Creek
Mission Creek	Equesis Creek
Mill Creek	Inkaneep Creek
Shuttleworth Creek	McDougall Creek
Penticton Creek	McLean Creek
Trout Creek	Naramata Creek
Vernon Creek	Naswhito Creek
Trepanier Creek	Powers Creek
	Shingle Creek
	Shorts Creek
	Vaseux Creek

One important component of developing sub-basin hydrology models is developing naturalized flows for each sub-basin. Naturalized flows refer to a streamflow when human influences have been removed, including effects of upstream water withdrawals and discharges, reservoir regulation, and water control using hydraulic structures (e.g. pumps, gates, valves). The naturalized flows are important for a variety of water management planning tools.



Okanagan Flood Plain Mapping Project

Background

Local governments and Okanagan Nations desire flood maps to better inform and protect their communities and get in a better position for flood risk planning and flood mitigation actions. The floods of 2017 approached the very limits of current flood construction levels (especially in storm conditions) and some properties were not sufficiently protected. The flood of 2018 again caused flooding in southern Okanagan communities, near the Okanagan River and Osoyoos Lake.

Many hydrological and hydraulic modeling efforts have taken place in the Okanagan. The work done on this contract will build on previous efforts, including OBWB hydrologic models, the Fish/Water Management Tool, the management protocols for the dams on Kalamalka/Wood, Okanagan, Skaha, Vaseux and Osoyoos lakes, and the latest inflow forecast models from the B.C. River Forecast Centre. The model parameters must provide for scenarios involving climate change, historical records for Okanagan, Kalamalka/Wood, Skaha and Osoyoos lakes levels, and downstream flow records.

Overall Project Goals

The goal of this project is to develop multi-purpose flood modeling, maps and digital mapping layers to better understand flood hazards and to further investigate flood risks and flood management options for the Okanagan mainstem lakes and river system. The models will estimate the extent, depth and (where meaningful) the velocity of potential flooding under a variety of scenarios, and convey this information through mapping layers. The modeling will consider wave height and wave damage during storm events at high water; illustrate areas of ponding caused by inadequate drainage not directly related to lake or river channel over-bank flooding; and areas susceptible to flooding through failure of flood protection or road infrastructure. The project will not consider potential failure of dikes or dams. It is also not expected for the project to identify all the populations, buildings, infrastructure, environmental and cultural assets that could be damaged or destroyed.

The following mainstem lakes will be included in the project: Ellison, Wood, Kalamalka, Okanagan, Skaha, Vaseux, Osoyoos Lakes; and Okanagan River from Okanagan Lake to Osoyoos Lake, including areas affected by overbank flooding that occurred in 2017. This is a regulated system, experiencing significant within-year variation in inflows and discharges. The period of interest is the freshet season, extending from February – July.

Okanagan River Bathymetry Project

The purpose of the surveying of the Okanagan River is to provide data to use for hydraulic river modelling that can determine water surface elevations on the river banks for a given flow. As well, it will update previous survey data (river cross sections and profiles; dike cross sections and profiles) from 1980 and (where applicable), 1998. Surveying will take place between Okanagan Lake and Osoyoos Lake.

The surveys will take place at 274 locations previously surveyed in 1980.

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 8.3

File No. 0550.04

To: OBWB Directors
From: James Littlely
Date: December 4, 2018
Subject: **Operations and Grants Manager Report**

Milfoil Control Program Update

The OBWB Milfoil Control Program treats the invasive Eurasian water milfoil through the summer in July and August, and through the winter from October to April in five major lakes in the valley (Okanagan, Wood, Kalamalka, Skaha and Osoyoos). During summer months, the weed is cut to a depth of about 2 meters below the surface and the plant material is then transported to land and transferred to a truck for delivery to local land owners and community gardens for compost. During the winter months, the plant is dormant and a large rototilling machine de-roots the plant from the lake bottom, allowing the roots to float to the surface and die. De-rooting the plant is an effective means to control the growth and density of milfoil in a given area while harvesting the plant is purely aesthetic.

So far this rototilling season, we have seen a number of issues as we deal with renewing our five-year environmental permits and 'breaking in' a new rototilling machine. On December 5th, I will meet with the provincial habitat officer to clarify several issues about areas that may be restricted for treatment due to concerns about endangered Rocky Mountain Ridged Mussels. I will provide a verbal update to the board and a broader introductory presentation of the milfoil program at the regular meeting.

Water Conservation and Quality Improvement Grants 2019-20 Call for Applications

The WCQI grant program provides between \$3,000 and \$30,000 in seed funding to projects by local governments, improvement districts and non-profits for projects in the Okanagan basin which conserve water or improve water quality. The fund provides up to \$300,000 per year and has been running since 2006. This year, the call for applications went out in late November, with the application deadline set for Friday, Feb. 28 at 4 p.m. As part of the approval process for these grants, the board is asked to approve an annual theme for 2019, review the process and scoring criteria, and make a resolution of approval, as laid out below.

