

Source Water Protection Session Summary

Okanagan Water Stewardship Council Discussion Series

For the meeting of January 11, 2007

In 2006 and 2007, the Okanagan Water Stewardship Council (Council) intends to review the major water resource issues of the Okanagan Basin. The following summary outlines presentations made to the Council, and provides a synthesis of the discussion that followed. The ideas expressed here represent a work in progress, and *do not in any way* signify policy positions of the Council, or of the Okanagan Basin Water Board.

Objective

The objective of this meeting was to investigate the current status of source water protection in BC: what this means to different agencies and organizations, and the implications for watershed protection and drinking water quality. Protecting source areas whether in the upper watersheds for surface waters, or water recharge areas for groundwater – provides the most cost-effective means of protecting the quality of drinking water, as well as habitat for fish and wildlife. Source area protection can also protect water supplies, by helping ensure that there will be possibilities for future reservoir expansion.

Presenters

- Valerie Cameron, Water Stewardship Division, BC Ministry of Environment
- Elizabeth Sigalet, Assistant Director (Drinking Water), Health Protection, Interior Health Authority
- Lee Hesketh, Farmland Riparian Interface Stewardship Program, B.C. Cattlemen's Association

Presentations

Slides of all presentations can be viewed on the Okanagan Basin Water Board website at:

<http://www.obwb.ca/presentations/>

I. Valerie Cameron: *Source Protection in BC: Challenges and Opportunities***Background**

The term “source water protection” is generally applied to the protection of drinking water sources. Drinking water comes from both surface and groundwater sources. Watersheds are the source areas for surface waters: lakes and streams, and aquifers are the source of groundwater wells and springs.

About 59% of BC's drinking water is from protected watersheds, serving the 2.5 million residents of Greater Vancouver (GVRD) and Greater Victoria (CRD). The lands in these watersheds are either owned fee-simple, or are protected with a 999 year Crown land lease. The remaining 1.75 million residents take their water from unprotected sources, mostly on crown land: of these, 60% get their water from surface sources, and the remainder from groundwater. Water suppliers outside of GVRD and CRD are concerned that they do not have authority to control activities in their water source areas, yet are responsible for the safety of the drinking

water from these areas. If water quality isn't protected in the upper watersheds, a much greater reliance must be placed on water treatment.

The Auditor General's 1999 report on Protecting BC's Drinking Water Quality pointed out that one of the biggest gaps was having no single agency responsible for protecting drinking water source areas, or for regulating the activities of different resource users (recreation, grazing, forestry, mining, etc...) in the watershed. As a consequence, any protection would have to come about through *ad hoc* communication between agencies. Small water systems in remote areas are particularly vulnerable, because they are more likely to be impacted by resource development, and remote communities are less likely to have the money to establish alternate water sources or better treatment systems. The Auditor General also felt that the lack of legislation for protecting or managing groundwater was a serious problem. The Auditor General's report led to the development of the Drinking Water Protection Act (DWPA), the most powerful piece of legislation available for Source Area Protection.

Regulatory Tools for Source Protection

The DWPA places responsibility for drinking water under the Ministry of Health, and contains broad powers for protecting source watersheds. Under this Act, Drinking Water Officers (DWOs) can order *source-to-tap* assessments and assessment response plans and issue hazard prevention and hazard abatement orders. The Act also enables the development of Drinking Water Protection Plans (DWPP) that can restrict and regulate land use activities that threaten drinking water quality. However, there are many details still to be worked out for how to best implement this legislation, and at this time, no DWPP has been initiated in B.C.

