Okanagan Basin Water Board Meeting Agenda

DATE: Tuesday July 6, 2010

TIME: 10:00am to 2:00pm

PLACE: Regional District North Okanagan
9848 Aberdeen Road, Coldstream BC

1. CALL MEETING TO ORDER

2. APPROVAL OF AGENDA

3. INTRODUCTION OF LATE ITEMS

4. ADOPTION OF MINUTES
   - 4.1 Minutes of the Regular Meeting of the Okanagan Basin Water Board of June 1, 2010 at the Regional District of Okanagan-Similkameen in Penticton

5. DELEGATIONS
   - 5.1 Ted van der Gulik, BC Ministry of Agriculture, Okanagan Irrigation Management tool presentation

6. STAFF REPORTS
   - 6.1 Executive Director Report
     - 6.1.1 Draft WS&D Project Phase 3 Core Team
     - 6.1.2 Topsoil Primer – Law & Policy Primer and Technical Primer included
   - 6.2 Water Stewardship Director Report
   - 6.3 Office and Grants Administrator Report
     - 6.3.1 Update on milfoil survey
   - 6.4 Communications and Research Coordinator Report

7. NEW AND UNFINISHED BUSINESS
   - 7.1 Database Management Contract – Ron Fretwell
   - 7.2 Sponsorship of Dirt Movie event
   - 7.3 Draft letter on reservoir lots
   - 7.4 LEEF Chair request from UBC-O
   - 7.5 Groundwater Monitoring Well Project
   - 7.6 Adoption of Audited Financial Statements

8. CORRESPONDENCE
   - 8.1 Funding award letter from Ian MacCleod, Environment Canada.

9. NEXT MEETING
   - 9.1 The next regular meeting of the Okanagan Basin Water Board is TBA.

10. ADJOURNMENT

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 4.1

MINUTES OF A REGULAR MEETING OF THE OKANAGAN BASIN WATER BOARD HELD JUNE 1, 2010, AT REGIONAL DISTRICT OF OKANAGAN-SIMILKAMEEN, 101 MARTIN ST., PENTICTON, BRITISH COLUMBIA

PRESENT

Vice-Chair Rick Fairbairn	Regional District North Okanagan
Director Buffy Baumbrough	Regional District North Okanagan
Director Gyula Kiss	Regional District North Okanagan
Director James Baker	Regional District Central Okanagan
Director Doug Findlater	Regional District Central Okanagan
Director Graeme James	Regional District Central Okanagan
Director Gordon Clark	Regional District Okanagan-Similkameen
Director Bernie Bauer	Okanagan Water Stewardship Council
Director Toby Pike	Water Supply Association of BC

REGRETS

Chair Stu Wells	Regional District Okanagan-Similkameen
Director Michael Brydon	Regional District Okanagan-Similkameen
Director George Saddleman	Okanagan Nation Alliance

OBWB STAFF

Anna Warwick Sears	Executive Director
Nelson Jatel	Water Stewardship Director
Genevieve Dunbar	Office and Grants Administrator
Corinne Jackson	Communications and Research Coordinator
Melissa Tesche	Outreach and Education Assist./O&G Admin. (mat lv.)

GUESTS

Carolina Restrepo-Tamayo	Okanagan Collaborative Conservation Program

1. CALL MEETING TO ORDER

Vice-Chair Fairbairn called the meeting to order at 10:07 a.m.

2. APPROVAL OF AGENDA

"THAT the agenda of the regular meeting of the Okanagan Basin Water Board of June 1, 2010 be approved as amended."

CARRIED

3. INTRODUCTION OF LATE ITEMS

Item 7.4 – BC Water Science Strategy
Item 7.5 – Recording of minutes protocol
Item 7.6 – Approval of 2010-2011 Okanagan Water Supply and Demand Project budget

4. ADOPTION OF MINUTES

4.1 Minutes of the Regular Meeting of the Okanagan Basin Water Board of May 4, 2010 at

Regional District of Central Okanagan in Kelowna.

Amendment: Correction of attendance.

"THAT the minutes of the regular meeting of the Okanagan Basin Water Board of May 4, 2010 at Regional District of Central Okanagan in Kelowna be adopted as amended."
CARRIED

5. DELEGATIONS

5.1 Carolina Restrepo-Tamayo, Program Coordinator of Okanagan Collaborative Conservation Program (OCCP): New Sustainability Planning website (SPOKE/OKCP)

Dr. Warwick Sears introduced Ms. Restrepo-Tamayo, noting that the OCCP's Sustainable Planning for Okanagan Environment (SPOKE) project and its resulting Okanagan Conservation Planning (OKCP) website is being conducted in partnership with UBC-Okanagan. The project was originally led by Environment Canada but stalled. It was then turned over to OCCP with the Water Board administering the funds.

Ms. Restrepo-Tamayo noted that the OCCP began four years ago with residents who were concerned about conservation issues. Today there are 25 partners including the university, various government ministries, non-profits, and land trusts. Partners form action teams on various projects and once a project is complete the team disbands.

Current projects include a Foreshore Inventory Mapping (FIM) Program, a program that maps wildlife Connectivity Corridors, an Okanagan Habitat Atlas, and the SPOKE-OKCP website that makes these projects available to the public.

SPOKE-OKCP Okanagan Conservation Planning

The SPOKE-OKCP website includes information to assist local government planners make decisions on development applications, noted Ms. Restrepo-Tamayo. For example, FIM provides snapshots of the Okanagan's shorelines and indicates sensitive habitat areas. The connectivity corridors provide information on wildlife movement and migration that can be used when considering hillside development applications. The Okanagan Habitat Atlas, a compilation of ecosystem mapping, is also on the website.

Once completed, the project will also be a web portal to three websites. The websites will include the work of the OKCP, but also the OCCP and the South Okanagan Similkameen Conservation Program (SOSCP) websites. In addition, partners can load events, newsletters and blog on the site, allowing for improved communication between groups who are working in conservation in the Okanagan valley.

Dir. Bauer asked how the Water Board and OCCP can work more closely. Restrepo-Tamayo responded that there could be more collaboration on education and outreach and the expansion of projects like FIM in the North Okanagan.

6. STAFF REPORTS

6.1 Executive Director Report

Dr. Warwick Sears reported that the province's moratorium on the sale of reservoir lots expires this summer. The Okanagan Water Supply and Demand Study climate change scenarios indicate there will be decreased snow storage and the region will have to rely more heavily on reservoir storage for irrigation and environmental flows, she noted. It was recommended that a letter be sent to the province outlining the Water Board's concerns.

Dir. Clark asked that a letter be drafted and forwarded to the board for review.

There was some question about the amount of scientific research the province has done on the potential consequences of selling the lots. Dir. Baker added that District of Lake Country is currently conducting studies which should be completed in the fall, but so far indicate that developing these lots and allowing cabins and recreation are a health risk.

Dir. Pike suggested that source assessments be done, adding that the development of cabins and recreation do create an increased risk for sewage to enter drinking water supplies. The letter to the province should note that studies are still being conducted but on balance indicate a risk to water supplies, he said. Dir. Baker added the letter should suggest the province put the sale of these lots on hold until the studies are completed.

"THAT the Okanagan Basin Water Board draft a letter to the minister in charge of the reservoir lots file, renewing its recommendations on the non-sale of these parcels, and that the letter be forwarded to the board for review before final submission."
CARRIED

Dr. Warwick Sears went on to note that the Water Board received a $10,000 grant from the province to match the $70,000 in funding from the federal government to develop a basin-wide drought plan. A Request for Proposal will be put out by the end of June.

The OBWB is helping organize a rainwater management conference, "From Rain to Resource," for October. More details will be provided in the coming months.

A final technical report on Phase 2 of the OWSD Project should be completed this month. More information will be provided at the next board meeting, said Dr. Warwick Sears.

As requested by the board, staff members are looking at the best way to develop the milfoil program's accountability, in part by mapping the areas where milfoil is being controlled, she added.

6.1.1 Report from Australia – Lessons from the Outback PowerPoint presentation

Dr. Warwick Sears reported on her recent two-week water policy tour of Australia, noting the purpose was to examine the Australian experience coming out of a 10 year drought.

Dr. Warwick Sears was accompanied by Ted van der Gulik, with BC Ministry of Agriculture and Lands, and Jackie Belzile, who organized the tour and who is doing her master's thesis on "What the Okanagan can learn from Australia about water management." Meetings were held with federal officials, including the Water Advisor to the Minister of Climate Change, those working in water research, farmers and industry groups.

Water trading in Australia was introduced in 1994 and licences were capped, noted Dr. Warwick Sears. At this time, drinking water was given first priority, allocation to the environment was considered and shares could be permanently or temporarily sold.

In 2007, the federal government led water reform, bringing states together to meet common needs and allowing states to work out the details within their own jurisdiction.

The Murray-Darling Basin Plan is one of Australia's biggest projects. The basin contains several nationally significant wetlands that have dried out. Work is underway to get water for the

environment back by reducing how much is used throughout the rest of the basin. The work has been ongoing for a couple of years and will affect agriculture, making the project controversial.

The Murray-Darling Basin Authority is a committee that includes experts and other independent political appointees who give recommendations to the federal Minister of Water. The authority is developing a framework for state planning, and is looking to set sustainable diversion limits and get less productive lands out of the system.

Dir. Clark asked if aboriginal water claims where considered. Dr. Warwick Sears noted that drinking water is protected, but it is her understanding that aboriginal communities are expected to get additional water entitlements through the licensing system and water markets.

When it comes to water, Australia has invested heavily in science, she added, saying that they have the Commonwealth Scientific and Industrial Research Organisation with 400 staff and annual funding of $100 million, plus university funding. They also have the e-Water Cooperative Research Centre. Some of the work is similar to the modeling being done with the Okanagan Water Supply and Demand Project, and their biggest project is the Murray-Darling program.

At the state level, governments are responsible for establishing water trading rules, water sharing plans, working with Irrigation Districts to implement water plans, and there have been some conflicts between state laws, reported Dr. Warwick Sears.

Water markets have made for some interesting concepts to be tested, she added, noting a wetland reservoir where some of the water rights were sold to the federal government. The money was used to improve the water storage area. As a result of the work, evaporative losses dropped substantially.

Australia has excellent public signage to convey water issues, Dr. Warwick Sears continued.

The prices are different for domestic water and agricultural water, she said, noting people in Australia were surprised to hear that we irrigate with treated drinking water. There is a big focus on recycled water for irrigation, maintaining environmental flows for fish, and for outside irrigation in urban areas.

The culture of water conservation is very strong, added Dr. Warwick Sears, saying dual flush toilets are everywhere, and all water is measured.

The new direction for government is to get everyone conserving so that water restrictions will never have to happen. And, should they ever need it, they have a backup desalination plant if required.

In summarizing, Dr. Warwick Sears noted that Australia's water planning began in 1994 but accelerated under drought. There are a number of things they could improve, she suggested, for example the lack of transparency with planning, insufficient communication with water users, lack of regulation/consistency in water markets, insufficient economic/social analyses, and little help with structural adjustments for communities.

There are also a number of initiatives in Australia that should be considered for adoption here, she added, such as universal metering and a way for users to track their meter readings on the Internet. There should be local water demand studies conducted. Water sharing drought plans need to be developed and water market-based reallocation mechanisms should be studied further.

Vernon has an online Okanagan Irrigation Management (OKIM) system that shows farmers their consumption and their allocation. Glenmore Ellison is also developing it, as are other areas in the valley. We should be encouraging this type of data access and stakeholder engagement, said Dr. Warwick Sears.

In response to a question about how water markets (WM) would work in the Okanagan when there is opposition to it from those who benefit from the current system, Dr. Warwick Sears noted the discussion still needs to happen. In Alberta, they are bringing people to the table who are for and against WM and determining how they can find balance, she said.

Dir. Pike asked how the Australian experience translates to the Okanagan where there is an Agricultural Land Reserve, noting that there need to be policies that ensure water to these lands. Dr. Warwick Sears said that can still happen. Farmers could decide how to farm the land and be able to trade water amongst themselves. There is room for flexibility.

"THAT the Executive Director Report from Dr. Warwick Sears, dated May 25, 2010, be received.

CARRIED

6.2 Water Stewardship Director Report

Mr. Jatel reported on the May Okanagan Water Stewardship Council (OWSC) meeting, noting the videotaping of three presentations that will be part of a video library to be posted on the OBWB website. Presentations centred around the issue of Water Markets. The issue is a very sensitive one, but the presentations provided an opportunity to start a discussion on their pros and cons.

Jim Stronach will be speaking at the June meeting on limnology work he has been doing on Okanagan Lake for City of Kelowna. The studies are intended to help the city determine at what depth drinking water should be coming from.

Dir. Bauer added that the sensitivities around Water Markets (WM) were apparent at the last Stewardship Council meeting, but agreed it is an important discussion that needs to happen.

Dir. Pike noted that if we are going to consider WM that it will have to be an Okanagan-made solution because of the unique issues here. Dir. Bauer agreed and added that it is best to have this discussion now before we're in a crisis and acting reactively.

Mr. Jatel went on to report that the Streamlined Water Use Reporting Tool (SWURT) Project had another meeting the previous week. Eighteen purveyors from across the Okanagan attended and reviewed the web prototype. Another meeting is being held with various ministries in Victoria next week.

The third drought webinar will be held June 9 at 1:30 p.m., added Jatel.

Work on developing a scoping document and funding application for the NASA Remote Sensing Project is continuing and will include the Okanagan Valley as well as the U.S. Okanogan. The purpose is to use remote sensing data to develop better water management practices, building on the Okanagan Water Supply and Demand (OWSD) models, considering population growth, climate change and the effects on supply and demand. It might be possible that, with the use of remote sensing data, information collected from current hydrometric stations may be complemented. This would meet the stated interest of the board in increasing the current hydrometric data collected, added Jatel.

One of the goals, noted Dr. Warwick Sears, is to have better data with lower maintenance costs.

Summit Environmental is completing the draft Phase 1 Okanagan Remote Sensing Project: Scoping Documents and Project Charter report. The report helps identify how remote sensing technology may support OWSD tools. The report will support proposals for funding to NASA's 'Research Opportunities in Space and Earth Sciences' grant funding opportunities. The report recommends developing a research program, funded by NASA, to support approximately $5.3 million of research in the Okanagan/Okanogan basin over five years. The OWSD work is being considered an in-kind contribution to leverage U.S. federal funds.

"THAT the Water Stewardship Director Report from Mr. Jatel, dated May 25, 2010, be received."

CARRIED

Dir. Pike exited the meeting at 12:15 p.m.

6.3 Office and Grants Administrator Report

There was some discussion around the board's summer meeting schedule and setting a date for the OBWB's Annual General Meeting. The Aug. 3 regular meeting falls on a Tuesday after a statutory holiday, Ms. Dunbar reported. It was decided to keep the meeting and cancel it if it's found to be unnecessary.

Staff will report back on the potential of holding the AGM on Sept. 7 or 10th.

"THAT the Office and Grants Administrator Report from Ms. Dunbar, dated May 21, 2010, be received."

CARRIED

6.3.1 Report on CEGN Conference

Ms. Dunbar provided a report on the Canadian Environmental Grantmakers' Network conference, noting its focus on the importance of partnerships – both between funding recipients and between funders.

The OBWB is unique in that it receives grants but also provides grants, she added, saying the conference was a good opportunity to share information on how the Water Board operates. There was a feeling from grantmakers that funding non-profits is the right way to go, but OBWB staff members were able to speak to the benefit of partnering with municipalities since they have the capacity to carry projects out.

Dr. Warwick Sears added that it was interesting to hear about funders who directed grants to very specific initiatives. For example, funding from the Max Bell Foundation is being used to bring people together on both sides of the Water Markets issue to develop policy. The Great Bear Rainforest project is being funded by private foundations, in partnership with government.

6.4 Communications and Research Coordinator Report

Ms. Jackson provided an update on the Okanagan WaterWise program. The WaterWise staff team is looking to get out into the community and test the market and the message this summer, but also strategize for long-term sustainability and success of the program, she said.

In considering the long-term, meetings are being scheduled with water sustainability staff in the valley to discuss partnership opportunities. The first meeting has been held with RDNO and further meetings are scheduled with City of Penticton and City of Kelowna.

Other projects underway include the completion of the Okanagan WaterWise website, the launch of a Facebook page, and development of a series of posters to be used at various outreach events and potentially as ads for buses, bus shelters and Internet sites like Castanet.

Ms. Jackson also reported on the first Okanagan WaterWise outreach event, the Mayor's Environmental Expo in Kelowna, and a photo slideshow was presented to the board. The event went over very well with children decorating and filling up one-litre bottles to be put in their toilet tanks as a way to conserve water, added Ms. Jackson. In order to ensure that the bottles found their way into the tanks, children were given a postcard to sign, saying they've completed the task and pledging one more way they will conserve water. These postcards will be returned to teachers who will then forward them on to WaterWise to be placed in a draw to win pool passes.

"THAT the Communications and Research Coordinator Report from Ms. Jackson, dated May 25, 2010, be received."

CARRIED

7. NEW AND UNFINISHED BUSINESS

7.1 Sewerage Facilities Grant in City of Vernon

Dr. Warwick Sears reported on a sewerage grant application from City of Vernon, noting it had been awarded by the board in 2007, but was not finalized because the OBWB required additional information from the city to finalize the award. Funds for this project have been requisitioned for and are included in current budgets, she added.

"THAT the Okanagan Basin Water Board reconfirms a sewage facilities grant award of $118,234.43 per annum to the City of Vernon beginning in the 2008-09 fiscal year, continuing until the debt is retired."

CARRIED

Dir. Bauer abstained

As a result of the Vernon application, it became clear there is some confusion about when a grant begins, said Dr. Warwick Sears. It was recommended a formal policy be adopted that the OBWB only award grants when: a project has begun; that payments be made on a Municipal Financing Authority note or equivalent; and, that the funds have been budgeted and requisitioned.

Dir. Findlater noted that it is difficult for municipalities to know when they will receive funds.

In response to a question about how funding levels in various parts of the Okanagan are determined, Dr. Warwick Sears noted that funds are not apportioned but based on where the worst pollution is and which communities have the capacity to take on projects. Everyone benefits from clean water, she added, saying there has been more than a 90 per cent reduction in phosphorous in Okanagan Lake since the program started.

"THAT the Terms of Reference for the Okanagan Basin Water Board's Sewerage Facilities Grant Program be amended to clarify that grant award payments to local government begin only after the project has broken ground and (a) payments have been made on an MFA note or equivalent, and (b) the funds have been budgeted and requisitioned."

CARRIED

Dir. Bauer abstained.

Dir. Kiss exited the meeting at 1:10 p.m.

7.2 Sewerage Facilities Grants in RDOS – Okanagan Falls and City of Penticton

Dr. Warwick Sears explained that RDOS applied for a grant for upgrades to the OK Falls wastewater treatment plant. The project is still in the pre-design phase and construction will likely begin in one to two years. Since OBWB funding is tied to loan repayments, the board will need to budget for this grant in 2012-2013.

"THAT the Okanagan Basin Water Board approves in principle a grant to RDOS for eligible costs related to construction of a tertiary sewage treatment plant in Okanagan Falls."

CARRIED

Dir. Bauer abstained.

In speaking to RDOS' City of Penticton sewerage grant application, Dr. Warwick Sears noted the city was awarded the grant in 2007. It made its first debt repayment in the fall 2009 but the full eligible amount was not included in the Water Board's 2009-2010 or 2010-2011 budget. This issue has been sorted out with Penticton's treasurer, she added. There has been a reduction in MFA interest rates since the project was first approved. As such, there is room to cover this grant within the 2009-10 year-end accruals and 2010-11 budget.

In response to questions concerning application process and requirements, Dr. Warwick Sears explained that applicants provide preliminary project plans to the OBWB so that it can prepare a financial plan. The applicant then applies for and receives their MFA note. But, by the time the project breaks ground sometimes things have changed. With the change in MFA interest rates, grant amounts can be decreased, noted Dr. Warwick Sears.

"THAT the Okanagan Basin Water Board reconfirms the 2007 grant to the City of Penticton for $112,945 in 2009-10 and $207,296.43 in 2010-11 and onwards to upgrade their sewerage treatment and collection system."

CARRIED

Dir. Bauer abstained.

7.3 RDCO lease agreement

Dr. Warwick Sears reported that the lease agreement with RDCO is up for renewal. While service costs are more with this lease, it is felt that the level of service has also increased. The Water Board's financial officer at the RDCO has been reviewing the sewerage grant program and other systems around water management which will result in future cost reductions as she completes this work and reduces her hours. In addition, the lease costs reflect a fair rate for these services. It is recommended that the lease be renewed for two years with an option to renew for an additional two years.

"THAT the Okanagan Basin Water Board approves the lease agreement as presented by RDCO."

CARRIED

Dir. Bauer abstained.

7.4 BC Water Science Strategy

Dir. Bauer reported on a water strategy conference being held Aug. 31 to Sept. 1 and which came out of Living Water Smart. The objective is to link those who make decisions with the water purveyors and others and to discuss what information they use and what information they need. For example, the Okanagan Water Supply and Demand modeling might be translatable province-wide, he added.

The conference is being held simultaneously at University of Northern B.C., University of Victoria, and UBC-Okanagan. Keynote addresses will be webcast and then each site will have break-out discussion sessions and a reporting back process. Dr. Bauer suggested this would be a good opportunity for individual OBWB directors to provide leadership, perhaps by chairing a panel discussion.

Board members asked to be kept apprised of the conference.

"THAT the information on the BC Water Science Strategy from Dir. Bauer be made public through the minutes and summary report of the meeting."

CARRIED

7.5 Recording of minutes protocol

Dir. Bauer reintroduced discussion around the recording of moving and seconding of motions which had been discussed at the previous board meeting. By recording who moved or seconded a motion, it allows constituencies to see who acted on a motion and allows them to then go to the board member and ask why they did or did not move or second, he said.

Dir. Clark agreed that transparency is important and noted he did not vote in favour of the change. Moving or seconding a motion is merely getting an item on the table for discussion, and this should be recorded, he added.

Dir. James noted that Kelowna records the mover and seconder, and although this does not mean one is in support of a motion, sometimes it is viewed that way. He suggested that discussion be deferred until more directors are present because there was support for a motion last month to no longer record the mover and seconder.

"THAT discussion on the recording of movers and seconders in Okanagan Basin Water Board minutes be deferred until more directors are available."

CARRIED

7.6 Approval of 2010-2011 OWSD Project Budget

Dr. Warwick Sears brought the 2010-2011 budget for the Okanagan Water Supply and Demand project forward for board approval, noting that the auditor requested a budget for this fiscal year.

Phase 2 of the project was managed by various agencies, whereas phase 3 will be mostly managed by the OBWB, she added.

"THAT the Okanagan Basin Water Board approves the 2010-2011 budget for the Okanagan Water Supply and Demand project."

CARRIED

Dir. Bauer abstained

8. CORRESPONDENCE

8.1 Bill Bennett, Minister of Community and Rural Development, notice of funding for Okanagan Basin-wide Drought Response Plan

"THAT the Okanagan Basin Water Board receive the correspondence from Bill Bennett, Minister of Community and Rural Development, regarding funding for Okanagan Basin-wide Drought Response Plan."

CARRIED

8.2 Grand Chief Stewart Phillip to B.C. Environment Minister Barry Penner, regarding the Water Act Modernization process

"THAT the Okanagan Basin Water Board receive the correspondence from Grand Chief Stewart Phillip to B.C. Environment Minister Barry Penner, regarding the Water Act Modernization process."

CARRIED

9. NEXT MEETING

The next regular meeting of the Okanagan Basin Water Board will be held on July 6, 2010, at the Regional District of North Okanagan.

10. ADJOURNMENT

"THAT there being no further business, the regular meeting of the Okanagan Basin Water Board of June 1, 2010 be adjourned at 1:37 p.m."

CARRIED

Certified Correct:		
Chair		**Executive Director**

Okanagan Basin
WATER BOARD
1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 6.1

File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears, Executive Director

Date: June 29, 2010

Subject: Executive Director Report

Financial Statements

Our auditors are finalizing our financial statements for review and adoption by the Board. These statements will be formally published in our Annual Report, which is now being prepared by staff. Our accountant and I are continuing to work with the auditors on improving the readability of the statements, but we are still somewhat in transition from the old systems. The draft statements are provided in the agenda package, with the expectation that the finalized statements will be available at the OBWB meeting for adoption.

Environment Canada Grant

Environment Canada has provided the OBWB with another grant opportunity from their Strategic Integration Division – the same department that provided us with money for the SPOKE/OKCP project. I am having a dialogue with EC staff about what projects we are allowed to fund with the 2010-11 grant. They are most interested in work that relates water and species or habitat protection.

Water Supply & Demand Project Update

The final technical report for the Water Supply & Demand Project - Phase 2 (WSDP) has been completed. We are revamping the WSDP portion of our website to make all water supply & demand information easier to access. With the proposed new data management contract (see agenda item), we are working on a system for the data and models to become more accessible.

Phase 2 of the Water Supply & Demand Project was managed by an interagency working group and a project steering committee. I have included a draft of the new organization chart for Phase 3, approved at the Working Group meeting on June 4. Letters of invitation are needed for the participants of the Core Team

Recommendation: *That the OBWB issue invitation letters to the proposed participants of the new Phase 3 Core Team and their respective agencies to continue to contribute to the project on an in-kind basis*.

Eurasian Watermilfoil Program Update

The milfoil crew have spent most of June doing annual maintenance and repair of the rototillers and harvesters. In July, we will be conducting surveys (see separate memo) and beginning the harvesting season.

Stormwater Workshop

Planning continues for our Rainwater/Stormwater workshop planned for late October. This workshop is funded by the Resource Adaptation Collaborative (RAC), and co-hosted by the BC Water and Waste Association. A flier for our website is attached to this report.

Topsoil and Water

In this agenda package, the Fresh Outlook Foundation has approached the OBWB about sponsoring a special outdoor screening of "Dirt - the movie." I attended one of the screenings she held in May, and most of the questions for the panel were about *water,* and the interaction between topsoil and water supplies. Having adequate topsoil is one of the easiest and inexpensive ways to reduce water consumption in landscaping, and to prevent stormwater runoff.

In the past, there has been discussion by the Water Stewardship Council about developing draft topsoil bylaws for the Okanagan, similar to our groundwater bylaws toolkit. The Green Infrastructure Partnership (a committee of the BC Water and Waste Association), developed the attached Topsoil Primer, but as you will see, this document needs more work before it can really be useful for local government. It is very likely that the OBWB would be able to obtain an infrastructure planning grant (up to $10,000, given matching funds) to produce a very useful document based on the work already completed. The Partnership has expressed interest in the idea, and would continue with involvement in the project. The deadline for these grant applications is August 11, 2010. If the Board is interested, I would like to find another funding partner or two to pursue this project.

Recommendation: *That the OBWB applies for an infrastructure planning grant from the Ministry of Community Development to develop a topsoil bylaws guide for water conservation and quality improvement in the Okanagan*.