Changes to the Program for 2019

This year there are two significant changes to the WCQI program, approved by the previous board. First, funding will be awarded on a valley-wide basis, rather than distributed by regional district as it has been in the past. Second, local governments have the flexibility to provide a letter of support, rather than a more formal resolution of support, which has also been a requirement in the past. These changes have been explained in detail in the program guide, and the OBWB grant website has also been updated to draw attention to the changes. A letter explaining the changes and the new requirements for providing a letter of support will be sent to all Okanagan local governments following the board's review of the grant process for this year.

Process

The process for awarding grants was adopted by the Board during the December 2013 meeting and is as follows:

1. Board approves scoring criteria and annual theme;
2. Applicants receive support from local government based on that government's water-related objectives, community values and other normal considerations;
3. Staff review the applications independently based on Board-approved scoring criteria;
4. Staff meet to determine recommendations based on individual assessments; and
5. Recommendations are forwarded to the Board for approval. Board discussion and voting on grant awards should occur as any other regular business, with input from all Directors. Board may award, not award, or alter funding within project and program limitations.

Scoring Criteria

The basic, weighted criteria of the grant program are included in the program guide for all applicants:

20	Basin-wide benefit
20	Complements current OBWB initiatives
15	Focus on action
15	Promotion of best practices
10	Collaboration
10	Innovativeness of project
10	Quality of proposal
100	

Annual Theme

Each year, as part of the approved scoring criteria, the Board approves an annual theme or themes, for staff to prioritize during the application review process. This allows the Board to pre-determine which type of projects should receive bonus points, while also meeting the regular criteria of the grant program. In the past, the board has chosen five or six types of projects from among 15 project categories, to receive extra points. This year, staff is recommending the broader theme of 'climate change adaptation' which could include multiple categories such as drought and flood preparedness, irrigation, source protection and others. By approving a broader theme, extra points could be awarded in any category to projects which show how they will directly address climate change adaptation.

Recommendation: *THAT for the 2019-20 WCQI grant competition annual theme, the OBWB seeks projects in any category that are intended to address climate change adaptation related to water conservation or water quality improvement, AND THAT applications in these categories are prioritized for funding during staff review with the awarding of up to 10 extra points toward the total score; and*

THAT the process and scoring criteria for the grant competition be approved as outlined.

The 15 grant categories are:

Drought Planning	Mapping	Water Flow Monitoring
Education	Metering	Water Management Plan
Groundwater	Restoration	Water Quality Project
Indoor Conservation	Source Protection	Water Treatment Study
Irrigation	System Improvement	Xeriscape

Eligible projects outside of these categories will also be considered.

Sewerage Facilities Assistance Grants

SFA Grants are one of the longest-running core programs of the OBWB. Since 1970, the program has paid more than \$65 mill. to Okanagan local governments to install tertiary sewage treatment plants and provide sewerage to neighbourhoods. This program has seen significant changes since its inception in the early 1970's with changes to funding formulas, eligibility, and reporting requirements. The installation of tertiary treatment systems in the valley has led to dramatic changes in lake water quality through reduced nutrient loading. However, land-use practices in the early decades of the program meant that while older, often failing, septic systems were being replaced with community sewers, newer neighbourhoods were still being created using older septic technologies.

In order to avoid funding the same land-use practices that led to poor water quality in the first place, in 2007 the OBWB instated a policy that follows provincial infrastructure grant policy where local governments must have bylaws and policies in place to prevent the development of new small-lot subdivisions (less than one hectare) if the new lots were not connected to community sewer. In 2013, the one-hectare policy was emended to also capture the development of accessory dwellings (carriage houses) on properties less than 1.0 hectare that are not connected to community sewer. Without these policies, local governments would not be eligible for SFA grants. The policy exempts home-site severance lots on ALR land, and also provides a means to waive the one-hectare policy through the preparation of a provincially-approved Liquid Waste Management Plan (LWMP).

While the one-hectare policy has been in place for over 10 years, with more than \$20 mill. being granted during that time, there has never been an audit to review compliance with the policy and eligibility for the program. In the next few years, we expect to see an increased uptake in the SFA program, as major new sewer projects are built throughout the valley. We are also experiencing increased development pressure, including pressure to waive the one-hectare policy without following the LWMP process. Finally, the SFA program only funds sewerage to lots that were created prior to 1978, before the use of Development Cost Charges to pay for future infrastructure. This means that the program will sunset once all existing pre-1978 lots have been serviced with community sewer. However, there is no current estimate of how many of these pre-1978 areas remain.

At the February OBWB meeting, I will make a recommendation to the board for a process to review the SFA Grants program including:

- an audit of existing grant eligibility;
- an assessment of remaining eligible pre-1978 areas; and
- consultation with local governments regarding the service provided by the program

The aim of the review will be to make recommendations for changes and improvements to the program.

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 8.4

File No. 0550.04

To: OBWB Directors
From: Corinne Jackson
Date: December 4, 2018
Subject: Communications Director Report

As the OBWB's Communications Director, I am responsible for developing and delivering various strategies to ensure the proper flow of information within the organization, as well as out to our local and senior government and NGO partners, and to the public at large. These efforts include *internal communications* such as board minutes and agendas, communications support to fellow staff and their projects, and *external communications*, such as our monthly Board Report, news releases, news conferences, public relations and media relations.