Like DWPPs, Water Management Plans (enabled under the Water Act), can also be used for Source Area protection by regulating land use and addressing water use conflicts, but this is also new legislation, with the first pilot plan still under development in Langley. The Forest and Range Practices Act (FRPA) allows designation of *community watersheds* on crown land areas less than 500km². In these designated areas, the Ministry of Environment can develop water quality objectives that forest licensees must consider when planning forestry activities. None of the Okanagan's community watersheds now have established water quality objectives, but eight watersheds are in the process. The Environmental Management Act (EMA) restricts a number of activities that pollute drinking water. The Land Act allows crown land leases, reserves and land-use restrictions in watersheds. The Greater Vancouver and Capital Regional Districts both have protected Source Area watersheds through 999 year leases under the Land Act, but the ability to obtain such leases was eliminated in the 1970s.

Ongoing Issues for Source Area Protection

Okanagan's drought-adapted ecosystems are naturally fragile, and vulnerable to man-made disturbance. The vast majority of the land in the upper watersheds is crown land, designated for "multiple uses," in which water is not given priority over mining or forestry. The Okanagan population is growing rapidly, and stream and lakeshore areas are prized for luxury homes. In addition, climate change is predicted to increase the rate and volume of the spring freshet, which along with pine beetle damage will increase the risk of erosion, sedimentation and increased turbidity.

Although the Province has given substantial powers for watershed protection to the Ministry of Health (through the DWPA), there are still many overlapping and conflicting jurisdictions involved with land use and regulation. With so many agencies and interests involved, it is difficult to ensure accountability. Who is responsible for addressing any given problem? The recent memorandum of understanding between the Ministry of Health, the regional Health Authorities and the other Ministries involved with regulating watershed activities, is intended to promote communication and cooperation for responding to different water quality issues.

With the goal of reducing government red tape, provincial policy has shifted toward deregulation and ‘results-based’ approaches for watershed management, rather than requiring set best management practices or other restrictions. Currently, water suppliers are responsible for assessing and remediating threats to drinking water in the watersheds, but they have not been given financial assistance or authority to restrict activities that may impair water quality. Lack of staff and funding at the local and provincial level also limits the extent that watersheds can be monitored, and that enforcement can take place.

Nonetheless, there are significant opportunities for progress. The Okanagan public has become increasingly aware of water issues, and there is political support for finding solutions. There is more recognition of the value of partnerships and collaborations across jurisdictions. The Okanagan Basin Water Board and the Okanagan Water Stewardship Council have the potential to take leadership roles promoting better policy for Source Area Protection, and there is also potential for significant legislative and governance changes as the Province develops its new Water Strategy.

II. Elizabeth Sigalet: *Source Protection*

The 1999 Auditor General’s report called for one agency or entity to oversee and protect drinking water sources, and in 2003, the Drinking Water Protection Act (DWPA) assigned this task to the Ministry of Health and the Provincial Health Authorities, in consultation with other Ministries, industry and institutions. The DWPA recognizes drinking water as a public health issue, and focuses on prevention and protection from source-to-tap. The Interior Health Authority’s (IHA) vision of source protection is “Healthy People, Healthy Places,” seeking a holistic approach to protecting watersheds and water sources. To achieve this vision, the IHA adheres to the principle that health objectives for watershed management should be based on scientific evidence.

Population health

IHA takes a *population health* approach, placing the most emphasis on activities that protect the health of the largest number of people – in the highest risk, highest population areas. For this reason, the greatest focus and strictest operating conditions are given to large water supply systems, through guidelines developed under the Drinking Water Quality Improvement Program. However, in an effort to promote uniform water quality, Interior Health has been working to establish the ‘4-3-2-1-0’ treatment standards across the region. Out of the 85 largest systems, only 20 now meet these standards. IHA bases its turbidity policies on reports finding that water-borne disease outbreaks are often linked with extreme storm events that produce high turbidity

and overwhelm water treatment operations, so it is important to have optimally-functioning plants and well-trained operators.

Hazard abatement is another primary concern of health officials. The DWPA has specific stipulations against contaminating water supplies, and requires all public servants to report activities that are likely to threaten drinking water quality. If the Drinking Water Officer (DWO) orders a hazard abatement action, that action can be required at the expense of the individual causing the violation.