Promotional Material created for "From Rain to Resource: Stormwater Management in a Changing Climate"

OBWB & WATERBUCKET WEBSITES:
The following information is to be posted on the OBWB and Waterbucket websites.

From Rain to Resource: Stormwater Management in a Changing Climate
Workshop and Tradeshow

October 28 and 29, 2010
Best Western Hotel, Kelowna, BC

Event Description

Effective rainwater management is a critical tool for adaptation to climate change – a leading policy concern in British Columbia. The goal of this workshop is to share positive and innovative developments in rainwater management and to discuss how barriers to change are being overcome in communities in B.C. and beyond. The overall objective is to move municipal governments beyond conventional stormwater management, and inspire them to use rainwater as an integrated resource.

Day 1 of the workshop will be geared toward technical operational and planning staff and will focus on site-level best practices and tools to deal with various situations (e.g., steep roads and slopes, flat sites and parking lots, retrofitting, etc.). The presentations will highlight success stories and lessons learned from the Okanagan, Vancouver Island and the Lower Mainland. Day 2 of the workshop will be of interest to technical operational and planning staff as well as to policy makers such as elected officials and municipal senior staff. The purpose of day 2 is to integrate the perspectives of the people working on-the-ground and those developing and adopting policy. In the morning, participants will choose from two tracks that will be focused on similar topics but with a "technical" or "policy" twist. In the afternoon, the two groups will jointly attend a keynote speaker and a plenary session to stimulate discussion and shared understanding.

This workshop will be of interest to people who put rainwater management techniques and products into practice, such as planners, engineers, and landscape architects from government and private industry, and to those that develop policy around rainwater management, such as elected officials and municipal senior staff.

This event is co-hosted by the Okanagan Basin Water Board and the BC Water and Waste Association.

For more information, please see www.bcwwa.org/seminars/RtoR.htm. Questions? Contact Jessica Baas at BCWWA: jbaas@bcwwa.org or 604-433-4389 (toll free 877-433-4389).

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 6.1.1

Okanagan Water Supply & Demand Project – PHASE 3
Team Structure

Updated: 4June2010

Funding:
NRCAN, OBWB, Province, Other Federal programs

Okanagan Basin Water Board

Okanagan Water Stewardship Council

Technical Contractors (as needed)

Project Coordination OBWB

Core Team

Anna Sears, OBWB	Ted van der Gulik, MAL
Wenda Mason, MOE	Denise Neilson, AAFC
Gwyn Graham, EC	Kim Hyatt, DFO
Doug Edwards, AAFC	Brian Symonds, MOE
Bernie Bauer, UBCO	Howie Wright, ONA
Toby Pike, OBWB	Fabian Alexis, ONA
Lorraine Bennest, BCAC	Stu Wells, OBWB

Phase 2 implementation

Communication
- OBWB Website
- Web Videos
- Visualization Tools

OkDatabase
- Hosting
- Maintenance
- Data Sharing
- Tech Training Manual

Web Reporting Tool
- Hosting
- Maintenance

MikeSHE models
- Training
- Scenarios
- Model improvements

Results to Policy
- water policy recommendations
- Community consultation on planning options
- Basin-wide drought strategy

Hydrologic Connectivity Study
- Basin-wide drought planning
- Lake trigger graphs

Improving the model

Lake Evaporation

Stream flow studies

Technical Advisors
Mike Noseworthy, MoE
Conrad Pryce, MoE
Shaun Reimer, MOE
Don McKee, MOE
Oleg Ivanov, MoE
Bob Hrasko, WSABC
Liam Edwards, MCRD
Atef Kassem, EC
Ivana Vouk,, EC
Younes Alila, UBC
Fred Wrona, EC
Terry Prowse, Ec
Rita Winkler, MOF
Adam Wei, UBCO
Dave Hutchinson, EC
Phil Epp, MOE
Brian Symonds, MOE
Alain Pietroniro, EC
Brian Bell, AAFC
Diana Allen, SFU
Craig Nichol, UBC-O
Alan Chapman, OGC

Other related projects:

Stormwater Conference & Report

NASA Remote Sensing Project

Streamlined Water Use Reporting

Agenda No: 6.1.2
Regular: ☑ In-Camera: ☐
Date: July 6, 2010
OBWB

Green Infrastructure Partnership

Topsoil: *Just How Do You* Obtain a Performing Topsoil Layer, to Advance Rainwater Management & Water Conservation Goals?

A Law and Policy Primer for Municipal Staff and Designers

February 2010

Topsoil: *Just How Do You* Obtain a Performing Topsoil Layer, to Advance Rainwater Management & Water Conservation Goals?

A Law and Policy Primer for Municipal Staff and Designers

Preface

An absorbent topsoil layer has emerged as a fundamental building block for achieving *water sustainability outcomes* through implementation of green infrastructure practices:

- **Rainwater Management:**
  An absorbent topsoil layer serves as a sponge when it is raining, results in healthier landscaping, and contributes to *sustainability of aquatic habitat*.
- **Water Conservation:**
  Well-rooted landscaping then requires less irrigation water, stays green longer during a drought, and contributes to *sustainability of water supply*.

In collaboration with three municipalities (City of Surrey, City of Courtenay and District of North Vancouver) that have pioneered absorbent topsoil requirements, the Green Infrastructure Partnership has developed two primers to assist local government staff and designers: this one deals with *Law and Policy*; while the other is a *Technical Primer.*

The co-leads for this initiative were **Susan Rutherford** (Staff Counsel with West Coast Environmental Law Research Foundation) and **Rémi Dubé** (Acting Manager for Development Services, City of Surrey). Their efforts are greatly appreciated.

Raymond Fung, P.Eng., Chair
Green Infrastructure Partnership
February 2010

Green Infrastructure Partnership

Topsoil: *Just How Do You* Obtain a Performing Topsoil Layer, to Advance Rainwater Management and/or Water Conservation Goals?

A Law and Policy Primer for Municipal Staff and Designers[*]

Introduction: Topsoil to Increase Absorbency and Save Water

Conserving the existing, improving or adding "topsoil"[1] to a site is one means[2] of achieving on-site source control of rainwater. Adequate depth of good quality topsoil on new or existing (re)developments has many benefits. Upping absorbency, the topsoil layer assists[3] community rainwater management infiltration objectives and supports strategies to conserve water which may be in scarce supply. Lawns[4] built to meet a topsoil standard are also less prone to weeds or chemical interventions (herbicides and pesticides) – an additional environmental and health benefit.

But how do local governments ensure that a healthy layer of topsoil is a priority for, and survives, the development and re-development[5] processes? In this Primer, local governments that have grappled with that challenge share lessons learned on law and policy considerations for achieving a layer of topsoil as an objective. An accompanying **Technical Primer** sets out technical considerations involved in implementing a topsoil objective. Strategies that worked well for those communities may also reap results in your community. One key to obtaining results seems to be to recognize that responsibilities are shared and actions are most successful when aligned with actions and policies at other levels of government, as well as the understanding and actions of the development, building and professional consulting communities. When objectives are tackled jointly, results are more quickly realized.

The actions described in this summary are not listed in sequential order. Your community's circumstances may require a different order or emphasis.

Regional Context and Other Senior Government Support

Because liquid waste/resource management and watershed management impact us on a regional basis and are often planned on a regional basis,[6] watershed health goals and objectives (e.g. biodiversity protection, improved water quality) will reinforce, and their own achievement will

[*] **These Green Infrastructure Partnership (GIP) Primers** are built on the experience the GIP has gained, since 2004, in promoting green infrastructure approaches to development in British Columbia, through series such as its "Showcasing Innovation – Celebrating Green Infrastructure" series. In spring 2009, following the Surrey Water Balance Model Forum, the GIP Steering Committee and other Forum organizers realized there could be a benefit to providing municipal staff and the professional design community with a succinct statement of all of the legal, policy and technical "essential elements" necessary to successfully implement a specific green infrastructure objective. The Topsoil Primer set is the fruit of that idea, and the first in what the GIP hopes will become a series of Primers. The Primers are premised upon the theme of *shared responsibility* – essentially recognizing that the responsibility for ensuring that development is sustainable rests with *all* who make decisions or take actions that impact the development process, from elected representatives, to staff and consulting professionals. The GIP thanks the City of Surrey, the City of Courtenay and the District of North Vancouver for their support and sharing of lessons learned in preparing the Topsoil Primer set.

be mutually supported by, local actions such as the achievement of topsoil objectives. A coordinated, regional/local team approach may facilitate the sharing of overlapping responsibilities. For example, the Okanagan Basin Water Board's Sustainable Water Strategy reflects and supports the region's priority of reducing water demand and all local actions complementary or further to that priority.

Understanding and support for topsoil strategies by senior governments and review agencies may provide additional incentive for municipal action to meet watershed objectives.

INTERNAL COLLABORATIONS

Key Planning Documents

Since the Official Community Plan (OCP) provides key direction to municipal regulation[7] and action, inserting supportive policy in the OCP becomes critical. For example, the City of Courtenay's OCP not only endorses the Water Balance Model, it also specifies minimum topsoil depths (300mm for groundcover and grass; 450mm around shrubs). These minimums are routinely incorporated into development permits.

To achieve agreement on OCP policy, solicit both inter-departmental staff support as well as policy leadership from elected representatives.

If your municipality has a Sustainability Charter, ensure mention of soil and benefits. Similarly, integrate topsoil requirements into all planning documents (guidelines used for design or applications such as, engineering, parks, building services) and policies until it becomes an integral part of planning, development and review.

Educate City Hall – gain inter-departmental support for your objective

Experience has proven it is not enough to have the City Engineering department alone understanding the importance of the topsoil layer. Gaining inter-departmental understanding and support is critical not only when overarching guidance policies are put into place (e.g. in an OCP or Sustainability Charter), but also in ongoing operations.

Local governments that have had success achieving topsoil objectives recommend:

- ***Generally, communicate objectives and establish joint expectations and understanding across all relevant departments***, so all staff comprehend the issue and how their plans, operations and actions are needed to support (or otherwise may hinder) the advancement of topsoil objectives. **Specifically, for any new project, proposal or application, consult EARLY with other departments up-front and discuss the details and implications of a topsoil objective**. Successful municipalities have worked in a collaborative way to share topsoil objectives with staff in the following departments or functions: Engineering, Planning, Parks, Roads and Transportation, Operations and Maintenance, Construction Inspection, Building Inspection, Environmental, Front Counter, By-law Enforcement.
- ***Clarify the benefits associated with topsoil.*** If possible, quantify the benefits in terms of costs and savings. Make sure you've canvassed and fully understand all of the benefits yourself, before attempting to convince others, as others may not need to understand the details as long as they understand the overall objectives and benefits.
- ***Face to face education/communication is best*** and will not only reinforce written communications but also respond to questions or concerns. For example, you might start by circulating a Backgrounder, then hold a meeting, or a series of meetings.
    - Sample corporate report http://www.waterbucket.ca/gi/sites/wbcgi/documents/media/275.pdf

- Sample educational powerpoint (See the "Rain and Drainage Simulator" on "Sustainability in My Backyard" – an educational resource from the City of Surrey at http://sustainabilityinmybackyard.ca/)

REGULATIONS

Bylaws and Permitting Systems

Local governments need to plan for how they are going to enforce bylaw requirements. An education and outreach program that communicates topsoil benefits effectively will inspire change and long-term compliance; a regulatory underpinning provides a backbone.

Note that all regulatory approaches will necessarily be subject to detailed engineering that addresses suitability and feasibility of topsoil objectives.

One approach for accomplishing topsoil objectives is to employ the regulatory mechanism of a development permit.[8] Design guidelines are stipulated and frame specific permit requirements. One disadvantage to using a development permit system as the sole mechanism for achieving topsoil objectives is that while non-compliance may be enforced at the outset through non-issuance of the permit, action later entails civil court action, which is unwieldy.

A further approach is to incorporate objectives as requirements into a Subdivision Standards Bylaw.[9] However, this approach has some of the disadvantages of a development permit system, in that its focus is very "front end" biased.

Another approach is to use a regulatory tool such as an Environmental Bylaw[10] or a Soil Permit Bylaw,[11] with appropriate enforcement and penalty provisions built in to address non-compliance. For example, a bylaw might stipulate that a single family home must obtain a soil permit to move greater than 18 cubic metres of soil on or off the property. The first option to explore is conservation of soil, but that is not always feasible. A bylaw might address management or storage options for good topsoil that is scraped off as part of an excavation, or consider a bonus if it is provided. The bylaw might also stipulate requirements with respect to controlling sediment and erosion.[12] Forms and flyers may facilitate communication of very specific requirements - whether for individual property owners or more sophisticated developers. Permit requirements and consequences (fines, etc.) for non-compliance can all be stipulated in the bylaw.

Note that a permitting system may create a fee revenue opportunity[13] for a municipality, which may assist in partially offsetting the costs of staff bylaw inspection, compliance and enforcement activities. The latter may be carried out by building inspection staff, environmental staff, or other designated or bylaw enforcement officers.

North Vancouver is currently investigating options for placing topsoil requirements on redevelopment applications.

Finally, some municipalities may find it helpful to use *Land Title Act* conservation covenants[14] registered against the title to properties to ensure owners of land are bound to maintain topsoil presence, standards and effective drainage performance in perpetuity.

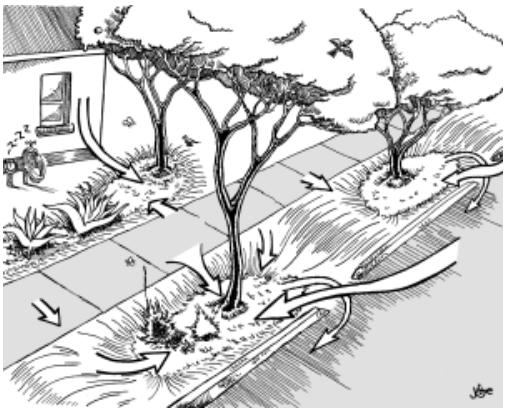
Financial Security – Give the regulation teeth

Taking financial security is a key element to securing performance. Security may be taken by a local government further to the authority of a bylaw[15] or further to terms provided in a contract between a developer and a builder. At least one developer has realized it serves their company's best interests (increased value and lowered unpredictable costs) to take security in an amount equal to 4-5 times the cost of the soil. This developer also documents its „contractor expectations', including soil specifications, to all builders that work with the developer, and the developer also regularly undertakes compliance activities on the development site.

Performance Standards

Local governments need to identify[16] what constitutes acceptable performance for release of financial security. Issues that need policy/management include:

- Responsibility for placement on-lot and off-lot;
- Site grading;
- Quality of topsoil – sourcing, grade, certification, evaluation of native soil or soil remediation;
- Protection of topsoil to prevent compaction until construction is completed.



Our accompanying **Technical Primer** provides more detailed considerations regarding performance and other considerations.

A need exists to ensure that project designs as built meet the stipulated standard. Many municipalities find that it helps to have a bylaw that places the responsibility on the developer's Engineer of Record or Qualified Professional, to be accountable for professionally certifying that the project's performance will achieve the goals and objectives set out in the performance standard.[17]

EXTERNAL COLLABORATIONS

Educate and/or Collaborate with Consulting, Development and Building Professionals

Because a range of people are engaged in planning and working on the land base, it becomes important to communicate with stakeholders and to establish joint expectations. This group includes land or home owners, developers, builders and the full suite of consulting professionals.

Be clear: identify acceptable minimum standards and methodologies for design and installation, and communicate regulations and policies, together with the objectives and benefits to be gained from the program, to all affected or interested parties.

Solicit ideas: listen to ideas and concerns and incorporate them into the plan.

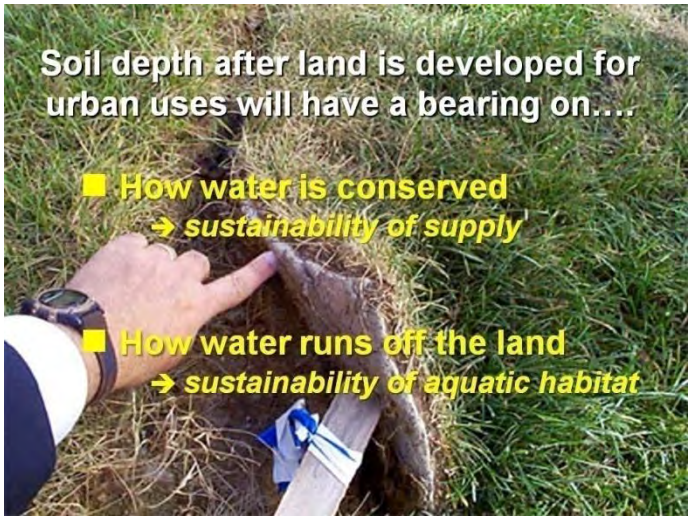
Through targeted presentations and municipal examples, educate and train consultants with information that is consistent with municipal expectations.

Communicate with Neighbours and Home Owners

Experience has confirmed that communication to the public of topsoil requirements may help to advance achievement of the objective and reinforce compliance efforts, thus reducing the need for enforcement activities. Engaging more people means more eyes are able to observe neighbourhood activity.

Strategies for public communication might include signage, education and other strategies:

- Posting signs with pictures depicting the objective and benefits to be derived;
- Posting contact phone numbers at which inspectors can be reached;
- Engaging local environmental groups;
- Informing and educating home owners about onsite rainwater management and water conservation, and how topsoil fits into that context. Understanding will build support for long term maintenance (See the "Rain and Drainage Simulator" on "Sustainability in My Backyard" – an educational resource from the City of Surrey at http://sustainabilityinmybackyard.ca/).



Note that providing ongoing notification of the bylaw and accompanying bylaw enforcement activities will reinforce the message that your municipality is committed to implementation and to achievement of the bylaw's objectives.

---

[1] "Topsoil" has multiple technical and lay definitions and names. For purposes here, we are referring to

[2] Topsoil is but one of many considerations in a source control strategy: elevations, permeable surface area, tree cover, etc. are other considerations.

[3] Benefit is positively correlated with the percentage of permeable surface. (e.g. If the topsoil only covers a surface area of one square meter and the rest of the site is impermeable, little is accomplished.)

[4] Healthy (topsoiled) lawns are one means to achieve absorbency. Landscaping with native, drought-resistant species (xeriscaping) or building rock and rain gardens are other low impact strategies.

[5] Redevelopment presents an important moment/opportunity to improve the performance of the existing developed land base which, in some communities, constitutes a large percentage of overall community land base. E.g. in the District of North Vancouver it is a critical component: 85% of the overall land base is currently developed as single-family residential.

[6] For example, in Metro Vancouver, the Greater Vancouver Sewerage and Drainage District and its members submit a Liquid Waste Management Plan (and updates thereto) to the Minister of Environment further to section 24 of the *Environmental Management Act*. Once approved, such Plans become part of local liquid waste regulation and actually replace regulation by the *Municipal Sewage Regulation*.

[7] Section 884(2) of the *Local Government Act* requires that all municipal bylaws adopted or works undertaken by a Council after an OCP must be consistent with the relevant plan.

[8] See section 920 of the *Local Government Act* for details about development permits and guidelines.

[9] See section 938 of *the Local Government Act* for local government authority to prescribe standards in a bylaw relating to subdivision servicing.

[10] For municipal authority re: the environment, see sections 8 and 9 of the *Community Charter* together with the *Spheres of Concurrent Jurisdiction – Environment and Wildlife Regulation*, BC Reg. 144/2004

[11] See sections 8 and 9 of the *Community Charter* regarding fundamental powers to make bylaws in relation to soil removal and deposit. Section 195 of the *Community Charter* provides authority to charge fees in relation to soil removal or deposit.

[12] Sediment and erosion control bylaws are authorized pursuant to section 907 of the *Local Government Act* which addresses authority to regulate runoff and stormwater management. Section 909 is also relevant, as it enables local governments to regulate landscaping to preserve, protect or restore the natural environment. In addition, section 69 of the *Community Charter* provides municipalities with specific authority in relation to drainage.

[13] For example, the District of North Vancouver charges $171 for residential soil permits and $351 for commercial-industrial ones. Charging municipal fees is authorized by section 194 of the *Community Charter*.

[14] See section 219 of the *Land Title Act*. The opportunity to impose a covenant may arise as part of a rezoning approval, for example.

[15] Section 8(8) of the *Community Charter* provides that the power to "regulate, prohibit and impose requirements" under section 8 (fundamental powers) includes the power to"… require persons to do things with their property, to do things at their expense and to provide security for fulfilling a requirement."

[16] Note that most municipalities only reference MMCD standards for municipal land (e.g. sidewalk to curb) and not for on-lot land; however, these standards could be extended to other applications.

[17] The authority of municipalities to rely on the opinions of qualified professionals in the building permit process is set out in section 55 of the *Community Charter*.

West Coast Environmental Law Research Foundation is grateful to the following foundations for their *generous financial support of this project:*

THE LAW FOUNDATION OF BRITISH COLUMBIA

THE REAL ESTATE FOUNDATION OF BRITISH COLUMBIA

The Bullitt Foundation

Green Infrastructure Partnership

Topsoil: *Just How Do You* Obtain a Performing Topsoil Layer, to Advance Rainwater Management & Water Conservation Goals?

Technical Primer for Municipal Staff and Designers

February 2010

Topsoil: *Just How Do You* Obtain a Performing Topsoil Layer, to Advance Rainwater Management & Water Conservation Goals?

Technical Primer for Municipal Staff and Designers

Preface

An absorbent topsoil layer has emerged as a fundamental building block for achieving *water sustainability outcomes* through implementation of green infrastructure practices:

- **Rainwater Management:**
  An absorbent topsoil layer serves as a sponge when it is raining, results in healthier landscaping, and contributes to *sustainability of aquatic habitat*.
- **Water Conservation:**
  Well-rooted landscaping then requires less irrigation water, stays green longer during a drought, and contributes to *sustainability of water supply*.

In collaboration with three municipalities (City of Surrey, City of Courtenay and District of North Vancouver) that have pioneered absorbent topsoil requirements, the Green Infrastructure Partnership has developed two primers to assist local government staff and designers: this one deals with *Technical* aspects; while the other is a *Law and Policy Primer.*

The co-leads for this initiative were **Susan Rutherford** (Staff Counsel with West Coast Environmental Law Research Foundation) and **Rémi Dubé** (Acting Manager for Development Services, City of Surrey). Their efforts are greatly appreciated.

Raymond Fung, P.Eng., Chair
Green Infrastructure Partnership
February 2010

Green Infrastructure Partnership

Topsoil: *Just How Do You* Obtain a Performing Topsoil Layer, to Advance Rainwater Management and/or Water Conservation Goals?

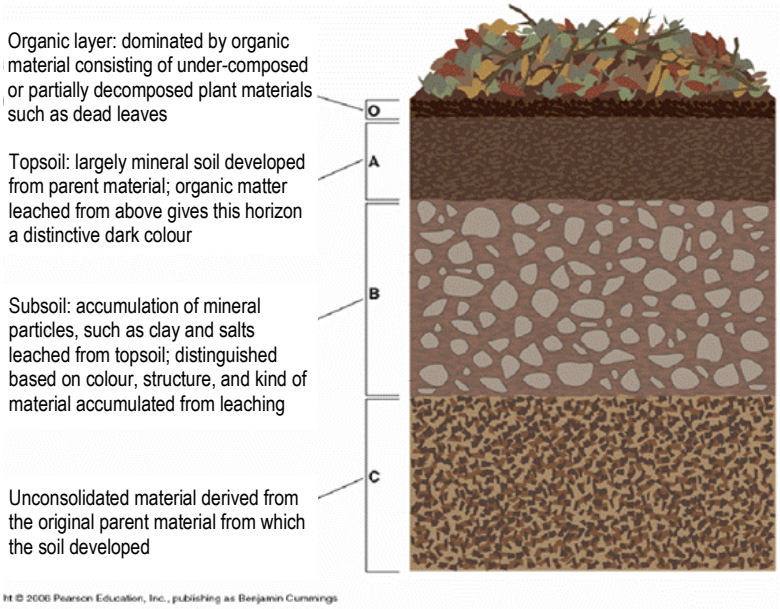
Technical Primer for Municipal Staff and Designers[*]

Introduction: Topsoil Implementation Procedures

Development changes the characteristics of a watershed. Everyone involved in the development process has the duty to take reasonable steps to reduce the negative impacts of development. The intent of this checklist is to provide a common ground for approving agencies and designers to produce minimum acceptable performance standards.

As part of a Green Infrastructure Partnership Topsoil Primer set that presents examples of acceptable mitigative measures and Best Management Practices (BMP's), this Technical Primer checklist outlines some of the field characteristics of the implementation of a topsoil objective. This document provides information that can be incorporated into design guidelines and specifications to define what is acceptable.

This Technical Primer provides design steps and implementation issues to provide an "on the ground" low impact development methodology. It supplements common sense and appropriate design procedures which always apply when designing and implementing site features.



Application /Suitability

Improving or adding a performing topsoil layer to a site, as a BMP for stormwater/rainwater management and water conservation, is one of the simplest and easiest of the BMPs to implement. It treats rainwater runoff through detention, exfiltration, and slowing down of flows.

[*] **These Green Infrastructure Partnership (GIP) Primers** are built on the experience the GIP has gained, since 2004, in promoting green infrastructure approaches to development in British Columbia, through series such as its "Showcasing Innovation – Celebrating Green Infrastructure" series. In spring 2009, following the Surrey Water Balance Model Forum, the GIP Steering Committee and other Forum organizers realized there could be a benefit to providing municipal staff and the professional design community with a succinct statement of all of the legal, policy and technical "essential elements" necessary to successfully implement a specific green infrastructure objective. The Topsoil Primer set is the fruit of that idea, and the first in what the GIP hopes will become a series of Primers. The Primers are premised upon the theme of *shared responsibility* – essentially recognizing that the responsibility for ensuring that development is sustainable rests with *all* who make decisions or take actions that impact the development process, from elected representatives, to staff and consulting professionals. The GIP thanks the City of Surrey, the City of Courtenay and the District of North Vancouver for their support and sharing of lessons learned in preparing the Topsoil Primer set.

Paying simple care to some of the following details will optimize the benefits and the long term performance and acceptability of this form of water management.

This primer provides general technical steps to implement topsoil as a stormwater/rainwater BMP. Law and policy implementation issues are addressed in the accompanying **Law and Policy Primer**. The main technical considerations are application and suitability, proper sizing and design, **materials and placement, and inspection and quality control**. The main difference between traditional landscaping and topsoil as a BMP is the consideration by the designer, owners and installers of the importance of quality control and proper installation.

Areas covered by existing tree canopy and undisturbed areas maintain the existing infiltration and storage qualities of a site. While undisturbed areas could benefit from additional topsoil to increase storage, the designer will need to balance the suitability of disturbing areas compared to the potential benefits. Tree cover provides another form of BMP that is not addressed in this technical primer but the benefits of tree cover are significant and the designers are encouraged to maintain or increase canopy cover where feasible.