As Communications Director, I also manage the OBWB's Okanagan WaterWise (OkWaterWise.ca) outreach and education program. This includes, among other things, development of outreach materials, public events, social media engagement, and management of two campaigns: Make Water Work (MWW) and Don't Move A Mussel (DMM). (More information on both of these is provided below.)

Since October, a number of **news releases** have been sent out, including on Nov. 29 for the [Water Conservation & Quality Improvement Grant](#) program, another on Nov. 21 regarding a [letter to the Province of B.C.](#) calling for legislation to better protect B.C. waters from invasive mussels, on Oct. 18 with a wrap-up from the [siwtk^w \(WATER\) For All - Environmental Flow Needs Conference](#), and on Oct. 12 regarding the end of our [Make Water Work](#), outdoor water conservation campaign and contest. All of these included follow-up with media. Some of the coverage received is noted below.

In addition to providing communication support and moderating a media panel at the recent **siwtk^w - EFN conference**, I have posted information and photos from the event on our Facebook page at: https://www.facebook.com/pg/OkWaterWise/photos/?tab=album&album_id=2151389291558583. We also have videos posted at <https://www.facebook.com/OkWaterWise/videos/294010304767528/>.

In November, we printed a **"Climate Change & Water In the Okanagan"** infographic. Information is now posted on our Okanagan WaterWise website at <https://okwaterwise.ca/waterwise-for-educators.html> and we will be connecting with teachers and eco-educators in the valley regarding the resource. It will be an excellent addition to a much larger locally-developed water curriculum we have been working on with the Okanagan Collaborative Conservation Program for Okanagan schools.



The OBWB-OkWaterWise co-hosted a Nov. 21 **community water forum**, “Fire and Flood: Climate Change & Extreme Weather in the Okanagan,” with UBC Okanagan’s Office of the Vice-Principal Research. As such, we provided communications support to the event and attended with an outreach table.



As noted above, **MWW** (MakeWaterWork.ca) is an outdoor water conservation campaign. Its aim is to curb the 2nd largest use of water in the Okanagan, residential use. The campaign is developed and delivered in partnership with local governments and utilities throughout the valley. We hired a new company this year, Hiilite, to help us with some of the marketing (e.g. Facebook ads and videos, website updates, bus and bus shelters ads, bookmarks, and fun but functional Frisbees, and more). The campaign runs from mid-May to mid-October when people are gardening and have their irrigation on. We are still compiling final reports but participation rates saw a 33% increase from 2017.

DMM (DontMoveAMussel.ca) is our campaign, aimed at raising awareness about invasive zebra and quagga mussels, the risks to the Okanagan and how to prevent an infestation. We leverage the MWW and DMM campaigns together to get the best advertising value. Like MWW, DMM runs mid-May to mid-October, when people are most likely to be taking recreation equipment into our waters. Like MWW, the campaign included FB and radio ads, and website updates. We also had billboards, and did a lot of community outreach ourselves, but also with several partners, talking with people and handing out floating DMM key chains, “mussel” shirts, and more. A final report will be provided at the next board meeting.

In addition to compiling final reports, I have been researching and coordinating an effort to hold focus groups to look at the two campaigns. We have been delivering MWW since 2011 and it has grown and expanded

through the years. We conducted a focus group in 2012, but haven't had one since. We launched DMM in Spring 2013 and, although we conducted a phone survey in Fall 2014 after two years of the campaign, we have never done a focus group.

The purpose would be to take a deep dive into both campaigns, the messaging, the print, audio and video collateral and make sure the messages and behaviours we want to promote are working, and tweak where needed. We are looking to hold the focus groups in January, in time to have results for a winter/spring build-out and May launch.

Some good news! The OBWB-OkWaterWise's documentary **"A River Film"** has received another award. The 38-minute film, which puts a spotlight on Okanagan River and Osoyoos Lake and how competing needs for water in this complex transboundary watershed are balanced, has won the Platinum Award for Documentary Feature at the Oregon International Film Awards. The film was created in partnership between the OBWB-OkWW, the International Joint Commission and Washington Department of Ecology, and produced by Kelowna-based Ascent Films Inc.

In April, the film was presented with an Award of Excellence in Cinematography and Narration by the Docs Without Borders Film Festival. And in February, the film received an Award of Excellence at the Impact DOCS Awards Competition.

A River Film has been distributed to Okanagan libraries, museums, school districts, as well as Okanagan College and UBC Okanagan and Vancouver campuses. Find the trailer here: <https://vimeo.com/235960865>.

Other communication initiatives

In addition to the above, we provide communications support as we are able to various partners on water-related items. In the last couple of months this has included:

- support to UBCO's Biodiversity, Resilience, and Ecosystems Services (BRAES) Institute and Institute for Community Engaged Research (ICER) Dec. 3 event "Eating the Okanagan - Exploring Change in our Local Food Systems,"
- promotion of the "Social Life of Water" exhibit at the EECO Centre, and
- proofing "Building Climate Resilience in the Okanagan," a homeowners resource guide put out by the South Okanagan Real Estate Board and several of our partners.