Land-use planning

Economic wellbeing is one of the factors that determine the health of communities. For this reason, IHA supports the concept of multi-use watersheds, providing that water quality is not overly-threatened by resource development and recreational use. Nonetheless, it is a challenge to make appropriate land-use decisions that protect water quality. Although the DWPA has given the Health Authorities broad powers to regulate watershed activities, the IHA does not wish to duplicate the efforts and in-house expertise of other Ministries. In a situation with high expectations and limited staff and funding, how many resources should be dedicated to source protection, and who should be responsible for taking action? IHA's primary responsibility is to identify imminent risks to public health, and it seeks to work with the other Ministries ensure that resource development and recreation do not harm water quality. Managing watershed activities to protect drinking water cannot replace the need for drinking water treatment, and vice versa.

The Ministry of Health, the Provincial Health Authorities and a range of other ministries have recently signed a memorandum of understanding (MOU) to identify and address key issues for source protection. The MOU also addresses specific concerns of different geographic areas, by calling for the formation of Regional Drinking Water Teams, and consultation with stakeholders. Ideally, ministries with authority for approving activities that can affect drinking water quality should require resource users to develop land-use plans, created with the participation of local stakeholders. The IHA would like to see land-use plans that:

- Identify all the drinking water sources in the planning area;
- Recognize the protection of drinking water as the primary concern;
- Develop a watershed assessment of risks to drinking water;
- Develop contingency plans that include contact information for IHA and affected water suppliers;
- Include mutual oversight and monitoring of water quality by the resource user and the approving body;
- Include provisions for the water supply to be restored to its pre-existing condition.

Land-use planning example

The Regional District of North Okanagan (RDNO) received a request of support from the Cattlemen's Association for new range tenures in areas proposed for salvage logging following pine beetle kill. Some grazing tenures already exist in these areas, and although testing by Dr. Cindy Meays indicates that more than 50% of water samples are positive for fecal coliforms, most of these can be attributed to wildlife. Cattle grazing is a difficult issue, and impacts are related both to stocking rates and grazing management. The surface water supply-systems are not

filtered, and Greater Vernon Water, the only large system, may not have filtration in place for 10 years to come. The Cattlemen's request to RDNO identified the economic benefits of the grazing tenures, but RDNO wished to minimize cattle impacts on water quality. RDNO requested the input of IHA after agreeing to support the concept of new tenures (with conditions).

For their part, the IHA expects that watersheds will have shared uses. Nonetheless, there are many public health risks associated with cattle grazing and other activities in watersheds. IHA recommended that RDNO and other approval agencies consider impacts on drinking water when making this land use decision. Health officials pointed out that in the future if treatment systems are in place, there can be more confidence in having multiple-use watersheds. RDNO is forming a watershed protection group that will evaluate the potential to manage impacts on watersheds in a more collaborative way, seeking to not exceed current levels of impact despite higher stocking rates, and to improve current management practices.

Role of water suppliers

The Interior Health Authority has 50 DWOs with responsibility for more than 1600 water supply systems, and a population of almost 700,000. As a consequence, IHA ultimately relies on water suppliers to ensure the quality of water they provide to their customers. DWOs can require water suppliers to conduct assessments of the land use activities and conditions that affect the quality of water arriving at treatment facilities. In 2006, the Water Supply Association of BC identified five primary concerns for source protection in watersheds: (1) cattle grazing; (2) sewage disposal; (3) recreational uses including boating and camping; (4) logging, especially salvage-logging for pine beetle kill; and (5) increased pressures for development. Watershed assessments are necessary to determine which of these factors has the greatest impact on the health of any particular watershed and how these factors interact with one another. Following assessments, the DWO can also require suppliers to prepare response plans determining what measures should be taken to address any threats to water quality. Based on these assessments, the Minister of Health may designate specific watershed areas as candidates for development of a Drinking Water Protection Plan.