Determining Existing Conditions:

Total Site Area	A_{Total} m^2
Undisturbed areas, not receiving flows from impervious areas	B m^2
Net Design Area	$A_{Net} = A_{Tota} - B$
Existing topsoil Depth	d1 mm
Pervious Landscape Area (Excludes B)	Pv m^2
Impervious Area draining to Pervious Landscape (Pv)	Ip m^2
Pervious ratio**	P1= Pv/ A_{Net}
Impervious ratio	I1= Ip/ A_{Net}

** Pervious surfaces able to infiltrate water into the subsoil that will always remain pervious, discount areas that may be paved or built upon in the future.

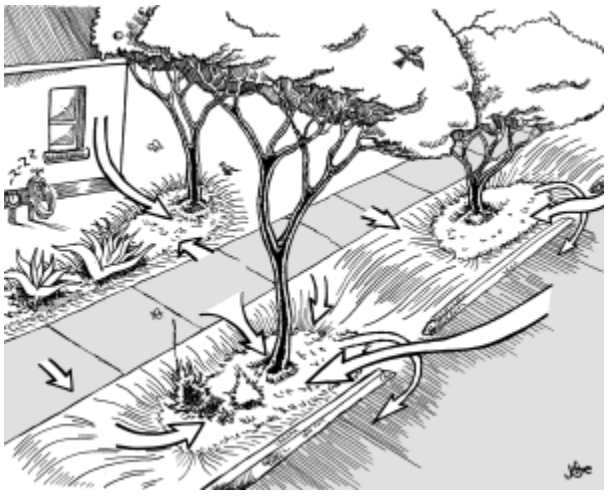
Enhanced Topsoil Depth d2 = d1 + (d1 x I1/P1) mm

(d2 is depth required to match existing volume and infiltration)

Sizing and Design:

Topsoil, as a BMP, is forgiving in its design with failsafe performance if basic sizing guidelines are observed.
Sizing is limited to the available pervious surfaces of the site, so the site layout should maximize the site areas that can be covered with topsoil.

- Maximize topsoil areas as part of site design.
- Pervious areas that do not receive water from impervious areas should be subtracted from the total site area when determining the topsoil depth.
- Pervious areas that remain undisturbed by the development can be subtracted from the total site area.



- Design topsoil areas to accept runoff from impervious areas.
- Design impervious areas to drain to topsoil and pervious areas.
- Pervious areas receiving runoff should be 20% or more the size of the impervious area draining to it.
- Flow velocity of water entering topsoil areas should be less than 0.3 m/s for planters and 1.0 m/s for turfed areas (control tributary surface types, area and slopes to reduce flow velocities).
- Topsoil areas should be gently sloping (2%) or dished for ponding.
- Ponding time should be less than 48 hours.
- Provide overflows and/or under drains to maintain desired performance.
- Ponding depth should be limited to 150 mm.
- Overflow should be designed so as to allow safe conveyance from ponded areas after large rain events.
- Avoid concentrating flows to landscaped areas unless inlets are well designed to manage flow velocities, debris and sediments.
- Provide 150mm elevation difference from pavement to landscaped areas to allow for sediment build-up and plant growth at the interface.
- Do the topsoil placement and planters meet the residents' expectations for functionality and aesthetics?
- Minimum topsoil depth should be 150 mm.
- Maximum topsoil depth should be 450 mm.
- Where the topsoil depth needed is greater than 450 mm, additional sustainability measures may be required (e.g. detention, infiltration galleries, green roofs, tree canopy, rain gardens, and pervious pavements).
- Does the subsoil infiltration rate require the addition of sub-drains to provide adequate drainage? (infiltration < 0.5 mm/Hr)
- Do subsoil infiltration rate and available infiltration area allow for a reduction in the amount of topsoil required? (Infiltration > 75 mm/Hr)

Material Products and Placement

Proper selection and preparation of materials is essential for the successful implementation of the Topsoil BMP. Topsoil contains organic material subject to variability between suppliers and production methods. A proper balance of quality control for hydraulic performance, structural stability and plant support is critical.

- First, identify if the topsoiled/landscaped area is a low traffic lawn, high traffic lawn, or planters, shrub or groundcover.
- Second, once the use is determined, ensure the topsoil meets the specifications appropriate to that use, and amend soil as necessary:
  - for lawn areas, topsoil should meet or exceed the MMCD specification for growing medium with the organic content amended to be 8%, and
  - for planters, shrub and groundcover areas, topsoil should meet the MMCD specification for growing medium with organic content of 8 to15%.

- Protect existing subsoil and placed topsoil from compaction during construction.
- Rip or till subsoil prior to placing topsoil to a depth of 150 mm (do not use heavy machinery).

- Till the subsoil and topsoil to transition soil textures (this avoids potential barriers to water flow between the soil layers).
- Cover the topsoil with vegetative cover or mulch to improve infiltration properties, reducing crusting and erosion.
- Provide effective erosion control of topsoil and upstream areas to protect from excess sediment onto the topsoil areas.
- Transport, store and place topsoil in a manner that preserves the desired structural qualities of the materials.

Inspection and Quality Control

Well designed and placed topsoil is effective and resilient. Quality control and follow-up are crucial to the long-term success of this measure. Designers should ensure that mechanisms are in place through municipal or existing inspection requirements as described in the accompanying **Law and Policy Primer**, or determine if additional requirements need to be set up as part of the individual project.

Jordmån: Kulturjordmån Foto: Åke Nilsson

- Ensure your topsoil supplier is familiar with the intended objectives and structural requirements of the soil in all aspects of the process: manufacture, storage, shipping, and placement.
- Ensure installation crews are aware of the importance of proper placement techniques and grading.
- Ensure the site construction supervisor is aware of the function of the topsoil and has quality assurance procedures in place.
- Topsoil storage, handling and movement must protect the materials, structural integrity, and quality and prevent contamination that may affect the materials performance.
- Topsoil, once placed, should be protected from compaction by other trades or construction practices. Alternatively, measures should be put in place to remediate compaction after all of the construction work has been completed.
- Where topsoil is placed as a requirement for sustainability, consider how its properties will be protected over the long term. (Consider the use of restrictive covenants, education programs, and signage. For more details, see the **Law and Policy Primer**.)
- Procedure should be put in place to confirm the final topsoil depth meets or exceeds required depth during installation, with measures in place to certify the correct placement.
- Follow-up inspection procedures should be implemented to allow for certification of the installation, including as-built drawings and material specifications used.
- Does the landscaping require special maintenance and long term monitoring? Are the requirements set out in a maintenance manual?
- Confirm that inlet and outlets are working and will remain functional and sustainable over the long term.
- Have you taken financial security to ensure the proper long term functioning of this BMP?

Okanagan Basin
WATER BOARD
Science. Management. Governance.

1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 6.2

File No. 0550.04

To: Board of Directors

From: Nelson R. Jatel, Water Stewardship Director

Date: June 28, 2010

Subject: Water Stewardship Director's Report - June

This memo provides an update on some of the ongoing activities of the OBWB's Water Management Program.

1.0 WATER STEWARDSHIP COUNCIL, TECHNICAL ADVISORY COMMITTEE

A Council report highlighting the regular June meeting is attached. The June council meeting had Dr. James Stronach of Hay and Co. Consultants present on the subject of Okanagan Lake Limnology. The Okanagan Lake Limnology model has been developed with support from the City of Kelowna.

The water economics presentations made during the May Council meetings by professors Griffin, Bjornlund and Janmaat will be made available through the OBWB website.

As usual there will be no Council meetings over the summer. The next Council meeting is scheduled to be in Kelowna (4087 Casorso Rd) on September 9th from 12:30 – 4:00pm.

Water Stewardship Council membership

September marks the final month of the current Council's 18 month term. Attached is a recommended list of organizations for Board approval as members for the 2010 – 2012 Council term. Upon Board approval, letters will be sent to the approved organizations requesting that a member and an alternate be appointed for the following 18 month term (September 2010 to March 31, 2012).

2.0 PROJECT UPDATES

2.1. STREAMLINED WATER USE REPORTING TOOL

The Streamlined Water User Reporting Tool (SWURT) – Okanagan Pilot project is continuing to move ahead smoothly under the direction of the steering committee co-chaired by Dr. Wenda Mason and Mr. Nelson Jatel and under the development by our consultants, Spot Solutions Inc.

The SWURT prototype was completed in June and the final recommendations from Okanagan water purveyors, the Ministry of Community and Rural Affairs, and the Ministry of Environment staff are being integrated in the final prototype (see Figure 1).

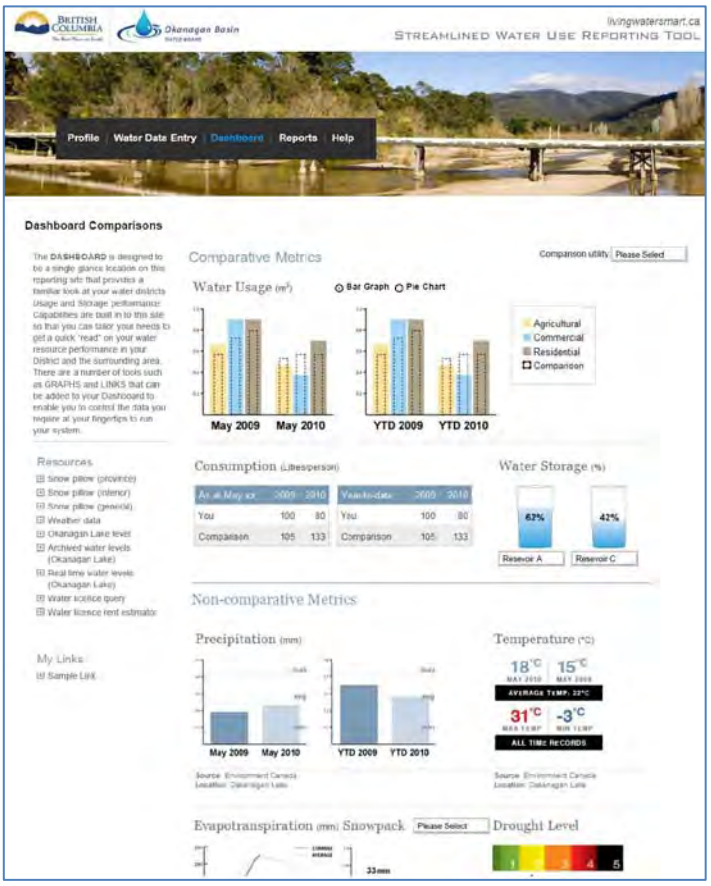


Figure 1. Screen shot of SWURT dash board

The deliverables for Phase I included: (1) a full reporting tool prototype that is easy to use and meets the Provincial data needs as well as the OBWB's supply and demand modeling needs; and (2) a design/build project plan to be implemented in the build-out of the web-based reporting tool in Phase II.

The Project steering committee will be reviewing the proposed work plan from Spot Solutions for Phase II of the project – the development of a fully functional reporting website.

This web-based reporting tool project is a partnership between the OBWB and senior levels of government to record monthly water use by large volume water users (surface and groundwater) in the Okanagan watershed. This information is critically important to support drought planning and provide improved supply and demand modeling for the Basin.

2.2. Phase 1 Okanagan Remote Sensing Project: Scoping Document and Project Charter

In partnership with the North Central Washington Resource Conservation and Development Council (RC&D) the report: ***Phase 1 Okanagan Remote Sensing Project: Scoping document and Project Charter*** was completed in June.

Highlights from the report identify that there are several potential applications of remotely-sensed RS data in the Okanagan/Okanogan River Basin. By incorporating RS data, hydrological models used to support water management in the Basin can be improved, leading to more effective water management that will benefit both Canada and the US. The report outlines a work plan program to:

- Make use of remotely-sensed data to improve the Okanagan Basin Hydrology Model;
- Expand its domain to include the US portion of the Basin;
- Expand the Okanagan Water Demand Model and the Okanagan Basin Water Accounting Model to include the US portion of the Basin; and
- Develop and deliver a communication and outreach program to convey the results of the results of the work to stakeholders, First Nations, and the public.

In addition to completing the scoping report, the collaborative partnership submit through the RC&D a proposal to NASA's Research Opportunities in Space and Earth Sciences (ROSES) grant program. The project titled, ***Improving Water Supply Modeling in an International Semi-arid Watershed:***

Development of a New Evolutionary Multi-Sensor Data Fusion Algorithms to Enhance Water Equivalence Data for Snowpack Model Estimate Inputs, was submitted to the Terrestrial hydrology funding category. The objectives of the proposed project are: to develop and validate a data fusion and assimilation methodology through the use of multiple satellite-based sensors, meteorology stations, weather predictions, a snow-based mass and energy balance model, and land surface characteristics to effectively downscale data to snow water equivalent (SWE) product that can be applied at a basin-scale; and to use the remotely-sensed SWE data to refine the existing Okanagan Basin Hydrology Model as a long term planning tool for water resource management in the Okanogan/Okanagan Basin. Twelve letters of support were received for the proposal submission and included: Environment Canada, Upper Columbia Salmon Recovery Board, Okanogan Conservation District, Natural Resources Conservation Service, North Central Washington Resource Conservation & Development, International Osoyoos Lake Board of Control, United States Department of the Interior, The Nature Conservancy, Upper Columbia Regional Fisheries Enhancement Group, Trout Unlimited and the UBC Okanagan Sustainability Institute. The NASA selection committee will be awarding the successful grant recipients in the fall 2010.

A second proposal is being prepared for the ROSES Climate and Biological Response fund and will be submitted by the collaborative partnership on July 16th.

Water Stewardship Council Membership Proposal

18 Month Term: September 2010 – February 2012

Staff Recommendations for Water Stewardship membership[1] for the upcoming term:

- Interior Health Authority
- UBC Okanagan
- Okanagan Nation Alliance
- Okanagan College
- Okanagan Collaborative Conservation Program
- BC Fruit Growers Association
- Environment Canada - Pacific and Yukon Region
- BC Agriculture Council
- OCEOLA Fish and Game Club / Kelowna Fish and Game Club
- Ministry of Environment, Water Stewardship Division
- Agriculture and Agri-Food Canada (Regional Water Resources)
- BC Groundwater Association
- Canadian Water Resource Association
- BC Cattlemen's Association
- Water Supply Association
- Okanagan Chamber of Commerce
- Ministry of Environment - Fish and Wildlife Science
- Osoyoos Lake Water Quality Society
- Environment Canada - Pacific and Yukon Region
- Agriculture and Agri-Food Canada (PARC / PFRA)
- Regional District of North Okanagan
- Regional District of Central Okanagan
- Regional District of Okanagan-Similkameen
- Shuswap Okanagan Forestry Association
- Ministry of Agriculture and Lands
- City of Kelowna Water program

[1] Membership is available to Board approved organizations and is not granted to any given individual.

Water Stewardship Council

Technical Advisory Committee of the Okanagan Basin Water Board

Council Members (2009-10):

o Interior Health	**Rob Birtles**
o UBC Okanagan	**Bernie Bauer (chair)**
o Okanagan Collaborative Conservation Program	**Carolina Restrepo-Tamayo**
o BC Fruit Growers Association	**Lorraine Bennest**
o Environment Canada	**Alan Boreham/ Daniel Millar**
o Okanagan Nation Alliance	**Gwen Bridge/ Howie Wright**
o BC Agriculture Council	**Hans Buchler**
o MOE, Water Stewardship Division	**Ken Cunningham**
o OCEOLA Fish and Game Club	**Lorne Davies / Aron Chatten**
o Agriculture and Agri-Food Canada	**Doug Edwards / Kirby Rietze**
o BC Groundwater Association	**Doug Geller**
o Canadian Water Resource Association	**Brian Guy**
o BC Cattlemen's Association	**Lee Hesketh**
o Water Supply Association	**Bob Hrasko**
o Regional District of North Okanagan	**Anna Page / Anthony Kittel**
o Community Futures	**Don Main**
o MOE - Fish and Wildlife Science	**Steve Matthews**
o Osoyoos Lake Water Quality Society	**Mark McKenney**
o Agriculture Canada PARC / PFRA	**Denise Neilsen**
o Urban Development Institute	**Bal Poonian**
o CORD Environmental Advisory Committee	**Chris Radford**
o Shuswap Okanagan Forestry Association	**Kerry Rouck**
o Regional District of Okanagan-Similkameen	**Jillian Tamblyn**
o Ministry of Agriculture and Lands	**Ted van der Gulik (vice-chair)**
o City of Kelowna Water Conservation program	**Mark Watt / Don Degen**
o Okanagan College	**Douglas MacLeod**

Regular Monthly Meeting Highlights – June 2010

Excerpts from Council Member Reports:*

- The Water Supply Association of B.C. is concerned about the request from mudboggers to have access to their own crown land for their activities.
- BC Agriculture Council has provided input to the Water Act Modernization process and is opposing the commodification of water and water markets.
- The Ministry of Environment participated in the OBWB's Drought Webinar yesterday and reported that it has no immediate concerns around water levels this year. Work is continuing with the OWSC's subcommittee, looking at groundwater and observation wells in the Okanagan Basin.
- The Canadian government is following up on the Copenhagen climate change meetings as part of a global effort to address the issue.
- B.C. Ministry of Agriculture is looking to implement the Okanagan Irrigation Management Program in various Okanagan communities, and has funding for two years.
- Interior Health is developing a water quality program that will be available on line.
- Hydrologic risk assessments have been done in Peachland and Trepanier, looking at the effects of Mountain Pine Beetle and the risk on drinking water and fish. Similar work will be done at Lambly Creek and Duteau.
- Vernon recently held an Environment Week and gave away rain barrels and low drip irrigation systems.
- Ministry of Environment is pleased with recent precipitation in the Okanagan but is not walking away from its drought planning. As part of its drought plan, the ministry is developing a stream list, looking at water needs and identifying criteria to move from one drought level to another.
- The International ***Osoyoos Lake*** Board of Control has lifted the drought declaration on Osoyoos Lake thanks to recent rains.
- The City of Kelowna has been working with the Kelowna Joint Water Committee to develop common drought response criteria. The city has also developed a landscape irrigation guideline document that is now available.
- An advisory committee on B.C.'s Water Science Strategy is developing a symposium to be held Aug. 30 to Sept. 1 at UBC-O. The purpose is to determine how to best translate scientific and traditional ecology knowledge through policy.

* For full report summary see attached Council Meeting Minutes

Membership
The Okanagan Water Stewardship Council is a broad-based advisory body, representing a range of water stakeholder groups and local sources of technical expertise. Council members are nominated for 18-month terms by their respective organizations, and these nominations are ratified by the OBWB.

For more information contact: Nelson Jatel, Water Stewardship Director
nelson.jatel@obwb.ca
(250) 469-6295

OKANAGAN WATER STEWARDSHIP COUNCIL

A Technical Advisory Body to the Okanagan Basin Water Board

MINUTES OF A MEETING HELD ON THURSDAY, JUNE 10, 2010, AT THE KELOWNA AND DISTRICT FISH AND GAME CLUBHOUSE, 4087 CASORSO ROAD, KELOWNA, BC

COUNCIL MEMBERS:

Present

UBC Okanagan	Bernie Bauer, Chair
Ministry of Agriculture and Lands	Ted van der Gulik, Vice Chair
Agriculture & Agri-Food Canada, Research Branch	Doug Edwards
BC Agriculture Council	Hans Buchler
BC Cattlemen's Association	Lee Hesketh
BC Fruit Growers Association	Lorraine Bennest
City of Kelowna	Mark Watt
Environment Canada – Pacific & Yukon Region	Dan Millar
Interior Health Authority	Rob Birtles
Interior Health Authority	Bryn Lord
Ministry of Environment, Fish and Wildlife Science	Steve Matthews
Oceola Fish and Game Club	Lorne Davies
Okanagan Collaborative Conservation Program	Carolina Restrepo-Tamayo
Regional District North Okanagan	Laura Frank
Water Supply Association of BC	Bob Hrasko

Regrets

Agriculture & Agri-Food Canada,Research Branch	Denise Neilsen
BC Ground Water Association	Doug Geller
Canadian Water Resources Association	Brian Guy
Community Futures	Don Main
Ministry of Environment, Water Stewardship	Ken Cunningham
Okanagan College	Douglas MacLeod
Okanagan Nation Alliance	Gwen Bridge
Osoyoos Lake Water Quality Society	Mark McKenney
Shuswap Okanagan Forestry Association	Kerry Rouck
Regional District of Central Okanagan	Chris Radford
Regional District of Okanagan-Similkameen	Jillian Tamblyn
Urban Development Institute	Bal Poonian

STAFF:

OBWB, Executive Director	Anna Warwick Sears
OBWB, Water Stewardship Director	Nelson Jatel
OBWB, Office and Grants Administrator	Genevieve Dunbar
OBWB, Communications and Research Coordinator	Corinne Jackson
OBWB, Outreach and Education Assist./O&G (mat lv.)	Melissa Teche

GUESTS:

Hay and Co. Consultants	James Stronach
Kelowna Capital News	Judie Steeves
Ministry of Environment, OWSC Source Protection Cttee.	Solvej Patschke
Ministry of Environment	Skye Thomson
Ministry of Environment	Oleg Ivanov
UBC Okanagan	Tricia Brett

1. CALL MEETING TO ORDER

Chair Bauer called the meeting to order at 1:02 pm and welcomed members and guests.

2. APPROVAL OF AGENDA

Amend to include 7. 5 – Presentation by Dr. Anna Warwick Sears and Mr. Ted van der Gulik regarding their water policy tour of Australia.

Moved by Doug Edwards **Seconded by Hans Buchler**

"That the agenda for the June 10, 2010 meeting of the Okanagan Water Stewardship Council be approved as amended."

CARRIED

3. ADOPTION OF MINUTES

3.1 Minutes of a regular meeting of the Okanagan Water Stewardship Council held May 13, 2010, at Kelowna and District Fish and Game Club clubhouse, Kelowna

Amendments: A small amendment to the minutes was suggested and incorporated.

Moved by Carolina Restrepo-Tamayo **Seconded by Ted van der Gulik**

"That the minutes from the March 11, 2010 meeting of the Okanagan Water Stewardship Council be approved as amended."

CARRIED

4. BOARD REPORT

Dr. Warwick Sears reported on the June 1, 2010 Okanagan Basin Water Board meeting, noting that it included a discussion around her tour of Australia and a presentation by Ms. Restrepo-Tamayo on the Sustainable Planning for Okanagan Environment (SPOKE) web-based tool project which, as a result of some changes, will now be referred to as the Okanagan Conservation Planning (OKCP) web tool.

The board approved sewerage grants for wastewater treatment plants in Vernon, Penticton and OK Falls to improve water quality treatment in these communities.

Also, the board voted to send a letter to the province voicing its concerns around the sale of reservoir lots. The moratorium on the sale of the lots expires this summer, noted Dr. Warwick Sears. The issue has received a lot of attention in Lake Country in particular, with cabin owners supporting the sale and the district voicing concern around the potential health risks to its drinking water supply.

In response to questions about studies being done on the lots, Dr. Warwick Sears noted that the Okanagan Water Supply and Demand study emphasizes the importance of the reservoirs to meet storage needs and support environmental flows for aquatic habitat. Additional hydrologic studies are also being done on various reservoirs, she added.

5. ROUND TABLE – MEMBER UPDATES

Council members provided an update on their organization's activities.

- Mr. Hrasko: The Water Supply Association (WSA) of B.C. is concerned about the request from mudboggers to acquire a crown land tenure for their activities. The WSA is also looking at this

year's reservoirs. Some are in better shape than others, and hopefully the drought we were all fearful of will not occur this year.

- Mr. Buchler: BC Agriculture Council has provided input to the Water Act Modernization process and is opposing the commodification of water and Water Markets.
- Mr. Ivanov: The Ministry of Environment participated in the OBWB's Drought Webinar yesterday and reported that it has no immediate concerns around water levels this year. Work is continuing with the OWSC's subcommittee that is looking at groundwater and observation wells in the Okanagan Basin.
- Mr. Edwards: The Canadian government is following up on the Copenhagen climate change meetings as part of a global effort to address the issue. The impact on agriculture is being included as a matter that needs to be addressed. The government is looking at proposals and will be looking for input from external sources, for example the B.C. Ministry of Agriculture and Lands.
- Mr. van der Gulik: B.C. Ministry of Agriculture is looking to implement the Okanagan Irrigation Management Program in various Okanagan communities, and has funding for two years. South East Kelowna Irrigation District was consulting with irrigators about using the tool, which is important since it's not the people who developed the tool but the people who will be using it who see the value. The tool allows one to record their water use and their allocation to determine how much is left and to help plan what they should use, considering climate, soil and crop type.
- Ms. Restrepo-Tamayo: The Okanagan Collaborative Conservation Program held its AGM May 12. The group has developed an Okanagan Conservation Planning (OKCP) website which shows conservation efforts in the Okanagan, as well as Foreshore Inventory Mapping results and the wildlife Connectivity Corridor. A land use planning document will also be provided on the site. It can be viewed at www.okcp.ca.
- Mr. Birtles: Interior Health is working with small water systems to help them improve drinking water treatment and as a result, remove the standing "Boil Water Advisories" that exist for them.
- Ms. Patschke: Hydrologic risk assessments have been done in Peachland and Trepanier, looking at the effects of Mountain Pine Beetle and the risk on drinking water and fish. Similar work will be done at Lambly Creek and Duteau Creek.
- Ms. Jackson: The Okanagan WaterWise team has been meeting with staff who are working in water and public education in various Okanagan communities, gathering feedback on the WaterWise Outreach Strategy and Action Plan and determining partnership opportunities. The team attended the Mayor's Environmental Expo in Kelowna and had children decorate one-litre bottles to be placed, with adult help, in the back of an old toilet to conserve water. The activity was well-received. The team is looking at other ways to spread the WaterWise message this summer.
- Ms. Dunbar: Water Board staff attended the recent Canadian Environmental Grantmakers' Network (CEGN) conference to further develop OBWB partnerships. The Water Board is in a unique position in that it awards grants and also receives grants. Last week, staff went to Washington State to share information on milfoil control efforts.
- Ms. Frank: Vernon recently held an Environment Week and gave away rainbarrels and low drip irrigation systems. It also hosted a Duteau Creek planning meeting to hep identify areas for remediation projects.
- Ms. Bennest: Thanks to recent rains, those in agriculture are using much less irrigation water than usual.
- Dr. Warwick Sears: Staff have been discussing a request from AM1150 to air a radio talk series on water. The CEGN conference provided an opportunity for the Water Board to promote granting foundations partnering with local government. The Okanagan Water Supply and Demand project team is working on how to improve access to the study's results. The Water Board is also planning its Annual General Meeting, set for Sept. 10th.
- Mr. Matthews: Ministry of Environment is pleased with recent precipitation in the Okanagan but is not walking away from its drought planning. As part of its drought plan, the ministry is developing a stream list, looking at water needs and identifying criteria to move from one drought level to another. Phase 1 of the Okanagan River Restoration project is completed and a ceremony was held June 5 with 100 people in attendance, including Environment Minister Barry Penner and Parliamentary Secretary for Water Allocation John Slater.