Summary of Recent OBWB-Related Media

Oct. 2	"North Okanagan wastewater working group seeks volunteers," <i>Vernon Morning Star</i>
Oct. 4	"Peachland votes 2018: Learn more about mayoral candidate Cindy Fortin," <i>Kelowna Capital News</i>
Oct. 5	"Neighbours approve of development on old Oyama campground," <i>Kelowna Capital News</i>
Oct. 15	"Okanagan flood-mapping project crashes to earth," <i>Kelowna Daily Courier</i>
Oct. 16	"Experts gather to discuss Okanagan water needs," <i>Kelowna Capital News, Penticton Western News, Summerland Review, Vernon Morning Star, Salmon Arm Observer</i>
Oct. 17	<u>"Kelowna conference focuses on flows for fish,"</u> <i>Global Okanagan</i>
Oct. 17	"Water Board recognizes water conservation winners," <i>Castanet</i>
Oct. 17	"Okanagan conference looks at water for fish," <i>AM1150</i>
Oct. 18	<u>"Airplane crash delays Okanagan Valley aerial mapping."</u> <i>Kelowna Capital News, Vernon Morning Star, Salmon Arm Observer, Keremeos Review</i>
Oct. 18	"Okanagan water conference builds connections," <i>Kelowna Capital News, Vernon Morning Star, Salmon Arm Observer, Keremeos Review</i>
Oct. 18	"Weather and wildfires interfere with water board's floodplain mapping," <i>InfoNews.ca</i>
Oct. 21	"Winners announced in water conservation contest," <i>Kelowna Daily Courier</i>
Oct. 22	"Aerial images lost in crash," <i>Castanet</i>
Oct. 22	"Water conference brings natives, non-natives together," <i>Kelowna Daily Courier</i>
Oct. 24	"Environmental Flow Needs Conference," <i>Water Canada</i>

Nov. 1 ["Okanagan residents win prizes for water conservation," Okanagan Life Magazine](#)

Nov. 8 "Forum on floods, fires," *Castanet*

Nov. 21 "More mussel checks sought by board," *Kelowna Daily Courier*

Nov. 21 "Okanagan Basin Water Board Pens Letter to Heyman on Invasive Mussels," *Water Canada*

Nov. 21 "Okanagan Water Board calls for BC Legislation to protect waters from invasive mussels," *Kelowna Now*

Nov. 21 ["Protect our precious waters from invasive mussels - Okanagan Water Board to province," Global Okanagan](#)

Nov. 21 "Water board pushing for enhanced invasive mussel-fighting legislation," *InfoNews.ca*

Nov. 21 "Update legislation to protect our waters - Okanagan Water Board to province," AM1150

Nov. 22 "Okanagan Water Board calls on Province to step up mussel response," *CBC News*

Nov. 22 "Okanagan water board wants more invasive mussels protection," *Penticton Western News, Kelowna Capital News, Vernon Morning Star, Salmon Arm Observer*

Nov. 23 "Future instability - fire, floods," *Castanet*

Nov. 23 "Collaborating with First Nations in BC to combat climate change," *Vernon Morning Star, Kelowna Capital News*

Nov. 23 "North Okanagan wastewater recovery group formed," *Vernon Morning Star*

Nov. 28 "It takes dozens of people to keep your regional district running – with more on the way," *InfoNews.ca*

Dec. 2 "Valley-wide projects wanted," *Castanet*

Dec. 4 "OBWB calls on province to close loophole that could allow spread of invasive mussels," *Osoyoos Times*

Recent Presentations

Oct. 17 "Communicating Environmental Flow Needs – Media Panel," moderator at *siwłk^w (WATER) FOR ALL* - EFN Conference – Corinne Jackson

Nov. 21 "Fire and Flood – Climate Change and Extreme Weather in the Okanagan," MC at UBCO-OBWB-OkWaterWise Community Water Forum – Anna Warwick Sears

Nov. 26 "OBWB and its role in Okanagan collaborative water management," to Okanagan Lake Management Plan meeting – Kellie Garcia

Dec. 3 "Okanagan Water Policy," to Eating the Okanagan Food System Sustainability Forum – Anna Warwick Sears

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 8.5

File No. 0550.04

To: OBWB Directors
From: Kellie Garcia
Date: December 3, 2018
Subject: Policy and Planning Specialist Report

As the policy and planning specialist at the OBWB, my job is to connect water science and information to on-the-ground practitioners. I bring people together to share knowledge and experiences, identify and promote best practices, and look at ways to improve and coordinate water planning across the valley. I am currently working on the following projects and initiatives.

1. Drought planning and response

One of my main roles at the OBWB is to help the Okanagan better prepare for water-short years by getting everyone up to the same level of drought planning, building relationships, and improving access to information and resources. I'm working on several initiatives to achieve these goals.

Mainstem Lakes Drought Stage Triggers Project

This project brought together technical experts, water utilities, provincial water managers, and Okanagan Nation Alliance (ONA) fisheries staff to develop drought stage trigger guidelines for the valley bottom lakes and rivers. The triggers can be incorporated into local drought plans to support a rational and coordinated process for moving between water restriction stages, similar to the reservoir management plans in place for purveyors with upland storage. The final report, which was released in September, also provides guidance on how to operationalize the drought stage triggers, recommended responses for each stage, an example drought communications plan, and guidelines for communicating about the drought stage triggers to elected officials and the public. The next step is for me to help the water utilities integrate the triggers into their current plans and policies.