For its part, the IHA will seek to provide well-trained DWOs, skilled in identifying health hazards. The IHA also intends to develop appropriate 'triggers' for watershed assessments; and could potentially help facilitate stakeholder groups. IHA has also been working to provide consistent ways to document problems in order for action to be taken.

III. Lee Hesketh: *Farmland Riparian Interface Stewardship Program (FRISP)*

FRISP is a partnership between the BC Cattlemen's Association (BCCA) and the Ministry of Environment that works directly with ranchers to help them meet environmental stewardship objectives, and to assist ranchers in working with regulatory agencies. Through this program ranchers can receive free technical advice for work that can include:

- Technical background, prescriptions and cost estimates for riparian enhancement, waste management, or restoration projects

- Mediation service between landowners and regulatory agencies in regards to riparian damage resulting from agricultural practices, including assistance in the development of remediation plans.
- Joint planning of habitat restoration and farmland activities between landowners, resource management agencies and community groups.
- Leveraging of provincial funding to access other funding sources for prescriptions and work projects.

Traditional range management practices are not necessarily in conflict with environmental values, but there are often still conflicts between regulatory agencies and ranching operations – especially related to the growing number of laws and policies designed to protect and enhance ecosystem diversity and water quality. The overall objectives of the FRISP program are to increase understanding and cooperation between farmers and agencies; promote joint planning of habitat restoration and farmland activities; and increase awareness of interactions between land-use and habitat values.

Through programs like FRISP and the Environmental Farm Plan, ranchers are encouraged to be proactive and address problems before they become conflicts. The difficulty is finding ways to change management practices without impacting the economic sustainability of an operation already struggling to maintain itself. The regulatory process is complex and often confusing, and ranchers may be pressed for the time it takes to learn the guidelines and permitting process. Problems range from tight budgets and traditional thinking, to regulatory conflicts, poor management, bad attitudes, and bad luck with Mother Nature.

As it stands now, there are conflicting rules for water management that interfere with good range management. For example, a rancher may have had a long-term grazing lease on a piece of property with cattle watering in the stream. In order to establish an off-stream watering area to reduce impacts on the riparian zone, the rancher has to get a water license from the Ministry of Environment. If the stream is fully-allocated, the rancher won't be able to get the license, so the cows will have to continue watering in the stream. On fully-allocated streams, the cattle may have larger proportional impacts on short supplies of water.

Forest companies have recently been given more responsibilities for stewardship on crown lands. For example, they may be asked to cover the cost of fencing for cattle in streams. However, there are minimal requirements for consultation, and a lack of communication with ranchers, who may only hear about a logging operation through the newspaper. There needs to be fairness about identifying water quality protection responsibilities and expectations to people involved in activities in the watersheds.

Scientific studies can be very useful to identify needs and best practices. For example, a proposal has been made to conduct a nitrate assessment in the Okanagan Basin. Some of the key objectives would be to:

- Collect baseline data on soil nitrogen, phosphorus and potassium status in the Okanagan Basin.
- Assess and compare soil nutrient status across climate zones, geographic areas, soil types, and crop types.

- Collect soil information that will provide useful information for water conservation (e.g. water storage capacity) as well as validating and updating soil maps.
- Develop new soil testing techniques that can be used for both agronomic and environmental purposes.

This study will help determine which management practices are causing specific problems in the Okanagan, and how to improve them.

The ranching industry is often blamed for water quality problems, but there are many pathogen sources in our watersheds: septic fields, wildlife, cattle, and others. Researchers with Agriculture Canada have been developing DNA-tracking techniques to determine the main contributors to *E. coli* loading in different drainages. There are also many sources of erosion and riparian degradation, so we must look more comprehensively at watershed management. Removing cattle from the watersheds will not solve all the problems. Many rangeland ecologists have discovered that appropriate grazing is an essential component of healthy grasslands and rangelands. There is no reason to not have mutual goals of having healthy landscapes, healthy ranching industry and healthy water quality. Overall, FRISP hopes to reduce conflicts through finding common ground between the agricultural sector and society's demands for natural resource protection, and by providing workable solutions.