- Mr. Millar: The International Osoyoos Lake Board of Control has lifted the drought declaration on Osoyoos Lake thanks to recent rains.
- Mr. Hesketh: The Farmland Riparian Interface Stewardship Program has a small budget, but is still looking to partner with the Environmental Farm Plans on southern interior projects. Mr. Hesketh is a recent member of the Salmon Enhancement and Habitat Advisory Board. Anyone with thoughts or concerns on this issue should contact him.
- Mr. Watt: The City of Kelowna has been working with the Kelowna Joint Water Committee to develop common drought response criteria. The city has also developed a Landscape and Irrigation Standards document that is now available.
- Mr. Davies: The Oceola Fish and Game Club has been doing restoration work along Winfield Creek, as well as work on the Winfield Creek Wildlife Habitat Preserve.
- Dr. Bauer: An advisory committee on B.C.'s Water Science Strategy is developing a symposium to be held Aug. 30 to Sept. 1 concurrently at UBC-O, University of Northern BC and University of Victoria. Parts of the conference will be webcast simultaneously at the three sites. There will be two keynote speakers and a reception. The next day will include a panel discussion and then break-out sessions. The purpose is to determine how to best translate scientific and traditional ecological knowledge through policy. Local organizing committees are being formed and Stewardship Council members are encouraged to get involved.
- Mr. Jatel: The sub-committee looking at the groundwater monitoring project is identifying sensitive aquifers, as well as researching funders and developing a work plan. The need for a technical committee has been identified and we will be looking at this further.

6. PRESENTATIONS

Dr. Jim Stronach, Hay and Company Consultants
Okanagan Lake Limnology – deep lake limnology and foreshore limnology models

Mr. Watt introduced Dr. Stronach, noting his work for the City of Kelowna and its relevance to the Okanagan valley.

Drinking Water Source Protection

Dr. Stronach noted that his work included a source water protection study on Okanagan Lake which resulted in four technical memos: a hazard inventory and review, a review of chemical limnology (observed data – nutrients, contaminants), another which categorized and rated risk, and one that addressed source delineation and pollution transport modelling.

His company, Hayco, prepared a report in 2001 looking at the limnology of Okanagan Lake, including a hindcast look at the 1996 Cryptosporidium outbreak. And then, two years ago, Interior Health – in reviewing the report – suggested additional issues to be addressed using the same modelling. In particular, Interior Health suggested the development of a watershed control-type program, and the study of the costs/risks/benefits associated with source improvement efforts. They also wanted a report to include trends in water quality and pathogen concentrations, and recommendations for protection.

As part of its work, the company recorded depth and temperature. In May 1998, during a windstorm, it was noted that surface currents (carrying contaminants) were heading north, but that at 40 to 50 metres depth it was moving south. At 26 to 30 metres depth water was also noted to be moving up and down, noted Dr. Stronach, adding that the current seems to die down at various depths but it still moves.

In Summerland, district staff were trying to determine the best location for their intake. As such, Hayco looked at the currents, said Dr. Stronach. In response to a question about the modelling and the temperature of effluent being considered, he added the model accounted for this, and the Summerland study determined that there can be concentrations of effluent at various depths which

seemed to indicate that clean intakes as deep as possible are best.

Mr. Watt noted that some of Hayco's work was also undertaken in response to the city's need for information when it received development applications. The city wanted a database to assess applications, but also its own civic developments. Developers were also asked to have some modelling done as part of having an application considered, he added. Such modelling was used for the downtown waterfront and the Kelowna Yacht Club.

In response to questions, Dr. Stronach said that wave action, substance type and weight of it, all need to be considered in determining the impact on water intakes. Also, the north/south movement of water around intakes depends on the depth of the intake, he added.

Some contaminants would settle out with sediment, continued Dr. Stronach, noting that if a contaminant is on the surface it may naturally decay.

Currently, Hayco's research is focussed on looking at risks if an incident were to occur, he added, noting that there is no work being done on climate change and the effects on flow patterns.

7. NEW & UNFINISHED BUSINESS

7.1 Okanagan Water Supply Communication Strategy: Drought-proofing the Okanagan, June webinar highlights

Mr. Jatel provided highlights from the June webinar. He referred to a comment by Alan Chapman, head of B.C.'s River Forecast Centre, that although drought concerns have been downgraded with the wet spring, the province has still not recovered from last year's drought and we're still not out of the woods. This needs to be considered as we move ahead this year.

Mr. Jatel noted that three webinars have been held, linking those with the information on water supply and demand with water managers and users to support management decisions. There has been some interest in seeing the webinars continue, he added.

Mr. Matthews responded that while we are in a wet period, the potential for a dry summer ahead and potential problems is still there and the webinars are a good way to keep water providers and others informed on a regular basis.

The initial target audience when the series began was water managers. If we are looking at keeping a broader audience informed of water supplies, perhaps we need to redevelop the framework to potentially include fisheries and ecological flow concerns, said Mr. Jatel.

7.2 Hydrometric monitoring sub-committee

Mr. Jatel reported that work is continuing on hydrometric monitoring as noted in the Round Table – Member Updates provided earlier in the meeting.

7.3 Project updates: NASA initiative / Streamlined Water Use Reporting Tool (SWURT)

Mr. Jatel noted three projects underway with NASA: 1) a scoping document, exploring the use of satellites to support the Okanagan Water Supply and Demand (OWSD) model; 2) a Terrestrial Hydrology proposal has been submitted, looking at snow water equivalents using satellite data that can be plugged into the OWSD and used in the U.S. and Okanagan, and 3) a climate change project is under development, exploring the use of remote sensing data to expand the demand and supply model into the Similkameen and Okanogon, and turn the OWSD model into a forecasting tool.

A meeting on the NASA project was held in the U.S. two weeks ago, added Mr. Jatel, saying there was great interest and support for the project.

Mr. Jatel provided an update on the SWURT project, explaining how the web-based tool for Okanagan utilities to report water use will replace the annual report they currently provide to the province. Water suppliers have seen a template of the software and seem pleased, he added.

It's anticipated that a final draft of the web tool will be completed by mid-June and the project will be finalized by December.

In response to questions, Mr. Jatel noted that unlicenced groundwater users are also being asked to report their water use, but it is voluntary. Large surface and groundwater users are being asked to report so there is a seamless accounting of water use. The SWURT web-tool is being developed to become a prototype for the province, he added.

7.4 Okanagan Water Supply Communication Strategy: Signage project

Mr. Jatel reported on a request received from Regional District of North Okanagan. The regional district is looking at potential road signage that would indicate current water supply and asked the Water Board if there was anything available. At the same time, the province is developing a drought strategy and Ministry of Environment is interested in this type of signage.

Mr. Jatel invited Stewardship Council members to form a committee to develop signage that can be piloted in the Okanagan. Mr. Birtles volunteered. Dr. Bauer suggested that members of the communications committee might also be a possibility.

Mr. Van der Gulik suggested that the OWSC start a SharePoint site to track all of its projects. It would be a way to monitor progress on various projects. Ministry of Environment has a SharePoint site that has worked well, he added, noting that it has encouraged people who are working on projects that overlap to work together. Dr. Bauer suggested that perhaps this should be put on the agenda for September.

7. 5 Presentation by Anna and Ted regarding trip to Australia

Dr. Warwick Sears reported on her recent two-week water policy tour of Australia, noting the purpose was to examine the Australian experience coming out of a 10 year drought.

Dr. Warwick Sears was accompanied by Jackie Belzile, who is doing her master's thesis on Water Governance and who organized the tour, and Mr. van der Gulik. Meetings were held with research facility e-Water, local farmers, the Murray-Darling Basin Authority, scientists, the federal water minister, irrigators, and industry people.

Dr. Warwick Sears noted that she was astounded by the public investment in water, which is in the billions of dollars.

One major project being conducted in Australia is the Murray-Darling (M-D) Basin Plan. The M-D Basin Authority members are appointed and make recommendations to the federal water minister. If the minister does not accept and move on the recommendations she must justify this. In addition, all states in the M-D area must meet the authority's recommendations.

Decisions are being driven by the water needs of six iconic wetland sites, Dr. Warwick Sears continued. During a water shortage, the first priority is critical human water needs, then planned environmental water, licenced environmental water and irrigation allocations. Environmental need is determined using science, she added.

The Commonwealth Scientific and Industrial Research Organisation and e-Water are doing

modelling for M-D. CSIRO has 400 water staff and a budget of $100 million a year, plus university funding.

Australia is also looking at future climate change impacts and gearing up for it, said Dr. Warwick Sears.

At the state level, they are establishing water trading rules, water sharing plans, economic analyses, and working with irrigation districts to implement water plans. There are some conflicts between state laws that are being resolved, she noted.

Interestingly, there was a tour of a wetland. It had been constructed in such a way that it was losing a lot of water through evaporation, so the operators sold some of their water rights to the federal government – about the same amount it was losing through evaporation. The funds were then used to upgrade the storage area and as a result, they ended up recouping the lost water.

Signs highlighting drought conditions are seen everywhere. And every drop of water is tracked, she added, noting some is lost through evaporation in open channels, but tracking is done to ensure best possible conservation.

Wineries are encouraging grape growers to improve their watering methods and will not buy grapes unless water-saving technology is in place.

In Sydney, the overall strategy that is being adopted is one of: dams + recycling + desalination + water efficiency = water for life. However, the new goal is to avoid water restrictions, added Dr. Warwick Sears. By having conservation measures in place they will have enough water that there will never be a need for water restrictions.

It is understood that if no rain fell in Sydney's catchment area, it would have four years supply, she noted, adding Sydney Water has determined that mandatory restrictions work better than voluntary ones.

People are unsentimental about making tough decisions around water in Australia – and water is universally valued. There is a focus on economic and environmental sustainability, independent, expert-based rule making, water sharing plans for sub-basins, as well as significant investment in science, water infrastructure, excellent data collection and access, and strong efficiency measures.

There are, however, things they have done in Australia that we should avoid here in the Okanagan, added Dr. Warwick Sears. In Australia, there is a lack of transparency with planning, not enough communication with water users, lack of regulation/consistency in water markets, insufficient economic/social analyses, and little help with structural adjustments to communities.

On the other hand, ideas that should be considered here, she added, include ways to reduce water demands in homes, for example with universal metering and ways for users to track their meter readings on the web. There should be local-scale water demand studies, water-sharing (drought) plans, a look at market-based or other reallocation mechanisms, pricing for cost recovery and conservation, and better communication. To expand the supply of the Okanagan, we need to do a better job of protecting and expanding our reservoir storage,

Mr. Van der Gulik noted that he is looking to develop a presentation to be taken around the province that shares what was learned on this policy tour.

8. NEXT MEETINGS

The next meeting of the Okanagan Water Stewardship Council will be held Sept. 9, 2010 at Kelowna and District Fish and Game Club clubhouse.

9. ADJOURNMENT

The meeting was adjourned at 4:39 p.m.

Moved by Bob Hrasko

"That there being no further business, the meeting of the Okanagan Water Stewardship Council of June 10, 2010 be adjourned."

CARRIED

CERTIFIED CORRECT:

_____ Chair

_____ Executive Director

Okanagan Basin
WATER BOARD

1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 6.3.1

File No. 0550.04

To: OBWB Directors

From: Melissa Tesche, Office and Grants Administrator

Date: June 28, 2010

Subject: Milfoil Management Program Updates

In response to board interest in enhancing the tracking and reporting of the milfoil management program, we are investigating the possibilities for updating our systems. Based on this research, we recommend that we upgrade to a GPS/GIS based reporting system be created, with the long term goals to:

- Keep electronic records of pre- and post-treatment conditions and produce reports on areas treated to inform future program decisions and work-planning;
- Use a GPS-based daily work log to track relative effort needed for different growth areas;
- Compile an electronic inventory of all underwater hazards (such as water intakes, sewer outfalls, utility cables, and geothermal systems) in past and present treatment areas to minimize risk of costly accidents with the machines and prepare for eventual staff changeovers when knowledge of existing locations will be lost.

After researching the tracking systems used in other areas including Christina Lake and Idaho and Michigan, we consulted with a Regional District Central Okanagan GIS technician. He recommended that the bulk of the GPS surveying, tracking and reporting be done in-house, by OBWB staff, with initial setup and support from the RDCO GIS department. Should the OBWB require more work than this, RDCO staff may consider a small contract.

OBWB has obtained access to the necessary GIS software for the office and is evaluating handheld GPS options for the milfoil employees. We have obtained several mapping files from the Ministry of Environment that will form the basis of our new system. We are aiming to have the inventory complete by mid-summer and a trial version of the tracking system in place for the fall/winter roto-tilling season.

Staff recommendation: That the OBWB pursue a GIS/GPS based upgrade to the milfoil management program reporting system.

Okanagan Basin WATER BOARD
1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 6.4

File No. 0550.04

To: OBWB Directors

From: Corinne Jackson

Date: June 29, 2010

Subject: Communications and Research Coordinator Report

Time capsule project for OBWB Annual General Meeting

In planning for the Sept. 10, 2010 OBWB Annual General Meeting, staff members have been discussing the idea of a time capsule, celebrating water as part of the activities that day. The project is intended to increase public awareness about water & the OBWB and add an element of fun to the proceedings.

Staff are working out the logistics, including how long the capsule would be buried (possibly 25 years), what type of capsule is needed, where to bury it, and a communication plan to invite members of the public to submit items and for media to attend the event. We are inviting Water Board directors to participate in this project and bring an item to contribute on Sept. 10.

Some of the ideas for items that have been noted include: a vial of water from Okanagan Lake, a copy of the OBWB Annual Report, a copy of the Okanagan Sustainable Water Strategy, newspaper articles related to current water issues, and pictures and written material prepared by children on what they think the Okanagan will look like in 25 years. Another idea is to include the survey results which gauged Okanagan valley residents' understanding of water, conducted as part of the Okanagan WaterWise strategy. Board members are invited to think of items that they would like to include. Perhaps it is a picture of you doing something by water (e.g. fishing, swimming, boating, sitting).

If you have any other ideas on what to include in an OBWB time capsule, we would appreciate hearing your thoughts.

Update on Okanagan WaterWise

The Okanagan WaterWise team has been busy meeting with water conservation and/or water operations staff in communities throughout the valley, asking for their input on the WaterWise Outreach Strategy and Action Plan, and discussing ways to partner.

Since the last board meeting, the team has met with staff at City of Kelowna, City of Penticton, the Townships of Osoyoos and Oliver, and District of Summerland. We are still trying to arrange meetings with Armstrong and Lake Country. So far, there is a recognition of the importance of a valley-wide message on water, and in the smaller communities there is a strong appetite for working together, recognizing that they do not have the capacity that larger communities have to conduct water education and outreach.

Once the Ok WaterWise team has gathered feedback from each of these communities, it will be reviewing the Outreach Strategy and Action Plan and revising it to reflect the information collected (e.g. the importance of considering an older population in outreach materials for Peachland and the South Okanagan, and a recognition of the positive effect water meters has had on water use).

As part of these meetings, the team has been showing the water bottle display banners to determine interest in displaying them in various communities. The feedback has been tremendous. As such, the team has drafted a schedule when the banners will be displayed throughout the Okanagan this summer (e.g. in municipal halls during tax collection time, as well as recreation centres, seniors centres, and shopping malls). The banners also appeared at the District of West Kelowna's RBC branch on June 11, as part of their national RBC's Blue Water Day, again, garnering great interest and discussion.

Photo: Okanagan WaterWise banners on display at RBC Blue Water Day, June 11, 2010.

As part of their event, RBC clients were invited to fill out a skill-testing question regarding the 675 litres of water used each day by the average Okanagan resident and submit it for a chance to win a rain barrel. In addition, Water Board staff encouraged RBC to contact the Okanagan Xeriscape Association, which resulted in their also providing information to the public. RBC also followed up by giving away drought-tolerant plants to its customers.

From a communications perspective, this type of outreach is extremely important and beneficial.

Update on other communication activities

A news release was issued May 27, regarding provincial funding for a basin-wide drought plan for the Okanagan.

On June 3, a news release was issued regarding wastewater treatment grants to the Cities of Vernon and Penticton, and the community of Okanagan Falls.

Included below, please find a listing of recent news clippings regarding the work of the Okanagan Basin Water Board and presentations by OBWB staff.

Summary of Recent Media

June 3 "Province chips in for dry-weather contingency plan," *Vernon Morning Star*
June 8 "Board to help pay for sewer treatment," *Vernon Morning Star*
June 8 "Letter to editor: Water Demand," *Vernon Morning Star*
June 20 "Full and running over," *Westside Weekly*

Summary of Upcoming Presentations

July 8 District of West Kelowna Agricultural Consulting Team: The importance of water in developing an Agriculture Plan (Dr. Warwick Sears)
July 15 Okanagan Institute: Green Grows the Valley – sustainability and water (Dr. Warwick Sears)

Recently Delivered Presentations

June 9 Ogopogo Rotary: Update on Okanagan Water (Dr. Warwick Sears)
June 17 Canadian Water Resources Association National Conference: The Water Supply & Demand Project - How the Okanagan is preparing for climate change (Dr. Warwick Sears)

Okanagan Basin WATER BOARD
1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 7.1

File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears, Executive Director

Date: July 29, 2010

Subject: Contract to manage Water Supply & Demand Data and Models

The OBWB is finally about to take delivery of all the data and models associated with the water supply and demand project. There is one major database, and two complex models (the Okanagan Hydrology Model – OHM; and the Okanagan Water Accounting Model – OWAM). The server will be housed at RDCO, who will provide basic systems administration support such as software updates and system back-ups. Our challenge is to ensure that after the large investment in developing the models and data, they can be put to best possible use. Phase 3 of the Project will involve running additional scenarios and helping local governments access and use the data.

At the recommendation of the Water Supply & Demand working group, I would like to offer a direct-award contract to Ron Fretwell of RHF Systems, Ltd to manage the installation and set-up of our database and information systems. We have had Ron under a technical assistance contract for the past two years. Ron developed the Okanagan Water Demand Model (a core part of the Water Supply and Demand Project) under contract with the Ministry of Agriculture and Agriculture Canada, and has been very involved with the technical aspects of linking the three project models with the database.

This is proposed as a direct award contract because Ron has very specific expertise in the project, and a great familiarity with all the data and models. The contract (attached) specifies that he will set up the system in such a way that it can be transferred to another host, such as UBC-O, if the OBWB chooses in the future. Ron would also be responsible for training other users, and for responding to data requests from local governments.

We have been offered a very competitive rate for his services, and have an excellent working relationship. We have more than sufficient budget to support this contract from the BC RAC funding, and with OBWB budgeted funds for transferring and establishing the database.

> Recommendation: *That the Board approves a contract with RHF Systems, Ltd, for OBWB Information Management. The contract is for time and materials up to $75,000.*

General Service Agreement
OBWB Information Management
OBWB 10-005

BETWEEN:	AND:
The Okanagan Basin Water Board (OBWB) Represented by Dr. Anna Warwick Sears (the "client", "we", "us", or "our", as applicable) at the following address: 1450 KLO Road Kelowna, BC V1W 3Z4 Tel: 250-469-6251 Fax: 250-762-7011 Email: anna.warwick.sears@obwb.ca	**RHF Systems Ltd.** (the "contractor", "you", or "your", as applicable) at the following address: 219 – 1884 Spall Rd. Kelowna, BC V1Y 4R1 Tel: 250-861-8050 Fax: 250-861-4843 Email: fretwell@rhfsystems.com

THE PARTIES AGREE TO THE TERMS OF THE AGREEMENT OUTLINED BELOW AND SET OUT ON THE ATTACHED SCHEDULES OF THIS DOCUMENT (THIS "AGREEMENT"):

SERVICES	FEES AND EXPENSES
(see attached Schedule A) Term: 9 months Start Date: July 7, 2010 End Date: March 31, 2011	(see attached Schedule B) *This is a time and materials contract. Payment will only be made for work actually performed during delivery of the services specified in Schedule A.* The maximum contract amount is $75,000, excluding HST.

LIST OF SCHEDULES AND APPENDICES	CONTRACT MONITOR
SCHEDULE A – SERVICES SCHEDULE B – FEES AND EXPENSES SCHEDULE B1 – TRAVEL INSTRUCTIONS SCHEDULE C – APPROVED SUB-CONTRACTORS SCHEDULE D – INSURANCE REQUIREMENTS SCHEDULE E – CONTRACT CHANGES SCHEDULE F – INDEMNITY AND STANDARD OF CARE APPENDIX 1 – SCOPE OF WORK APPENDIX 2 – RAC AGREEMENT	Anna Warwick Sears 1450 KLO Road Kelowna, BC V1W 3Z4 Tel: 250-469-6251 Fax: 250-762-7011 Email: anna.warwick.sears@obwb.ca

SIGNED AND DELIVERED on the _____day of_____, 2010 on behalf of the Okanagan Basin Water Board by its duly authorized representatives Signature:_____ Print name:_____	**SIGNED AND DELIVERED** on the _____day of_____, 2010 on behalf of the Contractor (or by its authorized signatory or signatories if the Contractor is a corporation). Signature:_____ Print name:_____

TERMS OF GENERAL SERVICE AGREEMENT

CONTRACTOR'S OBLIGATIONS

1. You must provide the services described in Schedule A (the "Services") in accordance with this Agreement. You must provide the Services during the term described in Schedule A (the "Term"), regardless of the date of execution or delivery of this Agreement.
2. Unless the parties otherwise agree in writing, you must supply and pay for all labour, materials, facilities, approvals and licences necessary or advisable to perform your obligations under this Agreement, including the licence under section 14.
3. Unless otherwise specified in this Agreement, you must perform the Services to a standard of care, skill, and diligence maintained by persons providing, on a commercial basis, services similar to the Services.
4. You must ensure that all persons you employ or retain to perform the Services are competent to perform them and are properly trained, instructed, and supervised.
5. We may from time to time give you reasonable instructions (in writing or otherwise) as to the performance of the Services. You must comply with those instructions but, unless otherwise specified in this Agreement, you may determine the manner in which the instructions are carried out.
6. You must, upon our request, fully inform us of all work done by you or a subcontractor in connection with providing the Services.
7. You must maintain time records and books of account, invoices, receipts, and vouchers of all expenses incurred in relation to this Agreement, in form and content and for a period satisfactory to us.
8. You must permit us at all reasonable times to inspect and copy all accounting records, findings, software, data, specifications, drawings, reports, documents and other material, whether complete or not, that, as a result of this Agreement, are
   (a) produced by you or a subcontractor (the "Produced Material", which includes any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by you or a subcontractor (the "Incorporated Material")), or
   (b) received by you or a subcontractor from us or any other person (the "Received Material").

   In this Agreement, the Produced Material and the Received Material is collectively referred to as the "Material".
9. You must treat as confidential all information in the Material and all other information accessed or obtained by you or a subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement and not permit its disclosure without our prior written consent except
   (a) as required to perform your obligations under this Agreement or to comply with applicable law,
   (b) if it is information that is generally known to the public other than as result of a breach of this Agreement, or
   (c) if it is information in any Incorporated Material.
10. You must make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure or disposal.
11. If you receive a request for access to any of the Material from a person other than us, and this Agreement does not require or authorize you to provide such access, you must advise the person to make the request to us.
12. We exclusively own all property rights in the Material which are not intellectual property rights. You must deliver any Material to us immediately upon our request.
13. We exclusively own all intellectual property rights, including copyright, in
    (a) Received Material that you receive from us, and
    (b) Produced Material, other than any Incorporated Material.

    Upon our request, you must deliver to us documents satisfactory to us waiving in our favour any moral rights which you (or your employees) or a subcontractor (or its employees) may have in the Produced Material, and confirming the vesting in us of the copyright in the Produced Material, other than any Incorporated Material.
14. Upon any Incorporated Material being embedded or incorporated in the Produced Material, you grant us a non-exclusive, perpetual, irrevocable, royalty-free, worldwide licence to use, reproduce, modify and distribute that Incorporated Material to the extent it remains embedded or incorporated in the Produced Material.
15. You must maintain and pay for insurance on the terms, including form, amounts, and deductibles, outlined in Schedule D, if attached, as those terms may be modified from time to time in accordance with our directions.
16. You must apply for and, immediately on receipt, remit to us any available refund, rebate or remission of federal or provincial tax or duty that we have paid you for or agreed to pay you for under this Agreement.
17. You must comply with all applicable laws.
18. You must indemnify and save harmless us and our employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that we or any of our employees or agents may sustain, incur, suffer or be put to at any time, either before or after this Agreement ends, which are based upon, arise out of or occur, directly or indirectly, by reason of, any act or omission by you or by any of your agents, employees, officers, directors, or subcontractors in providing the Services. If Schedule F is attached, the terms set out in that schedule apply to this Agreement.
19. You must not assign any of your rights under this Agreement without our prior written consent.
20. You must not subcontract any of your obligations under this Agreement without our prior written consent other than to persons listed in Schedule C, if that Schedule is attached. No subcontract, whether consented to or not, relieves you from any obligations under this Agreement. You must ensure that any subcontractor you retain fully complies with this Agreement in performing the subcontracted obligations.
21. You must not provide any services to any person in circumstances which, in our reasonable opinion, could give rise to a conflict of interest between your duties to that person and your duties to us under this Agreement.
22. You must not do anything that would result in personnel hired by you or a subcontractor being considered our employees.
23. You must not commit or purport to commit us to pay any money unless specifically authorized by this Agreement.

	INITIAL
CONTRACTOR	
OBWB	

PAYMENT

24. If you comply with this Agreement, we must pay you
    (a) the fees described in Schedule B, and
    (b) the expenses, if any, described in Schedule B if they are supported, where applicable, by proper receipts and, in our opinion, are necessarily incurred by you in providing the Services.

    We are not obliged to pay you more than the "Maximum Amount" specified in Schedule B on account of fees and expenses.
25. In order to obtain payment of any fees and expenses under this Agreement, you must submit to us a written statement of account in a form satisfactory to us upon completion of the Services or at other times described in Schedule B.
26. We may withhold from any payment due to you an amount sufficient to indemnify us against any liens or other third party claims that have arisen or could arise in connection with the provision of the Services.
27. Our obligation to pay money to you is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Okanagan Basin Water Board during which payment becomes due.
28. Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.
29. We certify to you that the Services purchased under this Agreement are for our use and are being purchased by us with Crown funds and are therefore not subject to the Goods and Services Tax.
30. If you are not a resident in Canada, we may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on your behalf.

TERMINATION

31. We may terminate this Agreement
    (a) for your failure to comply with this Agreement, immediately on giving written notice of termination to you, and
    (b) for any other reason, on giving at least 10 days' written notice of termination to you.

    If we terminate this Agreement under paragraph (b), we must pay you that portion of the fees and expenses described in Schedule B which equals the portion of the Services that was completed to our satisfaction before termination. That payment discharges us from all liability to you under this Agreement.
32. If you fail to comply with this Agreement, we may terminate it and pursue other remedies as well.

GENERAL

33. You are an independent contractor and not our employee, agent, or partner.
34. If you are a corporation, you represent and warrant to us that you have authorized the signatory or signatories who have signed this Agreement on your behalf to enter into and execute this Agreement on your behalf without affixing your common seal.
35. We must make available to you all information in our possession which we consider pertinent to your performance of the Services.
36. This Agreement is governed by and is to be construed in accordance with the laws of British Columbia.
37. Time is of the essence in this Agreement.
38. Any notice contemplated by this Agreement, to be effective, must be in writing and either
    (a) sent by fax to the addressee's fax number specified in this Agreement,
    (b) delivered by hand to the addressee's address specified in this Agreement, or
    (c) mailed by prepaid registered mail to the addressee's address specified in this Agreement.