Agricultural Water Supply Communications Project

We are just embarking on Phase 2 of this project, which will take place over the next three years. The project provides water utilities with customized materials and mechanisms to communicate water supply information to their agricultural customers. Last year, we worked with Greater Vernon Water and the City of Penticton to pilot a mass notification system (i.e. text message, email, voice message) centrally hosted by the OBWB, sending messages about local water restriction stages and water supply status, tips for water conservation, and broader information about drought, weather forecasts and more. This second phase will enable much broader water utility and producer participation with the aim

to establish a consistent and reliable Okanagan-wide communication system. Funding for this project is provided through the BC Agriculture and Food Climate Action Initiative.

Drought response coordination

The OBWB participates in several drought response initiatives. I am responsible for carrying out our Okanagan Drought Response Strategy, which is triggered if the Province moves the Okanagan to a drought Level 2 or higher. The goals of the strategy are to facilitate timely communication with local water utilities and the Province and to bring a more consistent and cooperative valley-wide response to drought. I also participate on the Province's regional drought response team. We meet by phone every two weeks in the summer to receive updates from provincial staff on streamflows and aquifer levels and the response measures underway or needed, and to provide Okanagan-specific information to the Province. Lastly, the OBWB prepares *Okanagan Drought Bulletins* as needed to notify water purveyors, elected officials, and others about the provincial drought level, clarify water conservation expectations, and provide information about the local water supply situation.

Local government drought planning support

I am the go-to person at the OBWB for questions related to local government drought planning. To facilitate more consistent and robust approaches, I created templates for drought management plans (based on the provincial template and input from water suppliers), and I work closely with water suppliers and their consultants when they are putting the drought plans together.

On another note, we are trying to get more alignment on watering restriction stages and language throughout the valley to reduce confusion and allow for improved communication during drought, so I am always looking for opportunities to move this forward. The perfect opportunity for utilities to change their watering restrictions is when they are writing new or updating existing drought plans.

2. Sustainable Water Strategy project

I am working with the Water Stewardship Council to modernize their Sustainable Water Strategy (SWS), which was originally released in 2008. The new strategy will help the council and board re-hone priorities and plan new initiatives. Among other updates, the modernized strategy incorporates insights into changes in water legislation and regulations, and better addresses issues such as our capacity to adapt to climate change. It brings together technical information about the valley, showcases current projects and case studies, and recommends actions designed to protect water at its source, share water in times of shortages, manage water demand, and collect and distribute data and information. I will be doing a presentation on the SWS at our February board meeting. The plan is for the Council to adopt the strategy in March and for the Board to receive it in April.

3. Water and climate-friendly bylaws initiative

Many planning toolkits and guides are available that provide innovative policies, case studies, bylaw language, and legal approaches to help communities adapt to climate change, support water conservation, and practice sustainable development. Much effort and public funding has gone into developing these resources but unfortunately uptake has been very slow.

Early this year, we completed a project to learn about barriers to uptake, gather ideas for solutions, and develop a strategy to optimize and support use of these guides. We brought about 100 planning-related resources together into a searchable hub, created partnerships between the groups who are preparing these resources, and began a dialogue in the planning community to encourage synergies, build capacity, and share best practices. This project is always percolating in the background as I keep my eyes open for new resources to add to the database and chances to promote it, and for opportunities to be part of capacity-building initiatives that provide direct support and training in the resources available and how to apply them.

4. Okanagan lakes protection initiative

This project was kicked off at a workshop last week and is being led by the Okanagan Collaborative Conservation Program and the South Okanagan Similkameen Conservation Program, with participation from Okanagan regional districts and municipalities, Westbank First Nation, and the Province. ONA has also delegated a staff person to provide technical input to the project. The goal of the project is to identify policies, regulations, and processes and work more collaboratively to improve shoreline protection of the valley lakes. I am helping to prepare the terms of reference for the project and will be actively involved as things moves forward.

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 9.1

File No. 0550.04

To: OBWB Directors
From: Anna Warwick Sears
Date: December 4, 2018
Subject: **Policy Letters to Government**

OBWB's "Objects and Purpose" – are the mandate given to us in our founding Supplementary Letters Patent (SLP). The full text of the SLP, along with the OBWB's current governance procedures are given in the [OBWB Governance Manual](#).

The following "Objects and Purpose" items II, III, and IV, date from when the OBWB was established in 1970, and speak to the OBWB's role of identifying problems in the valley and making recommendations to government:

- II. To define water problems and priorities, economic feasibility of solutions, responsibility, necessary legislation and required action;
- III. To communicate and coordinate between levels of government and their agencies about water use and management;
- IV. To present proposals and recommendations to local or senior governments, according to jurisdiction and responsibility;

With this mandate, the OBWB sends many letters to senior government on topics ranging from prevention of invasive mussels to groundwater policy (as seen in this agenda package). Typically, letters to government are written at the direction of the board and signed by the Chair.

