



Smarter Water Laws – the Key to Living Water Smart – BC’s New Water Plan

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Background

Living Water Smart (“LWS”) – BC’s Water Plan was released on June 3, 2008 by Environment Minister Barry Penner. This long awaited Plan is the latest stage in a history of efforts to reform BC’s water laws over the past 15 years. This comment from the UBC Program on Water Governance is an initial reaction to the Plan, and points out crucial issues that deserve more in-depth exploration through a thorough public consultation.

The first 40 pages of the 95 page booklet distributed at the press conference at Musqueam Creek are a series of photos illustrating water’s importance in the lives of British Columbians. The rest of the booklet outlines 45 Actions divided into three categories: Doing Business Differently, Preparing Communities for Change, and Choosing to be Water Smart. A list of Recent Achievements is also appended to each category of Water Action. The Actions are presented in summary form, and contain few details on substance, implementation, or public process. (Substantially more information is included on the www.livingwatersmart.ca website.)

The last significant attempt at provincial water law reform occurred in 1993 when the British Columbia Ministry of Environment, Lands and Parks issued “Stewardship of the water of British Columbia: a review of British Columbia's water management policy and legislation: a vision for new water management policy and legislation”, a series of ten detailed discussion papers. Though short on glossy photos, this set of policy papers examined critical issues in detail, explained the different options to address the problems, and sought public input on the policy proposals put forward by the government.

For various reasons the comprehensive rewrite of the law did not proceed as contemplated, and changes to various BC water laws have occurred in more of a piecemeal fashion since 1993:

- the 1997 *Fish Protection Act* included a number of provisions for water. Including a system to designate sensitive streams;
- a policy document titled the *Water Conservation Strategy* was issued in 1998, focused on education about low flow plumbing fixtures and use of drought tolerant plants in landscapes;

- in 1999 the province announced the *Fresh Water Strategy for British Columbia* to “consolidate provincial initiatives into one cohesive strategy”,
- the *Drinking Water Protection Act* was developed following a report from the government appointed BC Drinking Water Protection Advisory Committee and came into force in May 2003,
- Phase 1 of the *Groundwater Protection Regulation*, (two additional Phases are planned) was passed in 2004, developed with the assistance of the Groundwater Advisory Board,
- the BC Drought Strategy, which included the guide “Dealing With Drought: A Handbook for Water Suppliers in British Columbia” was released in 2004, and
- the BC *Water Act* was amended in 2004 and established new powers to create water management plans under Part 4 of the Act.

All these changes are the backdrop for the new Plan. Other provinces across Canada have issued new strategies and amended their water laws in recent years: Quebec’s Water Policy was issued in 2002, Alberta’s “Water for Life” Strategy was issued in 2004, and Ontario has a new suite of laws which includes the *Clean Water Act, 2007*.



Quick Summary of Plan

In general, the LWS Plan points to some potentially significant new changes. Its emphases on stream health, water conservation, climate change adaptation and integrated land and water planning are welcome news. The promises to legislate environmental flows for rivers, significantly increase water efficiency, regulate groundwater in designated areas, and improve source water protection are all laudable.

However, the Plan omits critical details about implementation, time lines, and funding for policy and legal changes. Also, the contentious issue of water governance is not resolved, so outstanding questions of the appropriate division of responsibilities for water management remain.

The process for continuing the Plan's development is not mentioned in the book, though the website promises that the government will seek input, and publish a discussion paper with proposed policy options. Other provinces have invested significant time and energy into public consultation on new water laws. Ontario's reforms started in 2000 after the Walkerton drinking water tragedy, and key pieces of the new regulatory approach were completed in July 2007. Alberta's Water for Life Strategy took eight years to develop, and the province has made a commitment to review the Strategy at regular intervals.

The BC government notes that good water governance follows the principles of transparency, public participation, accountability and integrated environmental, economic and development decision making. A process to reform BC's water laws could and should also follow these principles.

Below is the list of Actions from the Living Water Smart Plan, followed by a brief commentary.



Living Water Smart – Actions at a Glance

Doing Business Differently

1. By 2012, all land and water managers will know what makes a stream healthy, and therefore be able to help land and water users factor in new approaches to securing stream health and the full range of stream benefits.

The health of BC's water resources is a critical issue. Both surface streams and groundwater must be assessed. The LWS website talks about how the BC *Water Act* 'modernization project' will look at regulatory tools to protect water flow needs. However, the issue of over allocated streams and declining aquifers is not addressed. Many of BC's water sources are oversubscribed, as fully a quarter of the surface waters in the province have recorded restrictions.ⁱ Groundwater declines are also evident in many heavily populated areas of the province.ⁱⁱ

2. By 2012, water laws will improve the protection of ecological values, provide for more community involvement, and provide incentives to be water efficient.

Many agree that BC's water laws need a thorough, comprehensive revision, as most of the issues outlined in the "Stewardship of the Water" series issued fifteen years ago remain ripe for regulatory attention today.

The new law should reflect modern concepts about water science and water law. One example is that groundwater and surface water are one resourceⁱⁱⁱ and licensing and allocation systems should recognize their interconnectedness.^{iv} Other examples relate to putting the concepts of source protection, shared governance, ecological health, efficiency, and demand management into law. Other provincial water laws link water management and environmental or sustainability objectives. Though there are hints that many of these concepts may be incorporated into a new water law, as few details are provided, it is hard to judge exactly which legal tools are under consideration.