    Any notice mailed in accordance with paragraph (c) is deemed to be received 96 hours after mailing. Either of the parties may give notice to the other of a substitute address or fax number from time to time.
39. A waiver of any term of this Agreement or of any breach by you of this Agreement is effective only if it is in writing and signed by us and is not a waiver of any other term or any other breach.
40. No modification of this Agreement is effective unless it is in writing and signed by the parties.
41. This Agreement and any modification of it constitute the entire agreement between the parties as to performance of the Services.
42. All disputes arising out of or in connection with this Agreement or in respect of any defined legal relationship associated with it or derived from it must, unless the parties otherwise agree, be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.
43. Sections 6 to 14, 16, 18, 26, 27, 30 to 32 and 42 continue in force indefinitely, even after this Agreement ends.
44. The schedules to this Agreement are part of this Agreement.
45. If there is a conflict between a provision in a schedule to this Agreement and any other provision of this Agreement, the provision in the schedule is inoperative to the extent of the conflict unless it states that it operates despite a conflicting provision of this Agreement.
46. This Agreement does not operate as a permit, license, approval or other statutory authority which you may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with the exercise by the Province or its agencies of any statutory power or duty.
47. The Agreement may be entered into by each party signing a separate copy of this Agreement (including a photocopy or faxed copy) and delivering it to the other party by fax.
48. In this Agreement,
    (a) "includes" and "including" are not intended to be limiting,
    (b) unless the context otherwise requires, references to sections by number are to sections of this Agreement,
    (c) "we", "us", and "our" refer to the Okanagan Basin Water Board alone, and
    (d) “attached” means attached to this Agreement when used in relation to a schedule.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE A – SERVICES

1. The Work Scope is as stated in Appendix A.

2. Deliverables include but are not limited to the following:

    a. OkWater Database, Okanagan Hydrology Model and Okanagan Water Accounting Model, and Okanagan web-reporting tool established at the IT centre of the Regional District of Central Okanagan
    b. Data transfer tool automating import and export of modeled data to/from the OKWater Database.
    c. Data access interface tool to simplify OKWater DB access for external users wishing to download data products.
    d. Okanagan water supply and demand data and modeling products accessible to local and senior government partners as required.
    e. Okanagan Information Management Strategy

3. The term of this contract will extend from July 6, 2010 (the start date) to March 31, 2011 (the end date).

4. Notwithstanding the inclusion of specific tasks within this contract, the contractor must provide a written proposal (email is acceptable) containing an estimated schedule of hours and costs and overall rationale, for any activity likely to have costs exceeding $5,000. Written approval (email is acceptable) must be received from the Contract Monitor or their designate prior to proceeding.

5. The "Study Team" must be adhered to. No substitutions of staff or staff time allocations may be made without prior written approval from the Contract Monitor. The study team consists of: Ron Fretwell.

6. Any necessary changes to this contract will be made according to the process outlined in Schedule E.

7. Communication between the Contractor and the OBWB will be through the Contract Monitor unless otherwise advised by the Contract Monitor.

8. All electronic files produced for this contract will be tested using current antivirus software to ensure that the files are clean before providing those files to the OBWB.

9. The work described in this contract involves access to and use of the Agricultural Water Demand Model (AWDM) which is jointly owned and managed by the BC Agriculture Council, Agriculture and Agri-Foods Canada, and the BC Ministry of Agriculture and Lands. The work also involves use of the Okanagan Climate Data Extraction Utility, owned by Agriculture and Agri-Foods Canada. These models are made available to the OBWB through Data Sharing Agreements. Notwithstanding clause 14 of the General Services Agreement in this contract, the sole ownership and intellectual property rights for these models reside with the organizations given above. Notice should be given to the owners when the model is being used for a new project in the Okanagan.

10. The OBWB acknowledges that RHF Systems Ltd. is independently contracted on a number of independent but related projects using different forms of the Water Demand Model. As a condition of this contract, projects and activities taken by RHF Systems Ltd. must not be in conflict with projects and activities undertaken by the OBWB. We request that the OBWB be informed of involvement in any potentially-conflicting projects and that you agree to work with the Executive Director to minimize actual or apparent conflicts.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE B – FEES AND EXPENSES

General:

1. This is a **time and materials contract** for professional services. Payment will only be made for work actually performed during delivery of the Services and outputs specified in Schedule A. Payment will not exceed the following allocations without written authorization (email is acceptable) of the Contract Monitor.

Maximum Contract Amount:

2. $75,000 is the maximum amount of fees and expenses that we must pay to you under this Agreement unless otherwise authorized by the Contract Monitor (either in writing or via email). Note that the OBWB is not HST exempt, but that the above maximum amount is not considered to include HST.

Fees and Expenses:

3. Fees will be based on the following hourly rates and will be payable to the Contractor for those days of the Term (and in a proportioned amount of the hourly rate for part hours) during which the Contractor is engaged in providing the Services:

Person	Role	Hourly Rate ($/hr)
Ron Fretwell, RHF Systems	Project management, technical support	$85.00

Statements of Account:

4. The Contractor will submit invoices electronically, to the Contract Monitor. All invoices must be accompanied by a statement of account containing:
   a) your legal name and address;
   b) the date of the statement;
   c) Expenses listed in detail and with dates, for the invoicing period, with applicable original receipts scanned and attached electronically. Original receipts are to be retained by the Contractor and may be requested by the Contract Monitor or the Okanagan Basin Water Board at any time during the period of the Agreement and for up to one year following completion of the Agreement;
   d) The calculation of all fees claimed, with individuals, hours and dates documented;
   e) The calculation and identification of applicable taxes;
   f) The total of all fees and expenses and applicable taxes;
   g) Identifying the contract number OBWB 10-005 and a description of this agreement to which the statement relates;
   h) A statement number for identification;
   i) Invoices should provide enough detail so that hours can be ascribed to individual projects per RAC funding agreements; and
   j) Any other billing information reasonably requested by us.

Payments Due:

5. Payments are due within 30 days of our receipt of your written statement of account delivered in accordance with this Schedule, we must pay you the fees and expenses claimed in the statement if they are in accordance with this Schedule. The Interest Payable Regulation (BC Reg. 215/83) applies to invoices that are more than 60 days overdue.

6. Expenses incurred for the project will be paid to the Contractor provided the same are supported by proper receipts and, in the opinion of the Contract Monitor, have been necessarily incurred by the Contractor in connection with provision of the Services.

	INITIAL
CONTRACTOR	
OBWB	

7. Travel, accommodation and meal expenses may be claimed, up to the equivalent of the amounts specified in the attached Schedule B-1, when away from the contractor's home location.

8. If the Contractor's obligations under this agreement have not been completed in accordance with this agreement to the satisfaction of the Contract Monitor and the Okanagan Basin Water Board, the Board may, in its sole discretion, reduce the amount of the payment required to be made by it pursuant to this Schedule as a genuine pre-estimate of liquidated damages.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE B1 – TRAVEL INSTRUCTIONS FOR CONTRACTORS

General:

1. "Travel Status" with respect to a contractor means the contractor is at least 32 kilometres away from the contractor's usual work location, on business related specifically to Contract OBWB 10-005, with the approval of the Contract Monitor. Travel status begins and ends at designated departure and return locations determined by the officer administering the contract.

2. The travel expenses described below will be paid when:
   a) travel is needed in fulfilling services contracted;
   b) provision for travel expense has been included in the contract; and
   c) the travel has been authorized by the officer administrating the contract.

3. All other Contractor travel, not meeting the description of 'travel status' above, must be approved in writing by the Contract Monitor before the additional travel expense will be reimbursed. The most economic travel arrangements should be used consistent with the time available to conduct the business.

4. Travel expenses will be reimbursed where the invoice is supported by a statement showing the accumulation of expenses for the trip under the various categories and to which original receipts, as required, are attached.

5. Notwithstanding your status as an independent contractor, expenses incurred on out-of-province travel will only be reimbursed when specific provision is made in the contract and prior approval for the travel has been obtained from the appropriate authority by the officer administrating the contract.

Private Car Transportation:

6. An allowance of 52¢ per kilometre for the use of the contractor's private vehicle may be claimed. It is intended to cover costs of gas and maintenance.

7. Reimbursement for parking essential to the business may be claimed. Receipts are required, while parking machine tickets marked with the total paid and signed by the claimant are acceptable. Owners are responsible for ensuring they have adequate insurance to cover business use on behalf of the Okanagan Basin Water Board (see Schedule D for requirements).

Public Transportation:

8. Receipts are required for reimbursement of actual expenses incurred through the use of buses, airlines (most economical fare), ferries, taxis, rental cars and tolls.

Meal Allowance:

9. The maximum daily amount that may be claimed for meals is $45.00. Depending on the time of departure or arrival, the following partial day rates may be claimed.

   Partial Day Rates

Breakfast (7 a.m.)	$11.00	B&L	$23.75
Lunch (12 noon)	$12.75	L&D	$34.50
Dinner (6 p.m.)	$21.75	B&D	$32.75

10. Meals which are paid for from public funds and provided free to contractors acting on business related to Contract OBWB 10-005 must not be claimed.

	INITIAL
CONTRACTOR	
OBWB	

Accommodation:

11. In making a hotel selection for your travel:
    a) Select the most cost effective hotel that meets your business requirements considering the basic room cost and any supplementary costs for internet access, parking or other costs.
    b) Please note: bed and breakfast properties are included. Where breakfast is included, your reimbursement claim should not include a breakfast component.

12. You will be reimbursed for the full amount of the hotel's base rate, plus other applicable business expenses; e.g. parking, internet access for business use only.

13. Original receipts and proof of payment are required. When private accommodation is used, a maximum of $30.00 per night may be claimed; receipts are not required.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE C – APPROVED SUB-CONTRACTORS

1. The Okanagan Basin Water Board reserves the right to approve all subcontractors.

2. The Okanagan Basin Water Board has no contractual obligation(s) to subcontractors. The Contractor is wholly responsible for oversight and supervision of subcontractors, payment of subcontractors and ensuring that subcontractors are aware of and adhere to, the terms and conditions of this contract.

3. The approved subcontractors include:

   - There are no approved subcontractors

4. Should the Contractor need to add subcontractors, the Contractor must advise the Contract Monitor, providing the full legal names of the proposed sub-contractor(s), their charge out rate(s) and the rationale for their addition.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE D – INSURANCE REQUIREMENTS

The Contractor is responsible for providing appropriate and adequate insurance coverage as outlined in this Schedule for the duration of the project.

1. You must, without limiting your obligation or liabilities and at your own expense, purchase and maintain throughout the term of this Agreement the following insurances with insurers licensed in Canada.

    (a) Commercial General Liability in an amount not less than $2,000,000 inclusive per occurrence against bodily injury, personal injury and property damage and including liability assumed under this Agreement and this insurance must

        (i) include the Okanagan Basin Water Board as an additional insured,
        (ii) be endorsed to provide the Okanagan Basin Water Board with 30 days advance written notice of cancellation or material change, and
        (iii) include a cross liability clause; and

    (b) Vehicle Liability Insurance for all vehicles used by the Contractor in the delivery of the Services to an amount not less than $2,000,000.00 inclusive per occurrence.

2. All insurance described in paragraph 1 of this Schedule must:

    (a) be primary; and
    (b) not require the sharing of any loss by any insurer of the Okanagan Basin Water Board.

3. You must provide to us when requested by us:

    (a) evidence in the form of a completed Province of British Columbia Certificate of Insurance of all required insurance; or
    (b) certified copies of required policies.

4. You will comply with the Workers' Compensation Act and in particular will obtain and maintain during the term of this Agreement, the necessary coverage for yourself and any of your employees, and will, upon request by the Okanagan Basin Water Board, provide particulars of such coverage.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE E – CONTRACT CHANGES

1. It is the intent of this Agreement to provide deliverables within the budget and timeframe specified by this agreement without increasing the scope of the project, however, if changes are deemed essential they will be undertaken as specified in this Schedule.

2. The Okanagan Basin Water Board may propose to you a change in Services to include additional work that is of the same or similar nature to the Services originally described in the Agreement.

3. If we make a written request, you must within 15 days after receiving the request supply us
   a) A good faith estimate of the total cost to do only the things reasonably necessary to implement the Proposed Change Order,
   b) A plan to implement it,
   c) A detailed description of the Proposed Change Order including, as necessary, designs, plans and technical information,
   d) The proposed changes to the fees and expenses described in Schedule B, if any, along with any supporting information to substantiate the proposed changes, and
   e) The proposed changes, if any, to this contract, including to Schedule A, and to any milestone dates and the Term.

4. You may similarly propose a Proposed Change Order by supplying us an estimate and a plan as described above.

5. All of the prices, terms, warranties and benefits you present in the estimate must be similar to or better for us than equivalent terms being offered by you to any present customer at the time, including any other provincial ministry.

6. You are not entitled to charge for creating a plan and estimate for a Proposed Change Order unless you tell us, within five working days after you receive our written request, that it is necessary to first conduct a separate study. We may or may not engage you to conduct such a study.

	INITIAL
CONTRACTOR	
OBWB	

SCHEDULE F - INDEMNITY & STANDARD OF CARE CLAUSES

Clause 18 (INDEMNITY) of the General Services Agreement (page 2) is hereby deleted and replaced by the following INDEMNITY clause and the Standard of Care Clause is added:

Clause 18 INDEMNITY

Notwithstanding any insurance coverage, the Contractor hereby agrees to indemnify and save harmless the Okanagan Basin Water Board, its successor(s), assign(s) and authorized representative(s) and each of them from and against those losses, claims, damages, actions and causes of action (collectively referred to as "claims") that the Okanagan Basin Water Board may sustain, incur, suffer or be put to at any time either before, during or after the expiration or termination of this Agreement that arise out of errors, omissions or negligent acts of the Contractor or their Subcontractor(s) or Subconsultant(s), servant(s), agent(s), or employee(s) under this Agreement.

STANDARD OF CARE

In completing the assignment the Contractor shall at all times exercise the standard of care, skill and diligence normally provided in the performance of services for work of a similar nature to that contemplated by this contract including the maintenance of an archive copy of any Material required to comply with applicable professional obligations, laws and regulations in the Province of British Columbia.

	INITIAL
CONTRACTOR	
OBWB	

Appendix A: Scope of Work

1.0 Introduction

This document outlines a work scope and budget for technical support services supporting management of and access to data, databases and models of the Okanagan Basin Water Board.

2.0 Work Scope

The Okanagan Basin Water Board (OBWB) and senior government partners have recently completed Phase 2 of the Okanagan Water Supply & Demand Project. This project included creation of the OKWater Database (OKWater DB) to hold and mediate the outputs of the following three water models:

- The Okanagan Water Demand Model (OWDM)
- The Okanagan Hydrology Model (OHM)
- The Okanagan Water Accounting Model (OWAM)

In addition, a web-reporting tool (OWRT) has been developed to display information from the models.

These products have been developed by external companies and researchers. OBWB now wishes to move the products to an OBWB server and provide broader access to the data products and other results from the project. The purpose of this contract is to undertake a series of activities that will establish the OK Water DB, the OHM, OWAM and OWRT on a server at the Regional District of Central Okanagan (RDCO) in Kelowna, BC. The contract further provides for expanded access of these models and data to local government and other partner agencies, as well as access to data products from the OWDM (owned and hosted by the BC Ministry of Agriculture, and Agriculture Canada).

The OBWB's goal is to establish a stable, functional system for data management and exchange that can be easily understood and managed by others with standard technical training, and potentially transferred in the future to another host such as UBC-Okanagan. Activities undertaken in this contract should be consistent with this goal.

Specifically, activities in this contract include, but are not limited to:

- **Model and Database Transfer**: Project management to oversee the transfer of the OKWater DB and Okanagan Water Web-Reporting tool to RDCO from ESSA Technologies, overseeing development of an administrator's guide for these products and technical training for their administration by the contractor and/or RDCO staff; managing the transfer of the OHM and OWAM from DHI Water and Environment Inc (DHI). This task also involves oversight of the server hardware purchase and software installation. (RAC commitments: 1, 4, 5, 6, 7, 8 ; Tasks: 5, 6, 7, 9, 11).
- **Data-transfer Tool Development**: Development of a data-transfer tool for automating the input and export of data between the models and database. The goal is to have minimal administrative effort involved for running scenarios. (RAC commitments: 1, 4, 5, 6, 7, 8; Tasks: 6, 7, 9, 11).
- **Data-access interface tool**: Development of a tool to simplify OKWater DB access for external users wishing to download data products. (RAC commitments: 1, 4, 5, 6, 7, 8, 10, 11 ; Tasks: 6, 7, 9, 11).
- **Training on Mike She**: Undertaking training for running scenarios and customizing the OHM and OWAM, both developed on the MIKE-SHE model platform by DHI. The goal is to have the ability to conduct modeling projects and training for the OBWB and other local contractors with little need for technical support from DHI. Actual modeling projects or specific training efforts for external partners will be covered by separate agreements. (RAC commitments: 1, 4, 5, 6, 7, 8, 10, 11, 12 ; Tasks: 7, 9, 11).

	INITIAL
CONTRACTOR	
OBWB	

- **Data and Modeling Services to local and senior government partners**: Provide modeling/data access services for the models and database (listed above) to Okanagan local governments and senior government partners, as permitted by the OBWB data sharing protocol and other data sharing agreements. This contract will supersede previous arrangements for data provision from these sources. The contractor will be the primary contact for individuals seeking modeling services, and, with the assistance of OBWB staff, will create a process for tracking the submission and provision of service requests. It is expected that the contractor will help build capacity within local governments for use of and access of such products. (RAC commitments: 1, 4, 7, 8, 10, 11, 12 ; Tasks: 7, 9, 11).
- **Liaison with Researchers and External Partners**: Provide mentoring and training in data management activities, data access and modeling by a co-op university student. Arranging for access of database and models by university and government researchers (RAC commitments: 1, 7, 10, 11, 12; Tasks: 7, 9, 11).
- **Development of Information Management Strategy**: Work with OBWB staff and partner agencies and organizations to develop a long-term strategy for development of information architecture to link Okanagan data sources, models and tools. The strategy will include integration of the OK Water DB with systems such as the Streamlined Water Use Reporting Tool, and a database to house data needed for future updates of the Okanagan Water Supply & Demand models. (RAC commitments: 4, 5, 6, 8, 10, 11, 12; Tasks: 6, 7, 9).

3.0 Estimate of Costs

This is a time and materials contract. The estimated cost of the work outlined herein will be capped at $75,000 (combined fees and disbursements, not including HST). The maximum hourly rate for this project is $85.00/hr.

Notwithstanding the inclusion of specific tasking within this contract, the contractor must provide a written proposal (email is acceptable) containing an estimated schedule of hours and costs and overall rationale, for any activity likely to have costs exceeding $5,000. Written approval (email is acceptable) must be received from the Contract Monitor or their designate prior to proceeding.

	INITIAL
CONTRACTOR	
OBWB	

Appendix B: RAC Agreement

Project Outcomes/Commitments

The Okanagan Water Supply and Demand Phase 2 Project was completed in March 2010. This new RAC project provides the transition from a scientific study to assessing the results from a policy perspective and providing recommendations as well as data and modelling outputs. Specifically, these funds will be used to create future scenarios supporting climate change vulnerability assessments for the Okanagan Basin and to make all of the data, modelling outputs and recommendations from the project available to the BC Government, Federal Government, First Nations, local governments and sector organizations that require the information to create positive actions leading to meeting the policy objectives outlined above. Specifically this includes:

1. Provide stream specific and regional data to inform BC Ministry of Environment water allocation & licensing decisions reducing over-allocation of streams in the Okanagan Basin and protecting sensitive ecological habitats, improving drought management planning and practices, supporting piloting of new governance models and will lead to delivery of Living Water Smart and BC Climate Action Commitments listed above
2. Provision of recommendations to BC government as input to Water Act Modernization
3. Provision of recommendations to BC Ministry Community Development and Federal infrastructure funding program policy development that can directly influence actions by local government toward water conservation, water use efficiency and ensuring adequate water storage capacity in response to impacts of climate change on local snow packs.
4. Provision of local water supply and demand data to inform and support local government decisions for infrastructure and to inform granting agencies of the real need.
5. Provision of data and recommendations on local and Basin-wide, current and future water supply and demand to inform and support the OBWB's local government grant program: "Water Conservation & Quality Improvement Program"
6. Provision of data and recommendations on local and Basin-wide, current and future water supply and demand to inform and support activities by the Okanagan Water Stewardship Council in delivery of the Okanagan Water Sustainability Action Plan
7. Transfer and sharing of tools and knowledge developed in the Okanagan with watershed groups outside the Okanagan (e.g. Similkameen, Nicola, Somass, Cowichan, etc.)
8. Provision of data and model outputs and recommendations to the BC Government and local governments to support structured decision-making for risk assessment and selection of practical solutions for water management & security at sub-basin and basin-wide scales
9. Recommendations will guide planning and implementation of improved and more efficient data collection by various agencies to improve future water supply & demand and climate change modelling reliability.
10. Provision of data and modelling outputs to academic and Federal scientists for further climate adaptation modelling and research
11. Provision of data and recommendations will support First Nation treaty tables (e.g. Westbank).
12. Data and recommendations will be available for use in negotiation of international and trans-boundary agreements (e.g. IJC – International Osoyoos Lake Board of Control).

	INITIAL
CONTRACTOR	
OBWB	

Project Tasks and Measurement

This section describes the basis for measuring progress, outcomes, and success of the RAC Project. Reporting by the Recipient shall reflect these parameters.

i Timeline of Project Activity and Deliverables

Task/Activity	Deliverables	Completion Date
1. Workshop to identify desired scenarios and select appropriate climate change models and population growth	Workshop memo describing key outcomes.	June 30, 2010
2. Identification of how climate change & population growth could impact water supply & demand in the Okanagan in the future.	Summary report of Water Supply & Demand Project, analyzing model and scenario results	March 31, 2010
3. Development of recommendations to BC Government for Water Act Modernization.	Provision of recommendations to BC Government for Water Act Modernization.	May 31, 2010
4. Data, models, scenario outputs available for Provincial, Federal and local planners, water allocation specialists and scientists including training in the use of available tools.	Okanagan Water Database established with access protocols and data sharing agreements. Training session handbook for expert technical users.	September 30, 2010
5. Enhanced, web-based reporting of Okanagan Water Supply & Demand Project & scenario modelling outputs available to Provincial, Federal and local planners, water allocation specialists and scientists and the public.	Web-based tool to report on project and scenario modelling outputs.	March 31, 2011
6. Completion of scenario analysis, risk & vulnerability assessment	Completion of scenario analysis, risk & vulnerability assessment & development of recommendations for policy change & action to avoid water shortages & protect environment.	December 31, 2011
7. Provision of recommendations to BC government and local government.	Provision of recommendations to BC government (input to Living Water Smart implementation and infrastructure funding program policy development) and local governments.	March 31, 2012

	INITIAL
CONTRACTOR	
OBWB	

Additional deliverables not in original agreement

8. Bias removal in scaled-down Global Climate Model precipitation and temperature projections	Current global climate models were recently discovered to produce biased precipitation and temperature projections when scaled down to the Okanagan, creating bias in Okanagan Water Supply & Demand future scenarios. The proposed project would correct scenarios for both water demand and water supply modeling, to create a more accurate picture of future water needs for Okanagan communities and environmental values. The project will assist in ensuring that existing data analysis will be correct in this case study.	March 31, 2010
9. Water Supply & Demand data access and site-specific modeling for local governments.	As the Okanagan water supply & demand project is completed, there has been high interest from local governments in having custom model runs and local scale analyses conducted to support planning in their areas. Recent examples include custom development of information for the Okanagan-Similkameen Regional Growth Strategy, and a water demand study in an area suffering from failing aquifers. The funds proposed here would cover a portion of the direct costs to local governments for hiring contractors who are trained to run these complex models. In addition, it is expected that contractors will help build capacity in the participating local governments.	March 31, 2012
10. Stormwater management for Okanagan policy makers.	Effective stormwater management is a critical tool for adaptation to climate change in the Okanagan. Many of the environmental problems associated with Okanagan rivers and streams relate to the diking installed to reduce flood risks. In addition, overland flow of stormwater is a valuable resource for recharging aquifers. There have been many positive and innovative developments in stormwater management that have not been introduced in Okanagan municipalities and rural areas. The goal of this project would be to educate policy makers – politicians and municipal senior staff – so that budget decisions reflect the best possible choices for infrastructure renewal in stormwater management. The project will carry out a workshop with policy makers, with an output of a report on the workshop.	March 31, 2012
11. Development of an Okanagan Hydrologic Connectivity Model.	The hydraulic flow of the Okanagan is North-South. In order to develop a drought response framework that accounts for interjurisdictional draws on the same water source, cumulative impacts resultant from up-stream use need to be accounted for in the water licensing regime of the Okanagan, and compared against the existing water license FITFIR priority system. A new hydrologic connectivity analysis, extending the models of the Okanagan Supply and Demand study, is a critical next step to support the development of a Basin-wide drought plan for the Okanagan. This project will provide Okanagan water managers and professionals, for the first time, a model of water flow in the Okanagan – identifying bottlenecks and providing critical information to manage water withdrawals in the Okanagan during low-flow years. Currently, water suppliers manage water on a supply by supply basis. This project is an essential element to sustainably managing Okanagan waters. Project outputs will include a report describing the new Hydrologic Connectivity Model and Analysis.	March 31, 2011

	INITIAL
CONTRACTOR	
OBWB	

Fresh Outlook FOUNDATION

12510 Ponderosa Road, Lake Country, BC V4V 2G9
Phone: 250-766-1777 • Fax: 250-766-1767
Website: www.freshoutlookfoundation.org

Agenda No: 7.2
Regular: ☑ In-Camera: ☐
Date: July 6, 2010

OBWB

June 22nd, 2010

Anna Warwick Sears, Executive Director
Okanagan Basin Water Board
1450 KLO Road
Kelowna, BC V1W 3J4

Funding Application for Talking DIRTy x10,000

Dear Anna,

The Fresh Outlook Foundation (FOF) recently launched a project entitled **Talking DIRTy x10,000**, during which it plans to have 10,000 Okanagan residents view **DIRT! The Movie** before October 10th, 2010. An award-winning documentary about soil ecology and conservation, DIRT has already been seen by more than 1,000 locals at community screenings, business lunches, home parties, schools, and churches.

To help boost project numbers, FOF is planning a large, outdoor community screening for Saturday, August 14th in Kelowna. To attract families from all parts of the Okanagan, the event will feature a 40-minute version of the movie, live entertainment, local food products, and a trade show featuring soil- and water-related products and services.