At the October board meeting, there was a resolution to send a letter to the B.C. government, renewing our request for legislation to prevent zebra and quagga mussels from invading the Okanagan. During the board interregnum, this letter came from my desk.

In November, we then had an urgent request by members of the groundwater science community, as well as from the Okanagan Water Stewardship Council, to write letters to government requesting an extension of the groundwater licensing deadline. Responding to this request, I sent one letter under my signature to B.C.'s Minister of Environment and Climate Change Strategy, and Minister of Forests, Lands, Natural Resource Operations and Rural Development. I sent a more detailed, follow-up policy letter to the senior managers in their ministries.

All three of these letters are provided for your information, and I'm happy to answer any questions.

Hon. George Heyman
Minister of Environment and Climate Change
PO Box 9360 Stn Prov Govt
Victoria, BC V8W 9M2

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 9.1.1

November 20, 2018

Re: Legislative Changes to Prevent Invasive Mussels

Dear Minister Heyman,

Since 2015, the province of B.C. has taken significant and impactful action in its mussel prevention and education programs, improving each year - most recently with your announcement of annual funding for the prevention regime. On behalf of the OBWB, I thank you for taking this important step to protect our waters. On August 6, 2018, Canadian Prime Minister Justin Trudeau also announced new federal funding to help in the prevention of invasive zebra and quagga mussels into B.C. This announcement was partially informed by our ongoing calls to action for the federal government to provide assistance to western provinces in their efforts to keep invasive mussels out of the Pacific Northwest, including B.C. and the Okanagan.

While we commend the recent announcements, and recognize the improvement that will be made through stable funding for inspection stations, we are concerned that four years after the first roving inspections were conducted in B.C., there is still no legal requirement for out-of-province watercraft to be inspected prior to launching in provincial waters. The current legislation dictates that if a watercraft enters B.C. and if it encounters an open inspection station on route, it must stop for inspection. However, this leaves a gap for watercraft that enter outside of inspection station hours, outside of the inspection season, or through routes which are not monitored. We feel that the province's number one priority for mussel prevention should be addressing this legislative gap.

This legislative change was the first priority in our list of action items provided to your ministry on October 20, 2017, following our meetings at the 2017 UBCM conference. We feel that there is still sufficient time before the 2019 boating season for the province to pass this legislation, and ensure that inspections are available in centralized locations for boaters who do not report to a roadside station. Further, we recognize that this legislative change is more cost-effective than providing 24 hour inspection stations, which have been called for in the past. This change would also allow for spot-checking out-of-province watercraft for proof of an inspection at local boat launches, enhancing the enforcement of the law.

We call on the Province of B.C. to make these legislative changes immediately in preparation for the next boating season to keep our shared B.C. waters invasive mussel-free.

Over the next few months the OBWB will continue to work with provincial staff and other partners to support public messaging of the “Clean, Drain, Dry” protocol through our Don’t Move A Mussel campaign. You can also count on our continued support, through our calls to action, for increased and ongoing federal funding and other support to the western provinces’ mussel prevention efforts.

Sincerely,

A handwritten signature in black ink that reads "Anna L. Warwick Sears". The signature is written in a cursive, flowing style.

Anna Warwick Sears, Executive Director
Okanagan Basin Water Board

CC:

- Okanagan MPs: Stephen Fuhr, Mel Arnold, Dan Albas, Richard Cannings;
- Federal Critic: Todd Doherty,
- MLAs: Eric Foster, Norm Letnick, Steve Thomson, Ben Stewart, Dan Ashton, Linda Larson, Jackie Tegart, Greg Kylo
- Chiefs Executive Council, Okanagan Nation Alliance;
- Regional District Chairs for North Okanagan, Central Okanagan, and Okanagan-Similkameen;
- Okanagan Municipalities;
- Matt Morrison, Chief Executive Officer, Pacific NorthWest Economic Region;
- Gail Wallin, Executive Director, Invasive Species Council of B.C.
- Kelowna Chamber of Commerce



Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 9.1.2

November 20, 2018

Hon. **Doug Donaldson**, Minister of Forests, Lands, Natural Resource Operations, and Rural Development
Hon. **George Heyman**, Minister of Environment and Climate Change Strategy

Re: Extending the deadline for groundwater licensing

Dear Ministers Donaldson and Heyman,

On behalf of the Okanagan Basin Water Board, and on the recommendation of the Okanagan Water Stewardship Council, I write to request that the province extend the deadline for groundwater licensing (transitioning existing groundwater users), set for March 1, 2019, to allow more outreach and to get more groundwater licensees into the system. After this deadline, any groundwater user that is required (based on volume and type of use) to obtain a license will be out of compliance, will lose their senior water rights, and will be extracting water illegally.

While we are very strong supporters of groundwater licensing, and the urgent need to license all industrial and commercial users, we are concerned by reports that only a small fraction of B.C.'s large well owners have applied for licenses to date. We would prefer to see an extended deadline paired with a stronger outreach and education program, while streamlining the application process and response times to bring in more licensees, as legal groundwater users, before the new deadline. This will require additional budget and dedicated staff.