IV. Staff Synthesis of Discussion

The following section is a synthesis of the discussion that followed the presentations. It reflects the opinions put forth at the meeting, but does not represent consensus ideas, or the last word of the Council on these items. This synthesis was developed by OBWB staff using notes taken during the discussion, rather than verbatim minutes.

There are many tools available for watershed protection, but none of these is without flaws, and all are difficult to implement. The Drinking Water Protection Act was put in place to rectify this situation, but it may be some time before the actual mechanisms for watershed protection can be effectively used.

One basic question is, what are the goals of source protection, and how broadly should the DWPA be interpreted? For public health officials, the focus is on human health protection, as measured by water quality indicators. IHA is primarily concerned with providing the greatest level of protection for the greatest number of people, and is working with limited resources. They have established water quality standards based on the Federal Guidelines for Drinking Water Quality, and are asking water suppliers and local communities to improve their systems to meet these standards. Watershed management is part of the multi-barrier approach to water quality protection, but treatment is seen as the most essential of these barriers. This leads to a more narrow interpretation of source protection than is advocated by many water suppliers, who prefer the term *source area* protection, which implies the need to manage land-based activities at any point in the watershed – at a minimum, strictly controlling land-use around reservoirs and groundwater recharge zones.

The Drinking Water Protection Act gives IHA the authority to enforce source area protection in the Okanagan. However, regardless how well a watershed is protected, there will be situations –

such as extreme storm events – when large amounts of sediment are introduced to the system (as recently occurred in Vancouver). In her presentation, Elizabeth Sigalet stated that water-borne disease epidemics are most likely to occur in association with such events, which can overwhelm treatment plants. For surface water sources, it is IHA's view that the only way to ensure that the public will be adequately protected from water-borne disease is for all water suppliers to install filtration and disinfection systems in their treatment plants. Because of limited resources, Drinking Water Officers prefer to focus on imminent threats to public health, like chemical spills, sewage system malfunctions, and logging operations. Pathogens and naturally-occurring substances like arsenic are primary concerns, as well as nitrates (usually from agriculture) and other agricultural or industrial chemicals.

However, this narrow focus can lead to unintended consequences. Low-level non-point source pollution, such as sediment plumes from bank failures in degraded riparian areas, are difficult to connect directly to an imminent public health threat, although the cumulative effects of bank failures and other erosion are the cause of high turbidity levels and chronic water quality problems. Some erosion and sedimentation events can be traced to natural causes, but much of it is connected to land-use. Activities on crown land are permitted by different provincial ministries and the Integrated Land Management Bureau. Logging, mining, cattle grazing and recreational activities all have potentially substantial impacts on water quality. In the past decade the Province has moved progressively toward deregulation and *results based* regulation – in which regulatory controls are based on evidence of violations rather than on restricting specific practices. One limitation of the *results based* approach is that it can be difficult to detect water quality impairments until well after they occur, and the pollutants reach a monitoring station or treatment plant. A more proactive approach to regulation could substantially reduce public health risks in water districts which do not have filtration systems in place. Even when advanced filtration systems are in place it is important to manage watersheds for drinking water protection, in case there is a failure in the treatment process.

The new MOU between the Health Authorities and Ministries concerned with permitting and regulating watershed activities, was intended to create a process for addressing specific problems as they arise, and to serve as a formal commitment among parties to make drinking water protection a priority, as well as to keep one another informed and working together. Regional drinking water teams are scheduled to be established under this agreement, including representation from each agency that is party to the agreement as well as representation from local governments that wish to participate. However, some Okanagan Water Stewardship Council members are concerned that the MOU is so general; it does not have the “teeth” to bind signatories to making water quality protection a top priority.