I propose that the OBWB be an event partner to help promote the critical connection between soil and water, which is addressed on numerous occasions throughout the film. It is noteworthy that the BC Water and Waste Association recently highlighted the role of topsoil for reducing stormwater runoff and water consumption (less lawn watering needed!), and is encouraging municipalities to adopt soil conservation bylaws and other outreach mechanisms to promote this low-cost, high benefit resource. Preserving and building soil also reduces GHGs in the atmosphere by storing carbon, and builds agricultural productivity.

This letter is a direct appeal to the OBWB for $1,500 to help us cover event costs such as equipment rental and advertising. I will work with OBWB staff to optimize opportunities for information sharing and interaction with event participants.

For your information, Talking DIRTy x10,000 sponsors to date include Nature's Gold, Best Western Inn Kelowna, House of Rose Winery, Working Horse Winery, Tantalus Vineyards, DIRTT, Sunshine Farm, Urban Harvest, Lake Country Coffee House, McCoubrey Farms, Leo's Videos, Ken's Horticultural Services, and Ten Thousand Villages. Event sponsors include Okanagan College, the Districts of Lake Country and West Kelowna, BC Sustainable Energy Association, City of Kelowna, Council of Canadians, Kelowna Permaculture, Urban Systems Ltd., CTQ Consultants, BC Interior Agrologists, KLO Middle School, Springvalley Middle School, Springvalley Elementary, Rose Valley Elementary, Casorso Elementary, Kelowna Unitarian Church, New Life Church, and St. Charles Garnier Parish.

Thank-you for your consideration...

Joanne de Vries, Founder & CEO
Fresh Outlook Foundation

Okanagan Basin
WATER BOARD

1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 7.3

File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears, Executive Director

Date: July 29, 2010

Subject: Moratorium on the sale of lots on drinking water reservoirs

The provincial moratorium on the sale of recreational lease lots on Okanagan drinking water reservoirs is scheduled to end this summer. At the last meeting, OBWB directors requested staff to draft a letter to Minister Pat Bell, asking him to make the moratorium permanent. Along with the draft letter I have attached copies of the Moratorium letter from Stan Hagen, the previous Minister, and our request to Minister Bell for more information.

The attached article on Lake Country's effort to expand their reservoir storage provides a balanced view of this controversy. What has not been highlighted is that reservoir storage is important for the health of streams to reduce the impact of summer low-flows, balancing extractions for human use. Although increasing reservoir levels in some lakes could have a measurable impact on lake spawning habitat, this habitat would not have been in place without the original dams that increased water levels.

The draft letter raises the importance of reservoir storage for all uses, and reiterates their special role for limiting the impacts of climate change.

WATER SUPPLY & DEMAND WORKING GROUP RECOMMENDATION TO WAM:

Protection of upland water supply reservoirs
Many water storage reservoirs have been constructed on the upland plateau on the west and east sides of the Okanagan valley. These storage reservoirs trap spring runoff and store it for later release to support irrigation and indoor uses in the lower valley during the summer. Future winter snowpacks are likely to be smaller and to melt earlier than at present. In addition the irrigation season is likely to become longer. These factors will challenge the operators of these storage reservoirs to continue to supply water through the irrigation season.

The Working Group recommends that a modernized Water Act provide protection of these important water sources, by allowing water suppliers to maintain guaranteed access to these reservoirs and the surrounding land base for reservoir operation and potential expansion, for the purpose of continuing to provide reliable water supplies.

Cottagers oppose bid to raise reservoir levels in Central Okanagan community

Drought plan would threaten ecosystem and flood some lakeside lots, critics say

Adrian Nieoczym

Kelowna — From The Globe and Mail Published on Thursday, Jun. 03, 2010 5:08AM EDT

The 2003 drought that gripped the B.C. Interior still haunts officials with the District of Lake Country, a Central Okanagan farming community of 9,600 people.

“We were to the point, if it hadn't have rained, we were going to have to sit down with growers and say, ‘How many acres do you have? Okay, if you have to pick what dies and what lives on your orchard, what are you going to pick?’ ” said Michael Mercer, Lake Country's director of engineering.

As a result of that experience, Lake Country has asked the province for permission to raise the level of three reservoir lakes by up to 1.8 metres. But the plan is opposed by lakeside cottage owners, who say it will harm the environment. They also fear the proposal will hurt their attempts to buy their lots, which they currently lease from the province.

Lake Country Mayor James Baker says global warming is causing snowpacks to melt earlier in the year, while the loss of trees to the pine beetle means the resulting runoff reaches the lakes more quickly. Once the reservoirs fill, excess water is lost over the sides and is unavailable during the dog days of summer.

“There's no other way to store more water except in our upland reservoirs,” he said, noting the lakes were originally created in the 1920s when agriculturalists built a series of dams. Their levels were raised in the 1940s and again in the 1960s.

Today, about 80 per cent of the water continues to service agriculture.

But raising the lakes again will destroy a vibrant recreational fishery, flood wetlands and threaten a delicate ecosystem, according to the president of the Okanagan Cottage Owners Association, Lloyd Manchester, who is also the founder of the EarthCare Society, a non-profit environmental organization. His cottage on Beaver Lake has been in his family for 50 years.

“It has the potential of basically crippling fish populations,” he said, adding that several animals on the province's red list of endangered species live in wetlands next to the lakes, including the tiger salamander and the northern leopard frog.

The cottage owners have some support from the Freshwater Fisheries Society of B.C., which runs the province's fish stocking program. It gathers one million trout eggs annually from two collection stations near the lakes. They are among the eight million eggs used to stock 800 lakes throughout B.C.

The society doesn't know yet what effects Lake Country's plan will have, but it is concerned about the effects on both the fish habitat and its collection facilities.

“Until we can get those answers, we're probably not supportive of the project,” said the organization's vice-president, Tim Yesaki.

The Ministry of the Environment says Lake Country will be made to provide those answers. In an e-mail, the ministry said the district is required to conduct an environmental assessment before it gets the go-ahead, which could take up to two years.

Complicating matters is a proposal floated by the province in 2008, which would allow 165 Central Okanagan cottage owners like Mr. Manchester to buy their lakeside lots. At the moment, they own their buildings but hold 15-year leases on the land.

Outcry from communities like Lake Country forced the province to slap a two-year moratorium on the sales, which expires in August. Mr. Manchester sees Lake Country's current plan as a ploy to further delay the sales, since raising the water level could flood some of the properties.

“Where we believe Lake Country is coming from is that they're using this as a tactic to stop the sale of the lots,” he said.

But the way Mr. Baker sees it, his government is just trying to protect his community's water source. “The question of private interests trumping public interests seems strange to us,” he said.

A spokesperson for Forests and Range Minister Pat Bell, who is responsible for overseeing Crown land, said any decisions about selling the lots “would take into account the ability and practicality of raising the dams.”

Okanagan Basin
WATER BOARD
1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

OBWB POLICY - DISPOSITION OF CROWN LANDS SURROUNDING DRINKING WATER RESERVOIRS IN THE OKANAGAN WATERSHED

07 July 2009

WHEREAS,

A. Access to clean water is deemed essential for human populations as well as for life more generally; and
B. An adequate supply of water is fundamental to the economic vitality and quality of life enjoyed by inhabitants of the Okanagan Basin today and in the future; and
C. The Okanagan Basin is classified as a semi-arid environment, to large degree, and therefore is susceptible to natural water-related stresses arising from seasonal and annual weather variability as well as long-term trends in climate change; and
D. The population of the Okanagan Basin is anticipated to increase in the foreseeable future with associated pressures exerted on water resources and water supply systems; and
E. A significant proportion of the annual water supply available to inhabitants of the Okanagan Basin is stored in drinking water reservoirs that are managed to some degree by humans, and therefore such reservoirs constitute an integral component of the water-supply infrastructure of the Okanagan region; and
F. It is anticipated that extra storage capacity in existing and new reservoirs will be required (and added) in the future to accommodate increasing demand; and
G. The presence and conduct of human-related activities (including the occupation of seasonal or permanent dwellings) on existing crown land in close proximity to or directly within drinking water reservoirs is potentially detrimental—whether incidental, accidental, or by consequence--to the overall integrity and well-being of the water resources and aquatic and riparian ecosystems sustained by those reservoirs; and
H. The OBWB deems it desirable not to foreclose on any and all water and land management options, tools, and strategies currently available to secure the sustainable future of water resources in the Okanagan Basin; and
I. In some cases, existing leases have been accompanied by significant investment in improvements, inter-generational occupation, and responsible stewardship of the land and surrounding environment, and that implementation of this Policy, while causing hardship to certain individuals is performed in the service of the greater public good.

NOW THEREFORE BE IT RESOLVED THAT:

1. **The OBWB supports and encourages keeping existing Crown Lands that are proximal to drinking water reservoirs in the public domain so as to maximize the potential for flexible management strategies of these critical lands with the intent of ensuring a sustainable supply of high quality water for the entire Okanagan Basin in perpetuity; and**

2. **Without limiting the generality of the foregoing, the OBWB opposes the sale or disposition of Crown Lands adjacent to or in near proximity to drinking water reservoirs in the Okanagan watershed into private occupation, and moreover encourages the lapse of existing leases on such proximal lands without possibility for renewal.**

BRITISH COLUMBIA

Reference: 161135

Brian Reardon
Administrator
Regional District of North Okanagan
9848 Aberdeen Road
Coldstream BC V1B 2K9
Fax: 250 550-3701

Dear Brian Reardon,

I am writing to update you on the proposed sale of leased recreational lots around Okanagan Valley reservoir lakes and the project underway to review concerns about water quality and quantity issues associated with the sale of leases.

I wish to advise you that the Province will not be making a decision on whether to proceed with the sale of the reservoir lakes lease lots until we have fully consulted with local elected officials as well as First Nations. The Province is committed to making an informed, balanced decision and will continue to work with stakeholders to ensure any new information about the potential impacts that these sales might have on water quality, and the ability to expand the reservoirs, is reviewed.

In addition, I am well aware of the pressure on the water sources in the Okanagan and as such no decision will be made until communities are able to complete the necessary hydrology studies that will help to determine future storage needs and capacity. This process is expected to take approximately two years. During this time, critical information that is necessary for making a fully informed decision will be compiled on the state of the water sources in the Okanagan.

Sincerely,

Stanley B. Hagen
Minister

BC 150 YEARS The Best Place on Earth

Ministry of Agriculture and Lands
Office of the Minister
Mailing Address:
PO Box 9043 Stn Prov Govt
Victoria BC V8W 9E2
Telephone: 250 387-1023
Facsimile: 250 387-1522
Web Address: http://www.al.gov.bc.ca

pc: Tom Christensen, MLA
Okanagan-Vernon

Gary Townsend, Assistant Deputy Minister
ILMB, Regional Operations Division

Okanagan Basin
WATER BOARD

1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

File No. 5280.07

August 10, 2009

Honourable Pat Bell
Minister of Forests and Range; and the Integrated Land Management Bureau
PO Box 9049
STN PROV GOVT
Victoria, BC V8W 9E2

Re: *Two year moratorium on the sale of lots on drinking water reservoirs: requirement for further hydrologic testing*

Dear Minister Bell,

The Okanagan Basin Water Board requests clarification on the need for local government to conduct hydrologic testing in the Okanagan. Minister Ron Cantelon's letter dated April 1, 2009 (reference 165147), identifies that hydrological studies will be undertaken by local communities over the next two years. The implications of hydrologic testing in upper reservoir watersheds, especially if it is a pre-requisite to reviewing the sale or long-term lease of reservoir lots, are significant. The Okanagan Basin Water Board would like further information about who is responsible for the costs of carrying out the significant work required to design and implement scientific hydrologic testing. Are the individual cabin owners, the Okanagan Cabin Owners Association, or tax payers responsible for paying for these studies?

Abundant, clean water is the most precious natural asset in the Okanagan – essential to the beauty of our landscapes, our healthy economy and the well-being of our citizens and ecosystems. This year's reduced snow pack, low stream flows and significant forest fires highlight the need to manage our water supplies for today and future needs.

Over the past several decades, the Okanagan has experienced dramatic population growth and expansion of irrigated areas, making it one of the highest water use areas in Canada — amplified by our dry climate. Our water supplies are close to fully allocated. Climate change is projected to bring warmer winters with less snow; hence, available water supplies will further dwindle as storage in the snow pack declines. We also expect warmer summers and longer growing seasons, increasing demand for irrigation water.

The Okanagan Basin spans the communities of Osoyoos in the south to Armstrong in the north – incorporating most of the three Okanagan regional districts. Approximately 45% of our annual water supply for drinking, domestic, agriculture, the environment and fish is stored in upland reservoirs, an

important and strategic infrastructure asset of the region. Several of the largest water utilities (South East Kelowna Irrigation District, District of Summerland, Westbank Irrigation District) who depend on these upland sources are currently experiencing serious water shortages because of low reservoir levels.

The Okanagan Basin Water Board, the Water Supply Association of BC, the Okanagan Interior Health Authority, the Okanagan Indian Band, many individual water utilities, regional districts and municipalities have registered their opposition[1] to the sale of crown land adjacent to drinking water reservoirs in the Okanagan.

The Okanagan Basin is considered one of the most arid watersheds in Canada, with an urgent need for effective water management. Your continued support for sustainable water management in the Okanagan is appreciated. We look forward to hearing from your office regarding the hydrologic studies referred to in Minister Cantelon's letter.

If you have any questions, please don't hesitate to contact our office.

Sincerely,

Stu Wells
Acting Chair

Cc. Okanagan MLAs

[1] A copy of "Noted opposition to sale of land surrounding drinking water reservoirs," a collection of letters and documents, is available on line: www.obwb.ca/protection_drinking_water/

Okanagan Basin Water Board Strategic Vision

"Providing leadership to protect and enhance quality of life in the Okanagan Basin through sustainable water resource management."

Water in Context

There is only one water in the Okanagan – snow, rain, lakes, streams, groundwater, water for fish or for drinking, wastewater, stormwater, and irrigation are all connected by the hydrologic cycle and by our shared use. The Okanagan has the one of the lowest per capita water supplies in Canada. Wide fluctuations in precipitation swing us between extremes of drought and flood. In this fragile environment, we need healthy ecosystems to protect the health of Okanagan communities and water sources. Within the next few decades, both water quality and water supply will be impacted by a rapidly growing population and the effects of global climate change. Meeting these challenges takes basin-wide vision and action – our environment, quality of life and regional economy depend upon it.

Who We Are

The Okanagan Basin Water Board (OBWB) was established by BC legislation in 1970 to resolve critical water issues at the scale of the entire watershed. The OBWB has representatives from the three Okanagan regional districts, the Okanagan Nation Alliance, the Water Supply Association of BC and the Okanagan Water Stewardship Council – a broadly-representative stakeholder group established by the Board to provide independent science-based advice on water issues. The OBWB strives for consensus decisions and Directors have equal-weighted votes. Programs are supported through tax assessments on lands within the Okanagan watershed. *Our vision is to have a fully-integrated water system, meeting the needs of residents and agriculture while supporting wildlife and natural areas.*

What We Do

The OBWB provides the following essential functions:

- **Implementing basin-wide programs** for watermilfoil control, wastewater infrastructure funding, and water research and management – benefiting all Basin residents
- **Advocating and representing** local needs to senior government planners and policy makers – protecting Okanagan interests
- **Providing science-based information** on Okanagan water to local government decision makers and water managers – for sustainable long-term planning
- **Communicating and coordinating** between government, non-government, universities and businesses – increasing the effectiveness of water projects and research
- **Building funding opportunities** by providing leverage grants, securing external dollars and identifying cost-sharing partners – expanding local capacity

Structured for Success

The OBWB bridges the water interests of all Okanagan jurisdictions, and our emphasis on equity reduces conflicts between urban and rural needs. The OBWB's semi-autonomous structure gives flexibility to respond to issues or opportunities, allowing alternative approaches and funding partnerships. With a new emphasis on water management, the OBWB is comprehensive and action-oriented. Multi-stakeholder technical advice from the Council strengthens the OBWB's decisions. By building communication networks, the OBWB promotes collaboration among governments, non-government and private sectors.

Okanagan Basin
WATER BOARD

1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 7.4

File No. 0550.04

To: OBWB Directors

From: Anna Warwick Sears, Executive Director

Date: June 29, 2010

Subject: BC Regional Innovation Chair in Water Resources and Ecosystem Management

The Board has received a request by UBC Okanagan to support a BC Regional Innovation Chair in Water Resources, through a contribution to the Leading Edge Endowment Fund (LEEF). The OBWB contribution would help match a $1,250,000 grant offered by the province, and $250,000 from the BC Real Estate Foundation. The university must pull together $1,000,000 in commitments by September 2010, or the endowment offer will be withdrawn. The OBWB grant would help meet this $1,000,000 target.

The university has invited contributing institutions to form an advisory committee to influence research directions for this program. An Okanagan contribution would increase the research focus in the Okanagan, balancing the interests of the Columbia Basin Trust. The Chair is now held by Dr. John Janmaat, a natural resources economist.

UBC-O has requested a contribution in the range of $250,000 to $500,000. Although the OBWB budget will not be completed until late October, I have evaluated how these sums would fit into our budget structure. This analysis assumes that assessments will be equal to 2009. This is a conservative assumption, as assessments are likely to increase.

Next year the OBWB's water management initiative is scheduled for its 3-year review and renewal process, and we cannot make a multi-year commitment under this program.

Requisition Ceilings

Any new program must fit within the requisition ceilings of the OBWB's annual budget (see chart below).

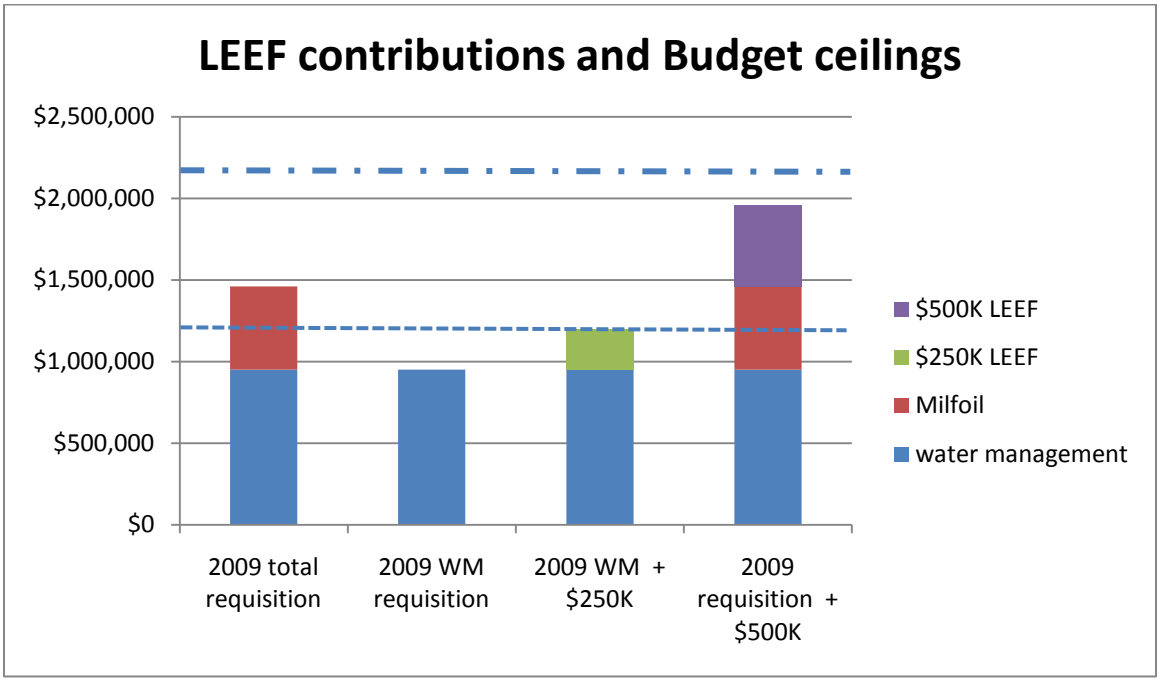
The water management initiative has a requisition ceiling of 2-cents per $1000. The Board is permitted to develop their own operating and capital budgets for water management, and these are reviewed by the regional boards within the annual budget approval process.

The water management budget and the milfoil budget (combined) must fit under the OBWB's total requisition ceiling of 3-cents/$1000. Last year our requisition was $1,459,800, about $665,000 under this ceiling. Any higher requisition must be approved by the electorate.

Analysis

A LEEF contribution of $250,000 would fit under our 2-cent water management requisition ceiling, while maintaining a similar project and operations budget.

A LEEF contribution of $500,000 would fit under our 3.6-cent total requisition ceiling, but would need separate resolutions of approval by all three regional districts. It is possible that these could be obtained before the September deadline, but there is some risk of delay.



Dotted line = $0.02/$1000 water management budget ceiling - ($1,180,500).
Dashed line = $0.036/$1000 OBWB budget ceiling - ($2,125,000)

Recommendation

That the OBWB consider a contribution of up to $250,000 under the water management initiative. The contribution is conditional on the university securing other matching funds.

a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

Office of the Dean
Irving K. Barber School of Arts and Sciences
3333 University Way
Kelowna, BC Canada V1V 1V7

Tel: 250-807-9527
Fax: 250-807-8001

June 22, 2010

Chair and Board of Directors
Okanagan Basin Water Board
1450 KLO Road
Kelowna, BC V1W 3Z4

RE: BC Regional Innovation Chair in Water Resources and Ecosystem Management

On behalf of UBC Okanagan and the Irving K. Barber School of Arts and Sciences, I would like to share a tremendous partnership opportunity that stands to benefit the communities of the Okanagan for generations to come.

The University of British Columbia, one of the world's top research universities, has been awarded a BC Regional Innovation Chair in Water Resources and Ecosystem Management. This position will sit in the Irving K. Barber School of Arts and Sciences, the largest faculty at UBC Okanagan. The Leading Edge Endowment Fund (LEEF) has committed $1.25 million dollars to establish the position. We have been tasked with putting together a $1.25 million match to create the endowment fund to support the Chair in perpetuity. This tremendous opportunity can only be realized through partnerships. This is an outstanding chance to leverage dollars for the benefit of the community around an issue of critical importance to the region – water.

Through a competitive process, with interviews of five candidates from across North America, Dr. John Janmaat, an economist with an interest in water resource economics, has been nominated for the Chair. Dr. Janmaat is a tenured professor at UBC Okanagan, and holds degrees in agriculture and economics. In collaboration with regional authorities, industry, and all levels of government, Dr. Janmaat will lead a series of research collaborations to develop innovative policy solutions to enhance the water management in BC and beyond.

A brief summary of Dr. Janmaat's research program is as follows:

- Initial activities will focus on the BC Water Act modernization process, with particular emphasis on water allocation and providing for ecosystem needs. Key future research projects will include mechanisms for water allocation and watershed governance, trans-boundary water issues in the Columbia basin, and managing interactions between land use, water resources, and ecosystem management, with special attention to the role of agriculture. The Chair will work collaboratively with natural and social scientists at UBC Okanagan and elsewhere.

By design, the LEEF program promotes partnership at every level, bringing universities, industry and the community together to create knowledge and innovation. Dr. Janmaat's research will be targeted to hands-on applications, and driven by stakeholder interests. A representative from each organization funding the endowment will sit on an Advisory Committee and work closely with Dr. Janmaat to develop research themes of interest to our partners.

To secure the $1.25 million contribution from LEEF we require matching funds from industry, government and non-government organizations, foundations, and other friends to put the position in place. The Real Estate Foundation of BC has committed $250,000. UBC Okanagan has committed $100,000. We are currently in discussions with the Columbia Basin Trust, who are eligible to contribute up to $312,000 to support the endowment. Should we be successful, the Trust will have a significant place in the partnership – forging stronger ties between the Columbia and Okanagan Basins.

It is our hope that the Okanagan Basin Water Board will signal strong support for this important project, and consider an investment in the Chair. We are asking that the Board to consider a one-time contribution of not less than $250,000, to a maximum of $500,000, ensuring a strong voice for the Board on the Advisory Committee. Your commitment will deliver tremendous benefits to the people of the Okanagan Basin.

The LEEF objectives are to attract world-class researchers to BC, promote economic growth and job creation, strengthen BC's position as a centre of excellence in research, and above all, encourage partnerships at every level for knowledge creation and innovation. The Chair, led by Dr. Janmaat, will establish UBC Okanagan as a global centre for innovative and timely solutions for watershed and ecosystem management. We strongly encourage the Okanagan Basin Water Board to join this dynamic initiative, and work together to create solutions to our urgent water resource management issues both locally and globally.

Our partnership commitments (not dollars) must be in place by September 2010 to secure the LEEF funds. Dr. Janmaat, Dr. Louise Nelson, Associate Dean Research in the Barber School and I would be pleased to make a full presentation to the Board of Directors to more clearly articulate the tremendous opportunities this project offers to the Okanagan Basin Water Board and the citizens served by it.

Sincerely,

Cynthia Mathieson

Cynthia Mathieson, PhD
Acting Dean, Irving K. Barber School of Arts and Sciences

Okanagan Basin
WATER BOARD
Science. Management. Governance.

1450 KLO Road, Kelowna, BC V1W 3Z4
P 250.469.6271 F 250.762.7011
www.obwb.ca

MEMORANDUM

Okanagan Basin Water Board
Regular meeting
July 6, 2010
Agenda No: 7.5

File No. 0550.04

To: Board of Directors

From: Nelson R. Jatel, Water Stewardship Director

Date: June 28, 2010

Subject: Groundwater Monitoring Well Project

The Okanagan Basin Water Board has identified groundwater to be a significant constituent of the water supply in the Okanagan. Previous studies have identified 10 unconsolidated aquifers and 8 bedrock aquifers that require observation wells. The Ministry of Environment recommends that these priority aquifers have monitoring wells established in order to support water management decision making and local water service planning.

In partnership with the BC Ministry of Environment, Agriculture and Agri-Food Canada, Environment Canada and the Okanagan Basin Water Board, a project proposal has been developed to support the implementation of 5 monitoring wells in 2010, with a potential of 15 observation wells to be established over the next three years, depending on funding availability.

A draft information package has been developed by the project steering committee and a copy is attached. It is anticipated that letters will be sent out to First Nations, Regional Districts and some Okanagan communities based on their proximity to the identified sensitive aquifers. The proposed project budget incorporates funding from senior government and complements the OBWB project budget approved by the Board for this fiscal year.

The need to develop strategic groundwater monitoring wells in the Okanagan was identified as a priority in the Okanagan Sustainable Water Strategy and presents an opportunity to enhance the available information for local governments making land-use decisions that may impact groundwater levels in their local jurisdiction.

30 June 2010

FN/RD / LG
Address
Address

Re: ***Okanagan groundwater monitoring project (OGMP): Enhancing groundwater monitoring in the Okanagan***

Dear [Name]:

The OGMP steering committee is looking to establish the level of interest by the [NAME] to participate in developing new monitoring wells in your local area and other strategic locations throughout the Okanagan. Local governments interested in partnering in this project will be asked to participate on the Project steering committee and contribute matching funds (see draft budget for details – Figure 1) toward the development of groundwater monitoring wells in your jurisdiction. Participating local government partners will have access to enhanced groundwater monitoring that may be useful for land-use development decisions that occur over local groundwater aquifers. This project is designed to bring together all levels of government to develop and enhance the available information about local Okanagan aquifers – with significant cost sharing support.