There is a great need for communication, enforcement, and compliance monitoring from government to the groundwater users. It would be better to delay the deadline, with whatever penalties the government sees fit, than to have a large (unknown) population of users outside of the system. We would like to see a target of at least 80% of users licenced. We believe a deadline extension, improving the licensing system (shortening wait times), and a communication and outreach program, would greatly improve these numbers. The OBWB would be happy to help with outreach within the Okanagan valley.

Yours sincerely,

Anna Warwick Sears, PhD
Executive Director
Okanagan Basin Water Board

November 23, 2018

Okanagan Basin Water Board
Regular meeting
December 12, 2018
Agenda No: 9.1.3

Lynn Kriwoken, Ministry of Environment and Climate Change Strategy

Ted White, Ministry of Forests, Lands, Natural Resource Operations, and Rural Development

Re: Policy recommendations on extending the deadline for groundwater licensing

Dear Ms. Kriwoken and Mr. White,

This letter is a follow-up to my letter of November 20, 2018, to Ministers Heyman and Donaldson. The Okanagan Basin Water Board (OBWB – see Appendix B) wishes to bring the following information to your attention, developed by the Okanagan Water Stewardship Council, our technical advisory body. Through the Council's communication with many farmers, producers, local governments, regional district governments and other stakeholders in the Okanagan region, it is evident that there is considerable uncertainty related to the Water Sustainability Act (WSA) groundwater well registration and well licensing. The purpose of this letter is to provide more information and further urge you to: (1) *Extend the 3-year transitional period currently scheduled to end on February 28, 2019*; and (2) *Allocate more resources to support existing groundwater users with their groundwater licence applications*. Additional rationale and specific related issues, along with suggested solutions, are given in Appendix A.

Extend the transition period

The inclusion of groundwater users into the licensing process is a key step in important and far-reaching discussions and action on environmental flow needs, First Nations water rights, water use, priority of use, and how B.C. will cope with our future climate. It is important to have all water users properly identified and engaged with the process, or other more complex parts of the WSA will fail, including the ability to manage water use conflicts in times of drought. Regional and local efforts to develop water plans are also hampered by a lack of information about groundwater use. We strongly urge the Province to reconsider the deadline of February 28, 2019 for licensing of existing wells. We suggest that the government work to a target level of 80% compliance, potentially adding three to five years to the transition period, with retention of priority dates and continuing to waive the application fee for that period.

Allocate more resources to support groundwater users with existing use licence applications

We commend the dedicated provincial staff who have worked on the challenging aspects of this important transition. We would like to encourage stronger public outreach and education efforts by the provincial government during the remaining initial transition period and the new extended transition period. We urge the province to dedicate sufficient personnel and resources to public education and engagement, well owner education, and direct assistance to well owners navigating the registration system.



The WSA and its regulations represent cornerstone pieces of legislation for B.C.'s economic future at the provincial, regional and local levels. We want this transition to be successful and set a foundation for a water secure future for our Province. The OBWB is happy to assist the Province in moving forward to successful implementation of the WSA. Please let me know how we can support you in the months ahead.

Yours sincerely,

Anna Warwick Sears, PhD
Executive Director
Okanagan Basin Water Board

CC: Mark Zacharias and Bobbi Plecas, B.C. Ministry of Environment and Climate Change

Appendix A: Issues and Recommendations

Issue 1: There are financial implications of non-compliance with well licensing requirements

Background: There have been many reports that the public and well owners do not realize the financial ramifications of non-compliance. Some private well owners are under the impression that if they ignore the licensing requirement they can avoid paying rental fees until they put the well into production, or until their well is discovered by the province. They are less aware of the financial risk of not licensing during the transition period, and losing their priority date. They may not understand that when they come to license their well later, voluntarily, or under order, they may not be granted access to water, or they may need to complete expensive technical assessments to support their licence application. This additional financial burden will impact both their ongoing business and their land value. In addition, if they don't have the financial resources to undertake the technical assessments, their only choice may be to do nothing. This will make compliance and enforcement of the WSA very difficult (the well owner may turn the pump back on after the inspector leaves).

Suggested Action: Carry out greater public outreach, emphasising the potential business and financial consequences of non-licensing. Outreach activities should include those in the banking and real estate sectors to ensure that proper groundwater licensing is part of regular business planning and real estate transaction declarations.

Benefits to the Province: Having existing groundwater uses properly licensed protects jobs in the water industry and farming sectors and allows for the WSA to be used the way it was intended (to effectively manage water use conflicts in times of water scarcity).

Issue 2: Social consequences of non-compliance with well licensing

Background: Before the WSA, well owners have observed cases where irrigators use surface water without authorization for years with little to no consequences. If users are to be convinced that they need to apply for and pay for a water licence, and pay water rental rates, they should see concrete action being taken equally amongst surface water and groundwater users; ensuring that those who do not get a licence face consequences. Users need to see the system working for them.

Suggested Action: Dedicate more staff to enforcement. The enforcement need not be initially punitive in an extended transitional period, but there should be visible enforcement for both groundwater and surface water users. Initial contacts could perhaps be a licensing order, where the groundwater or surface water user is given a specific and short timeline to license or face financial or other consequences. For those who are found using groundwater after the transitional period, the amount of financial penalty should be related to the years past 2016 and exceed the estimated rental rates in those years. Enforcement must be applied evenly between surface and groundwater users.