The Drinking Water Protection Act assigns water suppliers the responsibility for delivering safe drinking water to their customers, and the Ministry of Health and Health Authorities have established a watershed assessment process. The intention of this process is to establish a mechanism for evaluating watershed conditions that is fair to all stakeholders. But while water suppliers are responsible for threat assessments on multi-use crown lands, they have no authority for controlling activities and are not party to the drinking water protection MOU. This creates a perception of unfairness, and some water suppliers have suggested that the onus should instead be on the user groups or the permitting authorities to demonstrate that these activities do not

threaten water quality or riparian health. In addition, the Drinking Water Officers should be able to identify and regulate certain activities that are obviously creating erosion or other cumulative pollution problems. Without policing, there is essentially no control of watershed activities.

Regulatory planning processes – ranging from watershed assessments to Drinking Water Protection Plans, to Water Management Plans, to establishing water quality objectives – all provide a means for local communities to influence land-use in their watersheds. Although in theory this system allows flexibility for local needs and interests, it also means that high-levels of protection and local control are reserved for communities that have the financial or social resources to develop such plans. The water districts that are least able to afford assessments are the usually ones that need them the most. That is, they are the least able to afford upgrades to treatment facilities or other infrastructure, so they need the highest-quality watershed protection. Independent water supply districts – those run as cooperatives, not owned by a municipality – are not eligible for infrastructure funding from the provincial government, and the costs of upgrading small systems in rural areas may present a substantial financial burden to the community. The planning processes themselves are slow and complex, which is why so few plans have yet been put in place. Watershed assessments and assessment response plans also rely on the willingness of Drinking Water Officers to use them to make regulatory decisions – which at this time they are only willing to do in the context of direct human health hazards.

On the surface, designating *community watersheds* appears to be a beneficial regulatory avenue for greater watershed protection. However, since the Forest Practices Code has been phased out, community watershed designations have little clout for ensuring water quality protection. Eight community watersheds in the Okanagan are near to completing the process of setting water quality objectives: Kelowna, Moody, Trepanier, Vernon, Robinson, Sutherland, BX and Duteau creeks. To set these objectives requires 3 years of monitoring, followed by an analysis of background pollution levels. This effort helps provide a baseline for conditions in the watershed, but having the objectives in place does not provide a useful enforcement tool. Under FRPA, resource developers are not accountable for meeting the objectives – only for developing management strategies or plans that take them into account. The Forest and Range Practices Regulation of FRPA further undermines the value of community watersheds by specifying that water quality objectives only apply when water quality impairments cannot be addressed by treatment, and only to the extent that they do not unduly interfere with timber harvests.

Fundamentally, Okanagan water suppliers and local governments are uncomfortable with having little say in what activities are permitted in the main source areas of their drinking water, especially in this water-scarce region with a booming economy and rapid population growth – all of which rely on having secure and healthy water supplies. It is less a matter of whether watersheds should be multi-use or fully protected, and more a concern that provincial ministries do not *in practice* give priority to drinking water protection when permitting activities in the watershed, and that there are few opportunities for meaningful local control. The Province's move to sell leased lots on Okanagan drinking water reservoirs is one expression of this, where the interests of a relatively small number of cabin lease-holders have been given an equal standing with water suppliers and local governments concerned about protecting drinking water quality.

Issues of source area protection in the Okanagan will not be solved easily or rapidly. Acquiring more local control of activities on crown land will likely take either a long-term lease arrangement under the Land Act or an extensive regulatory planning process like a Water Management Plan or a Drinking Water Protection Plan. There may also be avenues for greater local control through the Land and Resources Management Planning (LRMP) process, or even a non-regulatory consultation process in which watershed users discuss planned activities with drinking water purveyors. To regulate activities on private land will take much more extensive land-use bylaws and enforcement by local governments. It will be difficult to make a strong case for proceeding wholesale with these tools unless watershed assessments are done to identify which areas are most sensitive and should be the highest priority. Without very strong political pressure or civil lawsuits, the IHA and Ministry of Environment will also likely recommend assessments and response plans before they expand the extent of their current enforcement activities. With current settlement and land-use patterns, it makes sense to use some form of assessment to first identify priority areas for protection, and determine which activities should be excluded or downsized from which areas.