Environment Canada has designated the Okanagan as a priority water-limited region where many water bodies are supported by flows from groundwater. Recent scientific groundwater studies[1] show that there is a need to increase the observation wells throughout the Okanagan, both to develop better local information in priority areas, and to gain a better understanding of ongoing changes to groundwater supplies in the valley as a whole. Monitoring wells help water managers understand the basic health of the aquifers, and how they are affected by human use and changes in rain and snowfall. The management of local groundwater plays an integral role in the environmental and socio-economic sustainability of the region.

In partnership with the BC Ministry of Environment, Agriculture and Agri-Food Canada, Environment Canada and the Okanagan Basin Water Board a review has been conducted and a list of recommended strategic aquifers (see map of Proposed Aquifers for Establishment of New Observation Wells) that require water monitoring has been developed.

[1] HyGeo Consulting Review (2009); Golder Associates (2009) – Phase 2 Okanagan Water Supply and Demand Project.

The primary goal of the Okanagan Groundwater Monitoring Project is to develop fifteen (15) new observation wells in the Okanagan basin over the next three years; with five (5) monitoring wells implemented this year. Financial and on-going data collection and reporting resources have been contributed by Project steering committee team members.

A draft project budget is given below (Figure 1.) that shows estimated costs to partner Local Governments and the contributions of the Project steering committee team. The costs associated with different monitoring will vary depending on location and well depth, and will be finalized upon determination of interested Local Government partners.

Please contact Nelson Jatel at (250) 469-6295 if you are interested in further exploring participating in this project.

Sincerely,

Members of the Okanagan Groundwater Monitoring Project team

- Oleg Ivanov, Acting Section Head, Public Safety and Protection, Ministry of Environment
- Doug Edward, Regional Water Resources Engineer, Agriculture and Agri-Food Canada
- Gwyn Graham, Senior Hydrogeologist, Environment Canada
- Nelson Jatel , Water Stewardship Director, Okanagan Basin Water Board

BRITISH COLUMBIA
The Best Place on Earth

Canada

Environment Canada Environnement Canada

Okanagan Basin
WATER BOARD

Figure 1. Proposed draft budget to develop one monitoring well

Project Revenue (Proposed)	2010 **$ (1,000's)**
Ministry of Environment	
Equipment (5 monitoring stations)	8.0
On-going data collection / web reporting	5.0
Well sighting and consultation	5.0
Agriculture and Agri-Food Canada	7.5
Okanagan Basin Water Board	6.0
Local Government contribution (estimate – depends on well depth)[2]	**6.5**
Total Monitoring Well Revenue	
Expenses	
Well monitoring stations	8.0
On-going data collection / web reporting	5.0
Well sighting and consultation	5.0
Well drilling (estimate – depends on well depth)	20.0
Total Expenses	38.0
Project surplus (loss)	-

[2] Drilling of well ranges between $18,000 and $30,000 depending on depth. A figure of $20,000 was used for budgeting purposes.

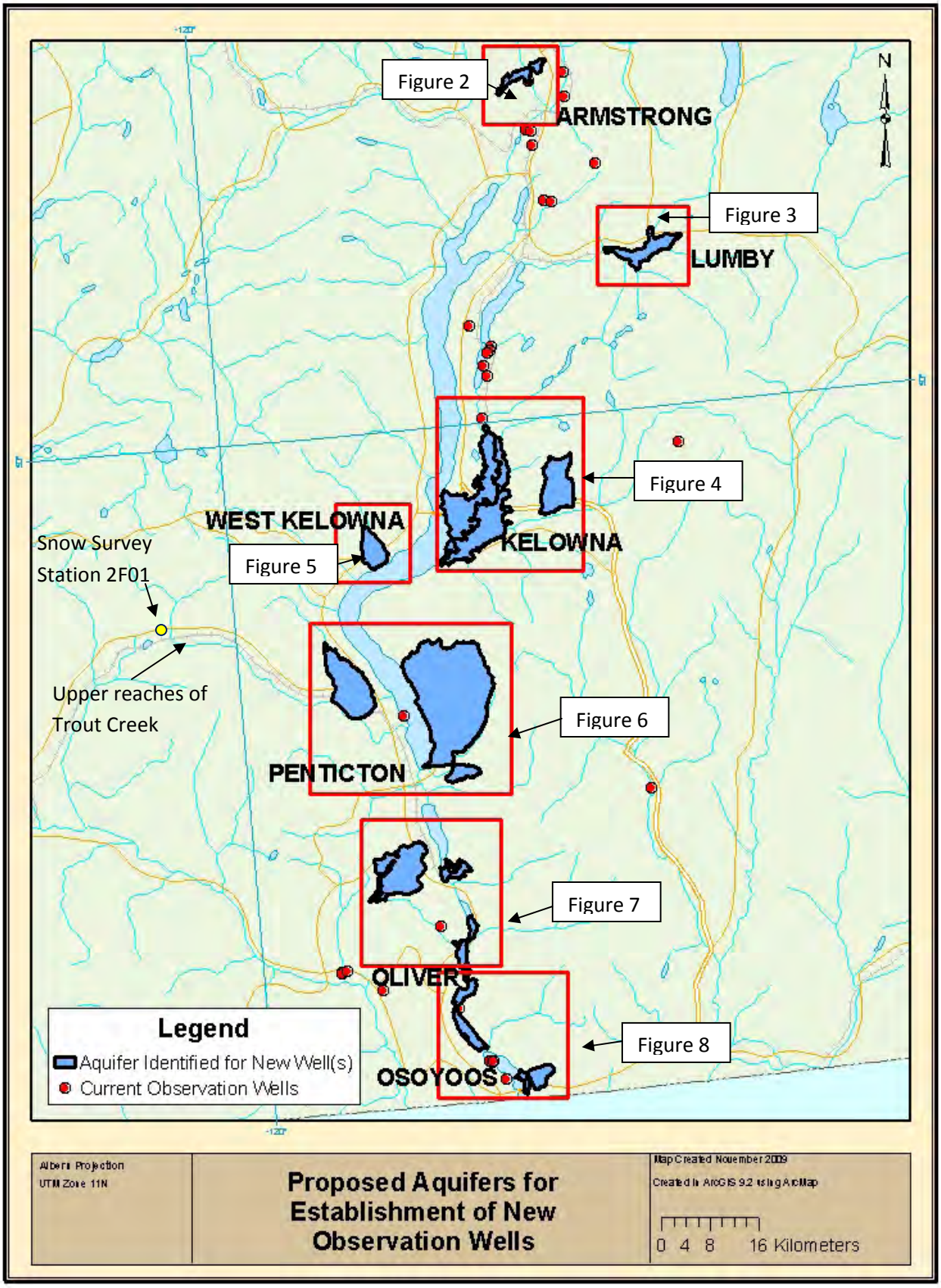


Figure 1: Overview of Proposed Aquifer Location Maps.

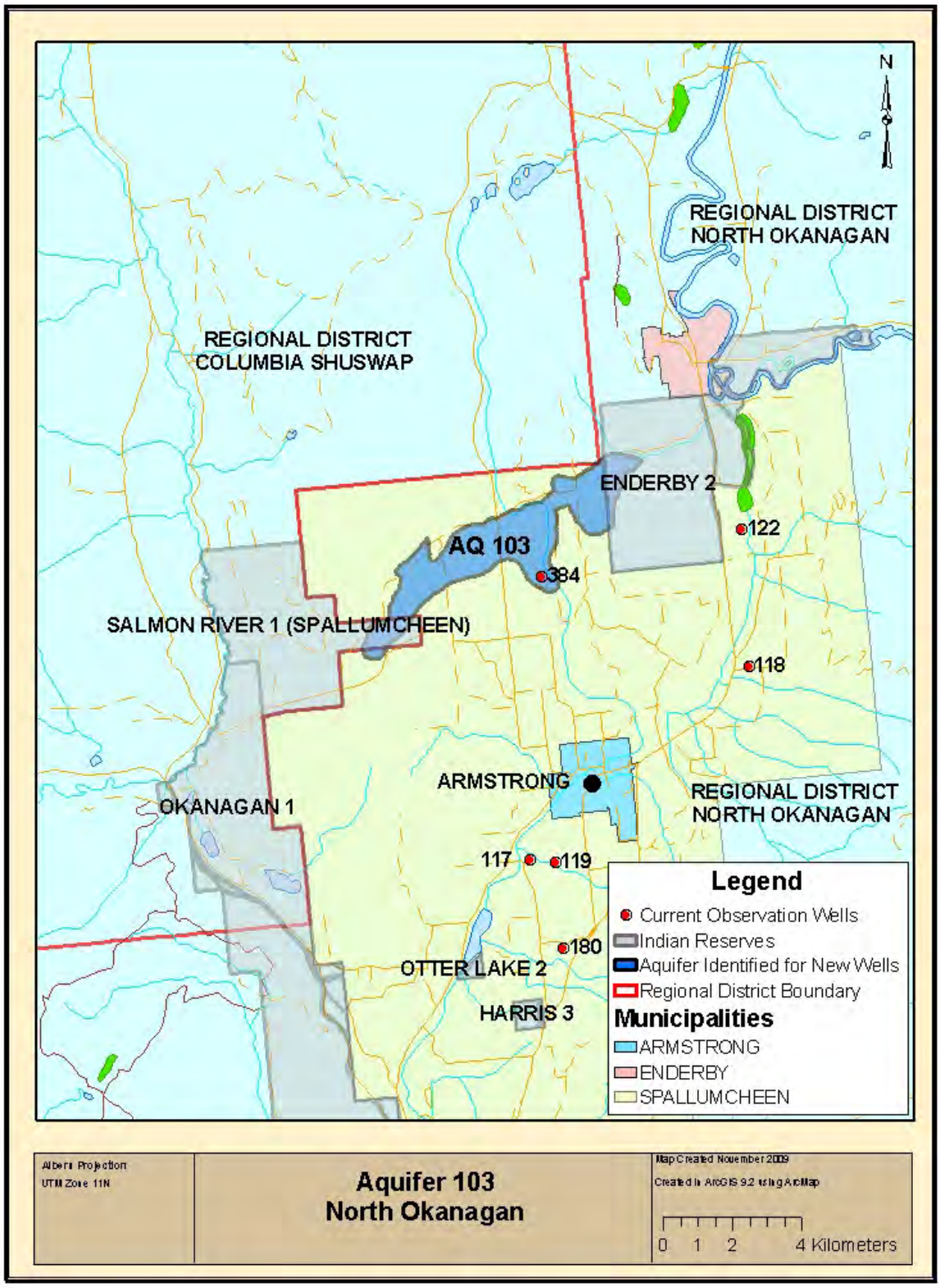


Figure 2: Proposed aquifer for establishment of new observation wells in the North Okanagan.

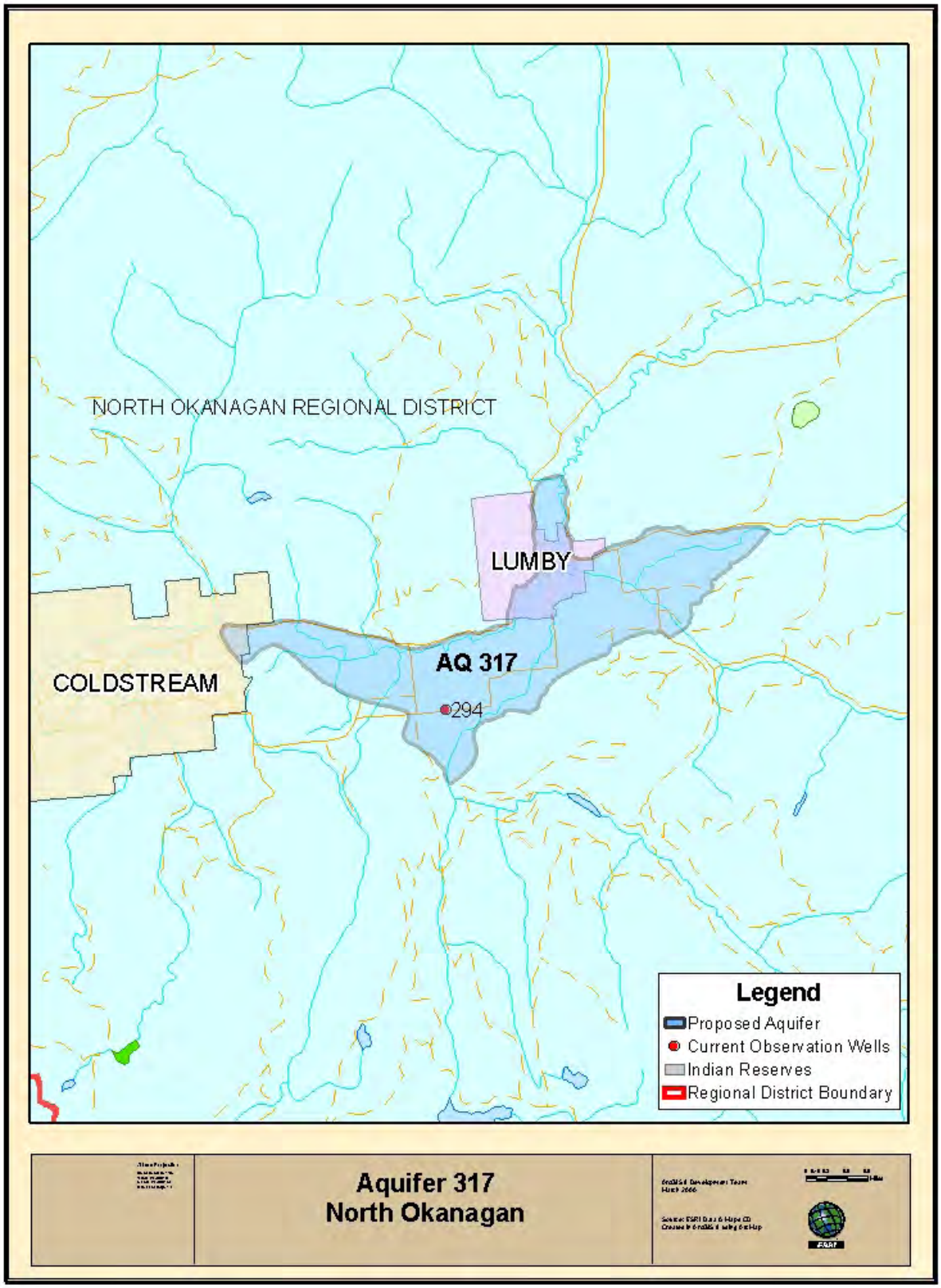


Figure 3: Proposed aquifer for establishment of new observation wells in the Lumby area.

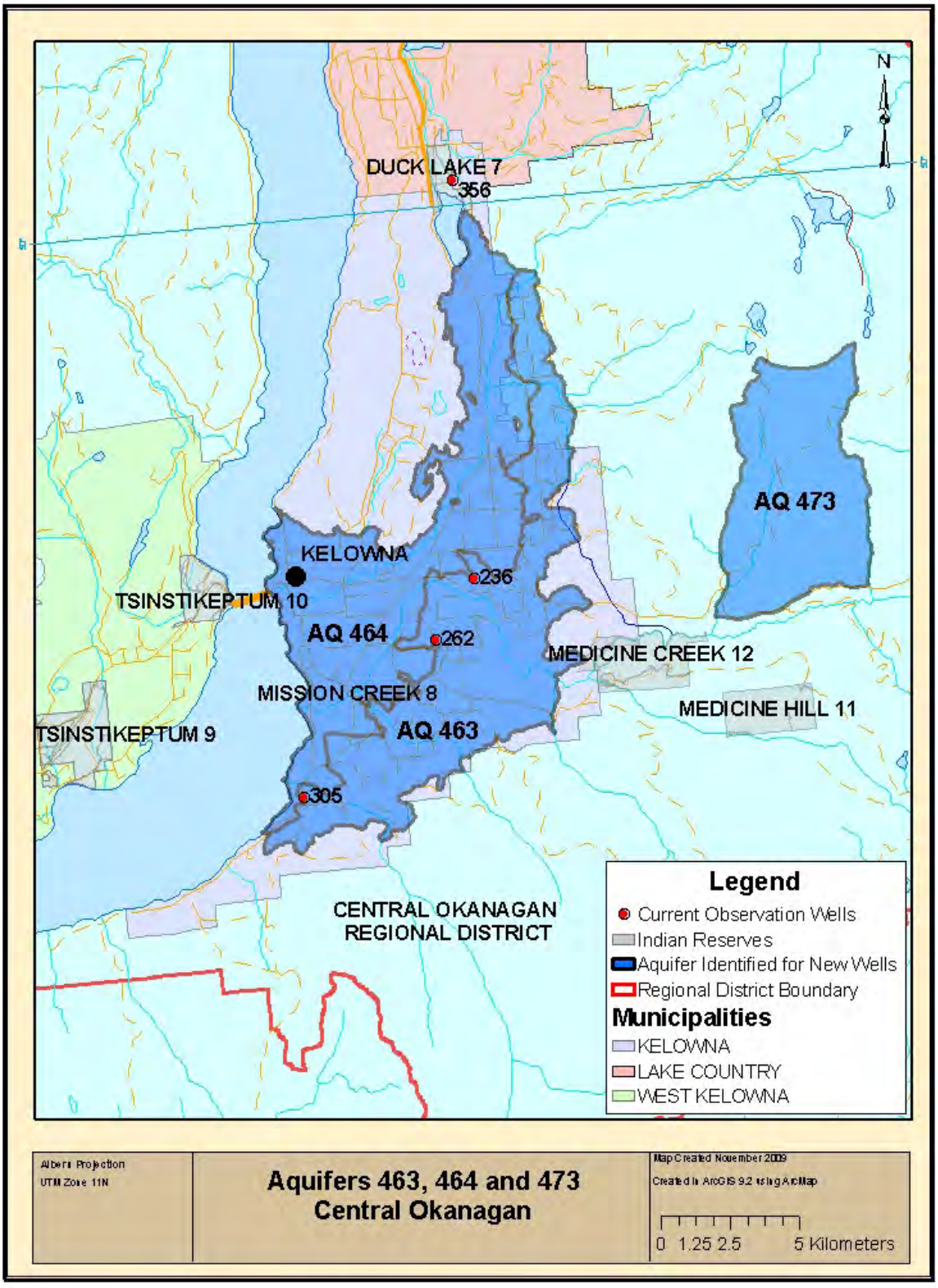


Figure 4: Proposed aquifers for establishment of new observation wells in the Kelowna Area.

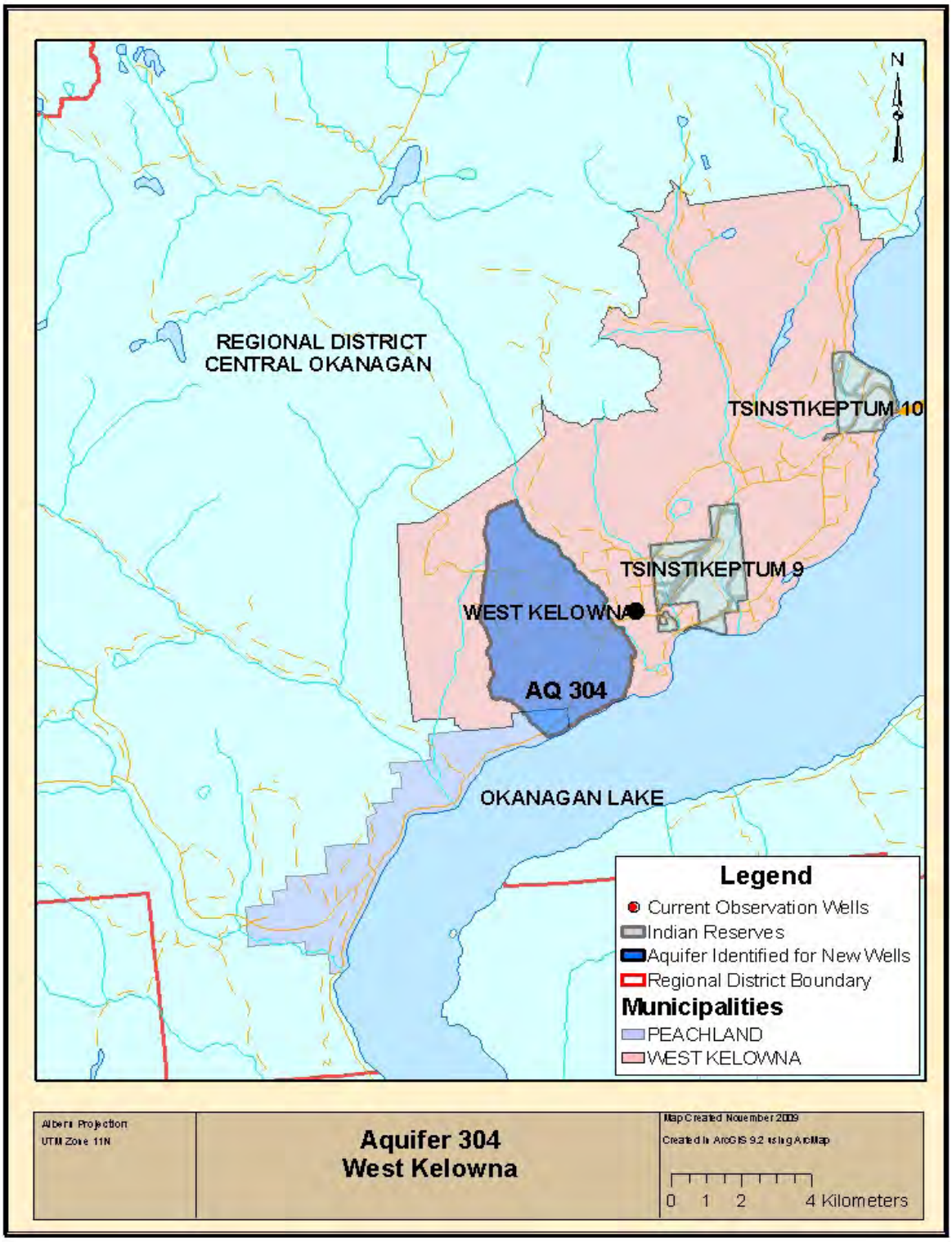


Figure 5: Proposed aquifer for establishment of new observation wells in the West Kelowna Area.

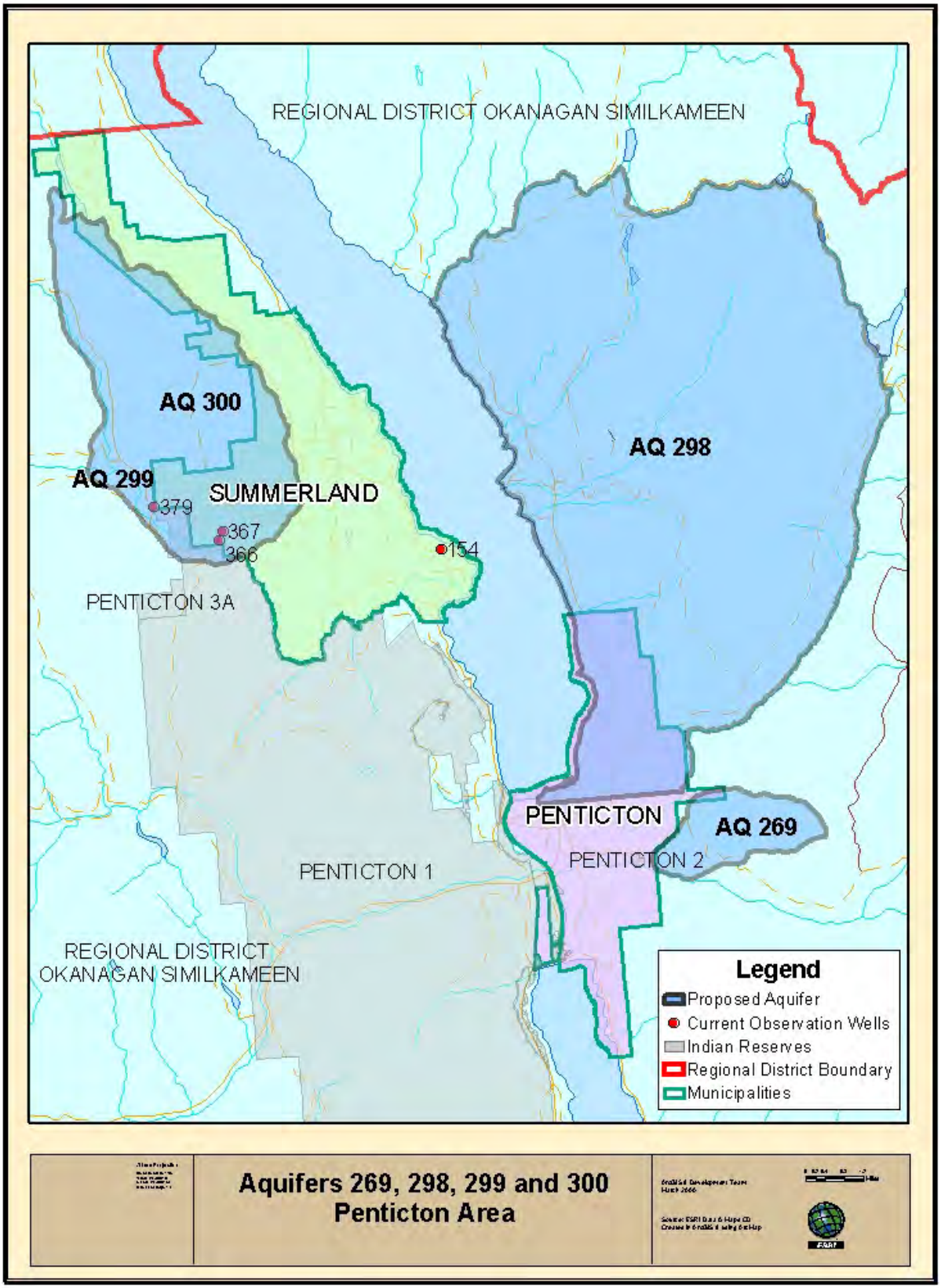


Figure 6: Proposed aquifers for establishment of new observation wells in the Penticton Area.