Benefits to the Province: Increasing the numbers of licensed users increases revenue from rental rates, and both surface water and groundwater users are considered equal, which is as the WSA was intended.

Issue 3: Perceived difficulty of the licensing process

Background: We have heard that people find the system disjointed and hard to navigate, with long delays, and are therefore putting off participation. Doing a thorough review of the licensing process, and assessing lessons learned so far, will improve the overall process and make it easier to navigate.

Suggested Action: The OBWB is willing to assist local organizations, such as regional districts, and provide input for workshops to potential licensees. It would be beneficial to have a toolkit from the Province to help guide workshops, and a commitment from provincial staff to attend or facilitate. A review of what sectors use groundwater, and comparison with the sectors who have applied, will help determine which sectors need additional attention.

Benefits to the Province: Increased partnerships with regional and local governments can leverage Provincial investment in outreach with contributions from other levels of government.

Issue 4: Financial burden on intermediate sized users

Background: The current threshold for more comprehensive evaluation of impacts on neighboring wells, water resources and environmental flow needs is set at 100 m³/day (18 U.S. Gal/min). For agricultural irrigation use, this represents quite a small irrigated property. The BC Agricultural Water Calculator (<http://www.bcagriculturewatercalculator.ca/>) estimates that this is only about 3 acres of forage in the Okanagan, similar to a residential acreage property. The financial burden of such an assessment is the same for a 101 m³/day use as for a 4000 m³/day use by a larger farm with peak flow needs of about 120 acres in the Okanagan. The financial burden of additional studies is a disincentive for intermediate sized users to enter the licensing process.

Suggested Action: Consider introducing another use category between 100 m³/day and another higher threshold, like 1000 m³/day.

Benefits to the Province: The investment into water management better reflects the economic impact.

Issue 5: Financial burden on first new groundwater or surface water applicant.

Background: There are significant financial burdens to assess environmental flow needs (EFN) placed on the first new water licence applicant after the 2016 transition date. Applicants have spent tens of thousands of dollars on EFN studies. Subsequent applicants either hear by word of mouth that their application will likely be unsuccessful, and do not apply, or benefit from the financial outlay by the first new applicant in the watershed. This provides a strong financial disincentive to be the first applicant and a disincentive for new users to license new wells.

Suggested Action: Consider a mechanism to provide funding for EFN studies, or a mechanism that spreads the cost of an EFN assessment on all users within the watershed.

Benefits to the Province: Potential investors in the B.C. economy do not delay their investment.

Issue 6: Need for drilling authorization requirements in some regions

Background: Some new groundwater uses have been denied by the Province based on information already known about water availability. We have heard from those in the groundwater drilling, pump installation and agricultural industries that they would be in favour of introducing requirements for drilling authorizations in some areas of the province. This would identify areas where water licences are likely to not be issued due to over-allocation of potentially impacted streams, or those with difficult drilling conditions such as artesian conditions. Drilling industry professionals have said they feel uncomfortable representing the uncertainty of the licensing system to prospective well owners.

Denial of well licences after considerable financial outlay to drill a well leads to disengagement and mistrust in the process by other well owners or potential owners. Those who are unclear on the difference between new and existing groundwater licensing options may further choose to delay their application based on a misunderstanding of how existing uses are considered.

Suggestion Action: Consult with the B.C. Groundwater Association and other regional bodies about specified areas of the Province that should require drilling authorizations.

Benefits to the Province: Greater engagement with well drilling and installation business community.

Appendix B: Okanagan Basin Water Board

The OBWB was initiated in 1968 (legislated in 1970) as a valley-wide partnership to identify and resolve critical water issues in the Okanagan watershed. The Board of Directors includes representatives from the three Okanagan regional districts, the Okanagan Nation Alliance, the Water Supply Association of BC and the Okanagan Water Stewardship Council – a multi-stakeholder group established by the Board to provide independent science-based advice on water issues. In 2013 the Okanagan Water Stewardship Council was awarded the Award of Excellence in Water Stewardship from the Council of the Federation Water Stewardship Council.

The OBWB strives for consensus decisions and Directors have equal-weighted votes. Programs are supported through tax assessments on lands within the Okanagan watershed. The Board's jurisdiction is defined by the borders of the Okanagan watershed, or basin, rather than by political boundaries. The basin is almost 200 km long and 8,000 km² in area. It is a narrow strip stretching from the city of Armstrong to the U.S. border that includes the six main lakes – Okanagan, Kalamalka, Wood, Skaha, Vaseux and Osoyoos – and surrounding mountains. The OBWB's vision is to have a fully-integrated water system, meeting the needs of residents and agriculture while supporting wildlife and natural areas. The OBWB is supported by 10 staff, and, along with partners, has completed many award-winning and innovative projects, including a Water Supply and Demand Study for the entire watershed, Environmental Flow Needs Methods Setting, and Aquifer Mapping. These studies are used by water allocation officers with B.C.'s Ministry of Forests, Lands, Natural Resource Operations and Rural Development to support well-informed licensing decisions. More information on the OBWB can be found at www.OBWB.ca.