V. Potential Actions for Future Consideration

The following actions were proposed by different Council members within the context of the discussion, and may be considered in the future as potential recommendations to be forwarded to the OBWB. These do not represent consensus ideas of the Council.

- Many regulatory, policy and planning tools appear to be available for watershed protection in B.C. Which of these tools would be most effective for use in the Okanagan? If our objective is source area protection, should we use the DWPA? Protect large watershed areas through 999 year leases under the Land Act? The Environmental Management Act? Different tools are needed for crown land and private land, and for different environmental conditions. It may be valuable to commission a legislative analysis of watershed protection options, seeking to lay out a step-by-step course on how best to protect specific sensitive watershed areas. Such a study would be an essential companion to a watershed assessment effort.
- One of the most important first steps for watershed protection is to identify high-priority watersheds and aquifers, and assess which factors have the biggest impact. The benefit of these kinds of assessments is that they can look at the entire system, and all impacts to drinking water quality. For example, answering where cattle should be excluded, or where is mining or logging may be inappropriate. Assessment response plans could provide guidance as to which best management practices should be put in place. For example, the old Forest Practices Code required that cattle be kept 1-km away from intakes, and prohibited road building within 100m of intakes. This Code was eliminated altogether as being too onerous, but it may be valuable to reinstate some portions of it, as appropriate for our area.
- The IHA wants to use science-based evidence as a basis for water quality regulation. It will be very useful to have more evidence that watershed source protection provides health benefits, and conversely, more evidence for the links between specific watershed

activities and potential impacts to health. Several OWSC members have noted that the onus should be on watershed users to demonstrate that their activities do not harm water quality. It may be adequate to conduct a literature review, rather than having to produce direct evidence of health impacts. The IHA has a database for water quality monitoring, but this is mostly from cases where people are having their drinking water tested, not from “raw” water testing. The OBWB and OWSC should work with spOke to develop a user-friendly database for water quality testing information. Members of the Okanagan Water Stewardship Council also recommended that the Board and Council work with watershed groups to encourage citizen water quality monitoring.

- Some members of the Okanagan Water Stewardship Council suggested that it may not be appropriate for the Ministry of Health, with its narrow mandate, to be responsible for watershed health and protection. The Drinking Water Protection Act may need to be amended to include a greater role for both local government and the Ministry of Environment.
- Some of the greatest impacts to water quality occur in the urban and agricultural areas of the watershed (for example, from stormwater and agricultural run-off), rather than on crown lands. Regional districts and municipalities have opportunities to control land-use zoning in sensitive areas, such as wetlands and groundwater recharge zones. Local governments can also work actively to protect riparian buffer areas and lakeshore. This topic should be taken up at greater depth in subsequent OWSC meetings.
- Elizabeth Sigalet of the IHA inquired whether the OBWB could take a greater role in source protection by identifying situations where an assessment should be triggered; supporting planning by-laws for drinking water source protection; and assisting in assessments that could show the need for a drinking water protection plan that might result in best management practices to benefit Okanagan water suppliers.

Resources

Drinking Water Protection Act. *Information page from the BC Guide to Watershed Law and Planning.* <http://www.bcwatersheds.org/issues/water/bcgwlp/o4.shtml>

Memorandum of Understanding Regarding Inter-Agency Accountability and Coordination on Drinking Water Protection.
http://www.obwb.ca/fileadmin/docs/interagency_mou_accountability_coordination_drinking_water.pdf

Information on Community Watersheds
http://www.env.gov.bc.ca/wsd/plan_protect_sustain/comm_watersheds/index.html

Guide to Developing Water Quality Objectives for Community Watersheds
http://www.env.gov.bc.ca/wat/wq/BCguidelines/wq_ob_user_guide/usersguide.html