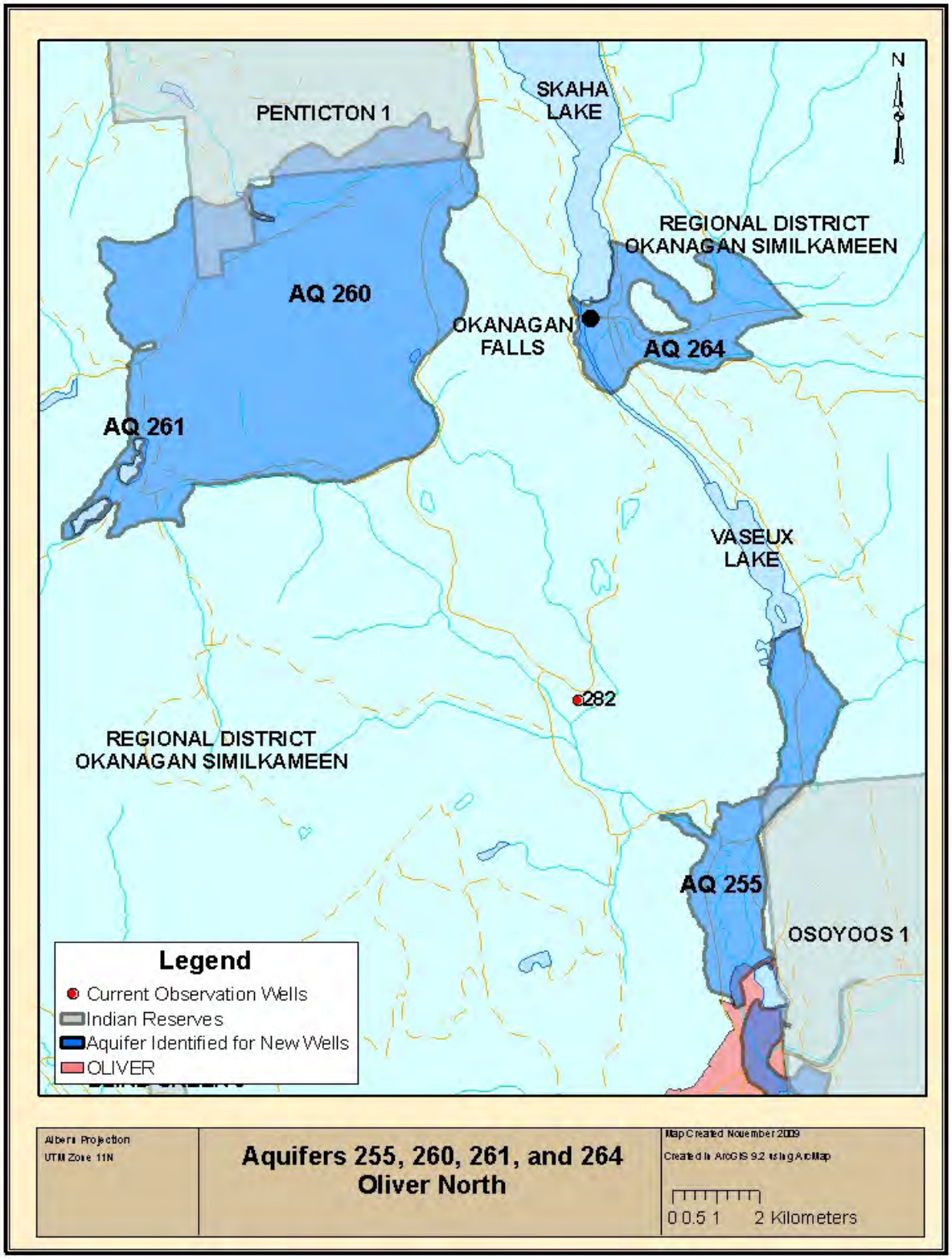


Figure 7: Proposed aquifers for establishment of new observation wells in the Oliver North Area.

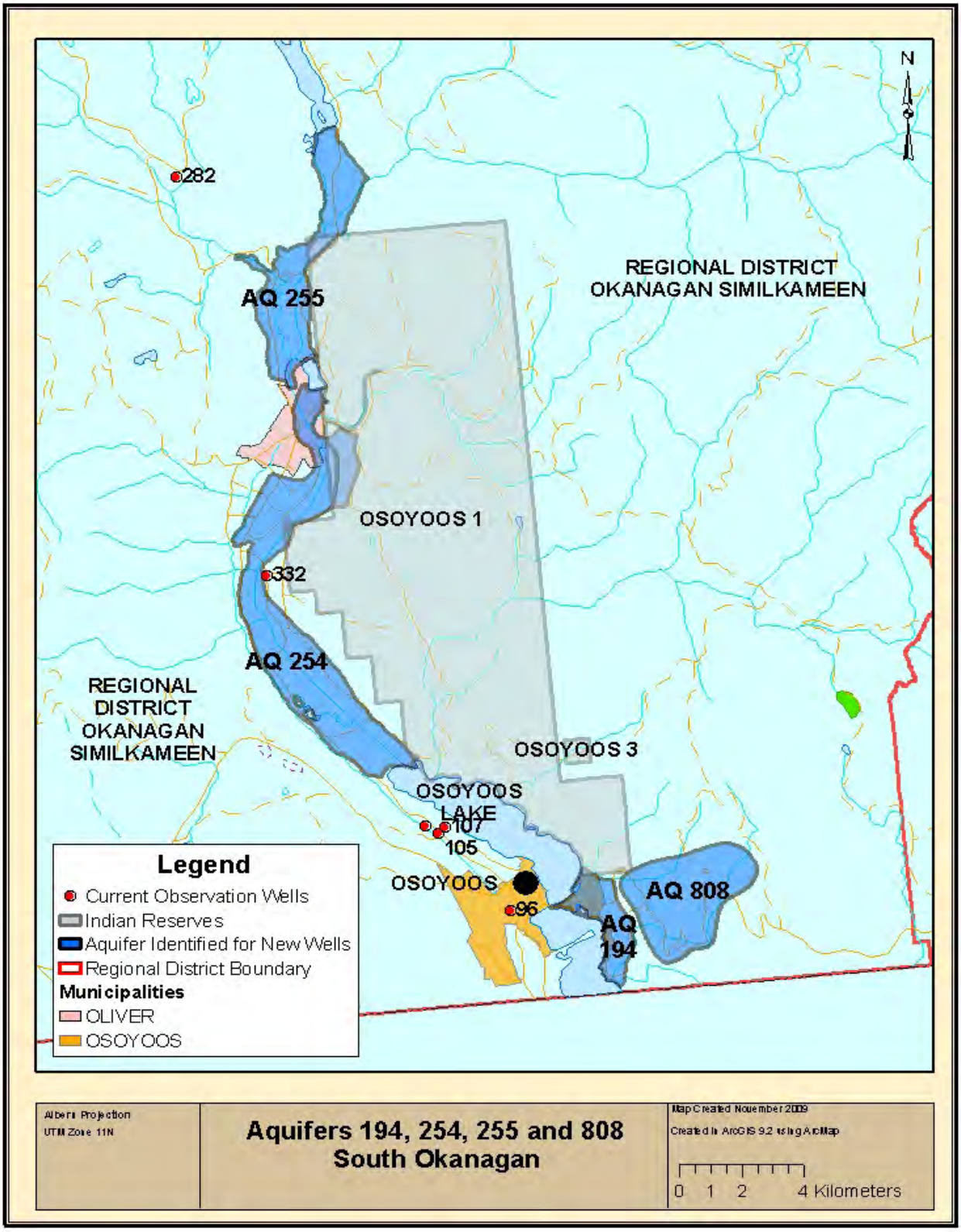


Figure 8: Proposed aquifers for establishment of new observation wells in the Osoyoos Area.

Agenda No 7.6

Regular: ☑ In-Camera: ☐

Date July 6, 2010

OBWB

Okanagan Basin
WATER BOARD

Financial Statements
For the year ended March 31, 2010

Contents

Auditors' Report

To the Chairperson and Directors of the
Okanagan Basin Water Board

We have audited the statement of financial position of the Okanagan Basin Water Board as at March 31, 2010 and the statements of operations and accumulated surplus, cash flows, and change in net financial assets for the year then ended. These financial statements are the responsibility of the Okanagan Basin Water Board's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether or not the financial statements are free of material misstatement. An audit includes examining on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the Okanagan Basin Water Board as at March 31, 2010 and the results of its financial activities and cash flows for the year then ended in accordance with accounting principles disclosed in the summary of significant accounting policies.

Chartered Accountants
Kelowna, British Columbia
June 17, 2010

Okanagan Basin Water Board
Statement of Financial Position

March 31	2010	2009
Assets		
Cash (Note 1)	$ 3,023,653	$ 2,193,890
Accounts receivable	45,149	73,846
	3,068,802	2,267,736
Liabilities		
Accounts payable	$ 292,997	$ 315,776
Grants payable (Note 7)	828,449	367,558
	1,121,446	683,334
Net Financial Assets	1,947,356	1,584,402
Non-financial Assets		
Tangible capital assets (Note 11)	246,927	264,621
Accumulated Surplus (Note 2)	$ 2,194,283	$ 1,849,023

Approved on behalf of the Board:

_____ Chief Financial Officer

The accompanying summary of significant accounting policies and notes are an integral part of these financial statements

Okanagan Basin Water Board
Statement of Operations and Accumulated Surplus

For the year ended March 31	2010 Actual	2010 Budget	2009 Actual
Revenue (Note 10)			
Levies from member Regional Districts (Note 3)	$ 3,424,301	$ 3,424,300	$ 3,454,894
Grants	821,018	712,790	184,500
Interest	16,265	101,000	83,985
Sales of services	2,674	-	9,251
	4,264,258	4,238,090	3,732,630
Expenses (Note 10)			
Administration	-	-	63,671
Sewerage facilities	1,792,337	2,069,032	2,037,955
Water management	972,177	930,500	1,088,230
Water supply and demand	632,611	882,133	744,669
Aquatic weed control	521,873	511,800	430,352
	3,918,998	4,393,465	4,364,877
Annual Surplus (deficit) (Note 9)	345,260	(155,375)	(632,247)
Accumulated Surplus, beginning of year	1,849,023	1,849,023	2,481,270
Accumulated Surplus, end of year	$ 2,194,283	$ 1,693,648	$ 1,849,023

The accompanying summary of significant accounting policies and notes are an integral part of these financial statements

Okanagan Basin Water Board
Statement of Cash Flows

For the year ended March 31	2010	2009
Operating Activities		
Annual Surplus (deficit)	$ 345,260	$ (632,247)
Non-cash charges to operations:		
Amortization	34,952	32,911
	380,212	(599,336)
Decrease in accounts receivable	28,697	267,407
Increase (decrease) in accounts payable and accrued liabilities	438,112	(142,186)
	847,021	(474,115)
Capital Activities		
Acquisition of tangible capital assets	(17,258)	(34,178)
Increase in cash during the year	829,763	(508,293)
Cash, beginning of year	2,193,890	2,702,183
Cash, end of year	$ 3,023,653	$ 2,193,890

The accompanying summary of significant accounting policies and notes are an integral part of these financial statements

Okanagan Basin Water Board
Statement of Change in Net Financial Assets

For the year ended March 31	2010	2009
Annual Surplus (deficit)	$ 345,260	$ (632,247)
Acquisition of tangible capital assets	(17,258)	(34,178)
Amortization of tangible capital assets	34,952	32,911
Net change in net financial assets	362,954	(633,514)
Net financial assets, beginning of year	1,584,402	2,217,916
Net financial assets, end of year	$ 1,947,356	$ 1,584,402

The accompanying summary of significant accounting policies and notes are an integral part of these financial statements

Okanagan Basin Water Board
Summary of Significant Accounting Policies

March 31, 2010

Nature of Business

The Okanagan Basin Water Board ("The Board") is established under Section 138 of the Municipalities Enabling and Validating Act (Province of British Columbia) and administers and operates the aquatic weed control program and the sewerage facilities assistance fund as an agent of the three participating regional districts. The participating regional districts are: Regional District of Central Okanagan (R.D.C.O.); Regional District of Okanagan-Similkameen (R.D.O.S.); and Regional District of North Okanagan (R.D.N.O.).

Basis of Presentation

These financial statements have been prepared by management in accordance with Canadian generally accepted accounting principles for local governments as recommended by the Public Sector Accounting Board (PSAB) of the Canadian Institute of Chartered Accountants (CICA).

Use of Estimates

The preparation of financial statements in accordance with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from management's best estimates as additional information becomes available in the future.

Financial Instruments

Unless otherwise noted, it is management's opinion that the Board is not exposed to significant interest, currency, or credit risks arising from these financial instruments. The fair values of these financial instruments approximate their carrying values, unless otherwise noted.

Tangible Capital Assets
Assets

Tangible capital assets are recorded at cost less accumulated amortization. Cost includes all costs directly attributable to acquisition or construction of the tangible capital asset including transportation costs, installation costs, design and engineering fees, legal fees and site preparation costs. Contributed tangible capital assets are recorded at fair value at the time of the donation, with a corresponding amount recorded as revenue. Amortization is recorded over the estimated life of the tangible capital asset commencing once the asset is available for productive use as follows:

Buildings	25 years
Equipment	10 years
Vehicles	7 years
Office Furniture & Equipment	10 years
Computers	4 years

March 31, 2010

Revenue Recognition	The levies from member Regional Districts are recognized when the levies for the fiscal year are approved by the Board and invoiced to the members. Grant revenues are recognized in the period in which they are received.

March 31, 2010

1. Cash

The Water Board's bank account it held at one financial institution, which is in excess of the $100,000 deposit insurance limit. The bank account earns interest at prime minus 1.8%.

2. Accumulated Surplus

The Board maintains a reserve for future expenditures that may be used at its sole discretion. Canadian Generally Accepted Accounting Principles require that non-statutory reserves be included with the operating surplus. The reserve and change therein included in the operating surplus is as follows:

	2010	2009
Aquatic Weed Control Equipment Reserve		
Balance, beginning of year	$ 244,581	203,246
Transfer (2010 Net Surplus)	(10,861)	42,603
Acquisition of tangible capital assets	(17,258)	(34,178)
Amortization	34,952	32,910
Balance, end of year	251,414	244,581
Invested in Tangible Capital Assets		
Balance, beginning of year	264,621	263,353
Acquisition of assets	17,258	34,178
Amortization	(34,952)	(32,910)
Balance, end of year	246,927	264,621
Sewerage Facilities Assistance Reserve Fund		
Balance, beginning of year	993,212	983,956
Transfer (2010 Net surplus)	228,557	9,256
Balance, end of year	1,221,769	993,212
Water Management Accumulated Surplus		
Balance, beginning of year	305,266	423,900
Transfer (2010 Net Surplus)	114,216	(118,634)
Balance, end of year	419,482	305,266
Water Supply & Demand Accumulated Surplus		
Balance, beginning of year	41,343	606,816
Transfer (2010 Net Surplus)	13,348	(565,473)
Balance, end of year	54,691	41,343
	$ 2,194,283	$ 1,849,023

3. Levies from Member Regional Districts

	2010 Actual	2010 Budget	2009 Actual
North Okanagan	$ 667,457	$ 667,457	$ 668,879
Central Okanagan	2,004,075	2,004,074	2,028,220
Okanagan Similkameen	752,769	752,769	757,795
	$ 3,424,301	$ 3,424,300	$ 3,454,894

4. Sewerage Facility Grants to Member Local Governments

	2010	2009
City of Armstrong	$ 114,886	$ 114,886
District of Coldstream	19,446	15,294
City of Kelowna	439,054	456,156
District of Lake Country	275,296	275,296
Town of Oliver	59,670	54,909
Town of Osoyoos	19,099	19,099
District of Peachland	223,905	223,905
City of Penticton	112,945	32,483
Regional District of Central Okanagan	13,459	102,218
Regional District of North Okanagan	4,679	4,679
District of Summerland	399,019	453,527
City of Vernon	145,183	181,949
Westbank First Nation	49,776	50,409
District of West Kelowna	85,736	-
Reverted grants	(184,816)	-
	$ 1,777,337	$ 1,984,810

5. Commitments

The Board is currently in a ten-year lease agreement, which has nine years remaining, with the Regional District of North Okanagan for the lease of a land, on which the Board's building resides on. The agreement provides for an annual lease payment of $12,800 for the first given years, and for the subsequent five years the lease amount will be indexed to the annual CPI for British Columbia. At the conclusion of the lease term, ownership of the Board's building will be transferred to the Regional District of North Okanagan. Future minimum lease payments over the next five years are as follows:

2011	$	12,800
2012		12,800
2013		12,800
2014		12,800
2015		12,800

6. Pension Plan

The Board and its employees contribute to the Municipal Pension Plan (the plan), a jointly trusted pension plan. The Board of Trustees, representing plan members and employers, is responsible for overseeing the management of the plan, including investment of the assets and administration of benefits. The plan is a multi-employer contributory pension plan. Basic pension benefits provided are defined. The plan has about 157,000 active members and approximately 56,000 retired members. Active members include approximately 35,000 contributors from local governments.

Every three years an actuarial valuation is performed to assess the financial position of the plan and the adequacy of plan funding. The most recent valuation as at December 31, 2006 indicated a surplus of $438 million for basic pension benefits. The next valuation will be as at December 31, 2009 with results available in 2010. The actuary does not attribute portions of the unfunded liability to individual employers. The Water Board paid $ 30,904 (2009 - $ 30,914) for employer contributions to the plan in fiscal 2010.

7. Grants payable

The sewerage facilities grants program provides funds for municipalities to upgrade their waste water treatment system, the Board's grants provide partial funding for debt repayment on 20-year MFA notes. The process for the sewerage facilities grants program involves municipalities requesting an approximate grant amount early in their funding process, then verifying a final grant amount once municipalities have secured MFA notes and begin making payments. Once the grants are awarded, the Board will only issue the grants based on the proper documentation submitted by individual municipalities, such as formal invoice to the Board.

The Water Conservation and Quality Improvement grant program provides funds to Okanagan local governments, improvement districts, and NGOs to support innovative, tangible, on the ground, water initiatives. The program takes a collaborative approach to water management issues and promotes more uniform standards and best practices throughout the valley. Up to $300,000 per year is made available for Okanagan projects, with individual grants ranging from $3,000 to $30,000. Grants will be expensed in the year of approval as per the budget.

8. Gas Tax Agreement

Gas Tax Agreement funding is provided by the Government of Canada. The use of the funding is established by a funding agreement between the local government and the Union of BC Municipalities (UBCM). All UBCM funds received by the Board in fiscal year 2010 were from Gas Tax grants. Included in Grant income is $347,306 for work related to the Okanagan Water Supply and Demand Project. Included in Grant income for the Water Management Project is $55,000 for the Groundwater Bylaws Toolkit. 100% of the funds the Board received for both projects was spent on projects. No funds were spent on administration. Grants were paid in arrears, and no interest was earned on unspent funds.

9. Budget Information

The budget adopted by the Board was not prepared on a basis consistent with that used to report actual results based on current Public Sector Accounting Standards ("PSAB"). The budget was prepared on a modified accrual basis while PSAB now require a full accrual basis. The budget figures anticipated use of surpluses accumulated in previous years to reduce current year expenses in excess of current year revenues to $nil. In addition, the budget expensed all tangible capital expenses rather than including amortization expense. As a result, the budget figures presented in the statements of operations and change in net debt represent the budget adopted by the Board with adjustments as follows:

	2010
Budget surplus (deficit) for the year as per board budget	$ -
Add:	
Transfers to Capital Reserve funds budgeted for in expenses	152,968
Less:	
Revenue from previous years reserve funds/surplus in revenues	(308,343)
	-
Budget surplus (deficit) per statement of operations	$ (155,375)

10. Segment Disclosure

Water Management

This initiative undertakes projects and programs that support water sustainability in the Okanagan. This is the original mandate of the Board, providing leadership and coordinating water management activities in the best interests of man. The initiative includes a Water Conservation and Quality Improvement Grants program, water education and outreach, acting as an advocate for Okanagan concerns to senior government, and establishing the science and monitoring systems required for informed decision making.

Water Supply and Demand

This project is a multi-year assessment of water availability in the Okanagan. It is being conducted as a partnership between the Board, the Ministry of Environment, and nine other agencies and universities. The second phase of the project was completed in March 2010, the third phase if funded and got underway in calendar 2010. The Board is the financial administrator for the project, receiving grants, holding funds and issuing contracts.

Aquatic Weed Control

This program controls the growth of Eurasian watermilfoil in the shallow waters around Okanagan beaches and boating areas. This is a year-round program managing weed growth with rototillers in the winter and harvesters in the summer. The goal of the program is to keep public areas clear of weeds, but when time allows operators and equipment will also do contract work on a cost-recovery basis.

Sewerage Facilities Assistance

This program reduces the discharge of polluted water to Okanagan lakes and streams by supporting upgrades of sewerage treatment plants and community sewers. Grants go to Okanagan municipalities as a local match for senior government infrastructure funding. It is one of the Board's longest-running programs, and has led to great improvements in water quality.

Administration

Administration costs are allocated into four programs above.

10. Continued - Segment Disclosures for the year ended March 31, 2010

	Water Management	Water Supply and Demand	Aquatic Weed Control	Sewerage Facilities	Consolidated
Revenues					
Levies (Note 3)	$ 917,500	$ -	$ 506,800	$ 2,000,001	$ 3,424,301
Grant income	166,363	644,655	-	10,000	821,018
Interest income	2,530	1,304	1,538	10,893	16,265
Sale of services	-	-	2,674	-	2,674
	1,086,393	645,959	511,012	2,020,894	4,264,258
Expenses					
Assistance grants(Note 4)	351,770	-	-	1,777,337	2,129,107
Amortization	-	-	34,952	-	34,952
Contract services	121,594	751,404	-	-	872,998
Director's remuneration and expenses	11,366	-	10,492	-	21,858
Equipment costs	403	-	109,911	-	110,314
Insurance	-	-	23,107	-	23,107
Interest charge	444	-	170	-	614
Office	16,474	-	14,851	-	31,325
Outreach and publicity	30,240	2,170	1,244	-	33,654
Overhead allocation	-	-	(15,000)	15,000	-
Professional fees	26,189	-	25,840	-	52,029
Rental costs	7,656	-	20,456	-	28,112
Safety	310	-	1,496	-	1,806
Stewardship council expenses	8,719	-	-	-	8,719
Travel, conferences and meetings	13,365	1,037	1,138	-	15,540
Utilities, yard supplies and maintenance	-	-	5,579	-	5,579
Wages and benefits	261,647	-	287,637	-	549,284
Water management initiative	122,000	(122,000)	-	-	-
	972,177	632,611	521,873	1,792,337	3,918,998
Net revenue (expenses)	$ 114,216	$ 13,348	$ (10,861)	$ 228,557	$ 345,260

10. Continued - Segment Disclosures for the year ended March 31, 2009

	Administration	Water Management	Water Supply and Demand	Aquatic Weed Control	Sewerage Facilities	Consolidated
Revenues						
Levies	$ -	$ 934,893	$ -	$ 520,001	$ 2,000,000	$ 3,454,894
Grant income	-	34,500	150,000	-	-	184,500
Interest income	4,876	17,239	14,659	-	47,211	83,985
Sale of services	-	-	-	9,251	-	9,251
	4,876	986,632	164,659	529,252	2,047,211	3,732,630
Expenses						
Assistance grants	-	627,361	-	-	1,984,810	2,612,171
Administration	-	-	-	20,961	-	20,961
Amortization	-	-	-	32,911	-	32,911
Contract services	-	41,479	730,662	5,113	-	777,254
Directors' remuneration and expenses	3,487	16,233	3,304	-	-	23,024
Equipment costs	-	-	-	72,892	-	72,892
Fuel costs	-	-	-	22,313	-	22,313
Insurance	1,001	-	-	21,653	-	22,654
Office	16,905	24,085	-	4,898	-	45,888
Overhead allocation	-	-	-	(15,000)	15,000	-
Professional fees	9,750	12,250	-	4,600	-	26,600
Rental costs	-	-	-	28,859	-	28,859
Sundry	4,437	-	7,411	-	-	11,848
Telephone, communications and utilities	-	-	-	12,621	-	12,621
Travel	-	6,194	3,292	138	-	9,624
Wages and benefits	28,091	251,951	-	218,393	-	498,435
Water management initiative	-	108,677	-	-	38,145	146,822
	63,671	1,088,230	744,669	430,352	2,037,955	4,364,877
Net revenue (expenses)	$ (58,795)	$ (101,598)	$ (580,010)	$ 98,900	$ 9,256	$ (632,247)

For the year ended March 31, 2010

11. Tangible Capital Assets

	Buildings	Equipment	Vehicles	Office Furniture & Equipment	Computers	2010 Total	2009 Total
Cost							
Balance, beginning of year	$ 118,352	$ 737,680	$ 128,653	$ 2,250		$ 986,935	$ 952,757
Additions	-	15,153	-	-	2,105	17,258	34,178
							-
Balance, end of year	118,352	752,833	128,653	2,250	2,105	1,004,193	986,935
Accumulated amortization							
Balance, beginning of year	9,278	598,194	112,592	2,250		722,314	689,404
Additions	4,734	26,480	3,212	-	526	34,952	32,910
							-
Balance, end of year	14,012	624,674	115,804	2,250	526	757,266	722,314
Net book value	$ 104,340	$ 128,159	$ 12,849	$ -	1,579	$ 246,927	$ 264,621

11. Continued - Tangible Capital Assets

	Buildings	Equipment	Vehicles	Office Furniture & Equipment	Computers	2009 Total	2008 Total
Cost							
Balance, beginning of year	$ 113,599	$ 708,255	$ 128,653	$ 2,250	$ -	$ 952,757	$ 886,313
Additions	4,753	29,425	-	-	-	34,178	66,445
							-
Balance, end of year	118,352	737,680	128,653	2,250	-	986,935	952,758
Accumulated amortization							
Balance, beginning of year	4,544	573,230	109,380	2,250	-	689,404	620,156
Additions	4,734	24,965	3,211	-	-	32,910	69,248
							-
Balance, end of year	9,278	598,195	112,591	2,250	-	722,314	689,404
Net book value	$ 109,074	$ 139,485	$ 16,062	$ -	$ -	$ 264,621	$ 263,354

12. Comparative Figures

Certain comparative figures have been reclassified to conform to the financial statement presentation adopted for the current year.

Environment Canada | Environnement Canada
201 – 401 Burrard St
Vancouver, BC
V6C 3S5

Agenda No: 8.1
Regular: ☑ In-Camera: ☐
Date: July 6, 2010
OBWB

June 24, 2010

Anna Warwick Sears
Executive Director
Okanagan Basin Water Board
1450 KLO Road
Kelowna, BC V1W 3Z4

Dear Ms. Warwick Sear:

I am pleased to advise you that Environment Canada ("EC") is considering making a financial contribution to the Okanagan Basin Water Board (OBWB).

The overall purpose of the financial contribution is to further institute strategic program and policy linkages to local and regional mechanisms, responsible jurisdictions or other decision-making processes to maximize linkages, synergies and efficiencies on water quality/ quantity, biodiversity conservation, and Species at Risk Recovery interventions in the Okanagan.

EC will contribute up to $40,000, to the OBWB payable over Project duration for work completed by March 31, 2011.

In order for your project to be funded, a contribution agreement must be entered into between EC and the OBWB. Greg Ambrozic from the Ecosystem Coordination Office will be contacting you to begin negotiating the agreement.

Please note that no payments will be made by EC prior to the signature of the agreement. Furthermore payments may only be made if the OBWB meets all of the terms and conditions set out in the agreement.

Expenditures made by the OBWB for the project after the date of this letter and before the agreement is signed may be considered for reimbursement by EC, provided that these expenditures are described in the agreement.

I look forward working with the OBWB on this project.

Sincerely,

Ian MacLeod
A/Mgr – Ecosystem Coordination Office

Canada