3. By Legislation will recognize water flow requirements for ecosystems and species.

This may be the most significant promise in the water plan. Stream flows in many of BC's rivers have been severely diminished, as water has been diverted for off stream uses. A lack of provincial intervention in protecting instream flows contributes to water conflicts.^v

Instream flow protection is a critically important environmental, economic, and quality of life issue. Though determining how much water can be extracted from a river without negatively affecting fish, fish habitat and other ecological values is a daunting task, other jurisdictions have succeeded, such as many US states, including BC's neighbours, Washington, Oregon, Idaho and Montana.^{vi} Other countries have also passed laws to protect in stream flows, for example, New Zealand is currently developing a National Standard for environmental flows.

The province is not starting from scratch with this Action. Instream flow guidelines were developed for a number of river basins involved in BC Hydro's water use planning processes.^{vii} Provincial agencies, working in collaboration with the federal Department of Fisheries and Oceans, have developed guideline documents related to the evaluation of instream flow needs for fish.^{viii} Initiatives to legally protect stream flows in BC have also started, then stalled, in the past decade. The *BC Fish Protection Act* in 1997 included a provision for 'streamflow protection licences', but this section of the law was never brought into force.

Building on existing tools, and incorporating knowledge from the groups that have used the tools, should all better protect instream flows through legally binding requirements.

4. Government will require all users to cut back their water use in times of drought or where stream health is threatened.

The ability to require users to cut back water use already exists under the *Water Act* with the 'stop diversion' power.^{ix} Water managers find the use of this provision to be problematic because they start cutbacks with recent licenses which are often smaller in volume and have a relatively minor effect on the overall water supply. Water managers can encourage users to negotiate common cutbacks, and this technique has been used in the Okanagan. Creating governance structures which would help water users reach these types of results is one potential goal for regulatory reform.

5. Government will limit all new licences to 40-year terms in areas where there is high demand and pressure on water.

This is an important new promise. Licences with no expiry date limit the ability of water managers to adjust licensed amounts, and can frustrate the efforts of multi-stakeholder water planning groups to balance the needs of different water users. Licences issued in perpetuity are not compatible with adaptive management.

6. The Ground Water Protection Regulation will protect the quality and quantity of our groundwater.

This Regulation exists and is already in force. Phase 1 of the GWPR came into force in 2004 and Phase 2 will be released this year. Presumably this Action refers to the last planned Phase 3 of the Regulation.

7. By 2012, government will regulate groundwater use in priority areas and large groundwater withdrawals.

BC's regulatory system for water applies to surface but not groundwater. This anomaly causes problems for managers at all levels of government as noted by many commentators.^x Groundwater protection will only grow in importance as the effects of climate change are felt, as groundwater not only provides essential base flows for streams but moderates water temperatures. Cold water fisheries are threatened by excessive extraction, and regulators have no regulatory tools to respond to this threat. As the Watershed Watch Salmon Society has explained in a series of reports, substantial improvement is needed in how BC manages groundwater for salmon.^{xi}

The Provincial government is currently engaged in developing Phases 2 and 3 of the Groundwater Protection Regulation, so this is not a new promise. In developing this regulation, limited public consultation occurred. The primary input from the public came (apparently) from the Groundwater Advisory Board, made up of academic experts and representatives of the drilling industry and others. The membership of this Board is not public and is not listed on the MOE web site. Minutes from this Board are also not public. Researchers at the UBC Program on Water Governance made an access to information request to disclose this information in March 2008, and as of June 20, 2008, no documents have been received. This lack of transparency and lack of public participation is an example of failure to implement the good governance principles endorsed by the province.

8. Government will support communities to do watershed management planning in priority areas.

The power to do this already exists under Part 4 of the BC *Water Act*. Problems with this community by community approach have been outlined in a paper by the UBC Program on Water Governance^{xii}:

“Currently, delegated water governance arrangements in the province are characterized by a patchwork of jurisdictions, legal authority, differing governance models, and mandates. This situation has resulted because most of the models have evolved in an ad hoc fashion, with little coordination between different levels of government or governmental bodies.”

...The biggest gaps that exist today in water governance in the province are:

- the absence of an overall provincial water strategy including management measures and implementation targets, and clear delineations of authority
- an uneven patchwork of governance arrangements throughout the province
- a lack of transparency about the requirements for initiating the planning provisions which would allow greater local level involvement
- regional inequities in water management
- a lack of funding mechanisms available to local governments or regional bodies to use for water management activities,
- limited public participation opportunities in the existing water governance framework in general and with the water licensing framework in particular.^{”xiii}

There are many existing examples of delegated water governance in BC. Water governance bodies can be creatures of statute, such as the Columbia Basin Trust and the Okanagan Basin Water Board, the result of a formal policy process such as the BC Hydro WUPs, the response of multiple levels of government to a particular set of water issues, such as the Abbotsford Sumas Aquifer Stakeholder Group, or the product of local government or community initiative, such as the Cowichan and Nicola Valley water use planning processes. Representatives from these bodies have expressed the desire for greater provincial guidance on issues such as balancing needs of different water users, fitting their efforts into an overall framework for protecting water resources and the aquatic environment, and creating governance structures that work in tandem with provincial authorities.

Many communities such as the Columbia Basin, the Gulf Islands, the Okanagan, Nicola Valley, Cowichan Valley, Abbotsford are enthusiastic about the possibilities of being designated to prepare a water management plan under Part 4 of the *Water Act*.

Additional guidance from the province would assist those communities that want to undertake a plan for a defined geographical area on issues such as:

- Criteria and a process for choosing communities to do the plans,
- a common framework for preparing plans,
- a commitment to funding a certain number of plans a year,
- which participants need to be involved,
- which areas receive priority for this type of plan,
- which are the priority issues that need to be addressed by a plan, and
- which issues the province is willing to devolve.

9. By 2020, water use in British Columbia will be 33 percent more efficient.

This is a very valuable promise. Many reports have pointed out how water efficiency in BC can be improved; particularly the series from the POLIS Project on Ecological Governance at the University Victoria which has done extensive work on this issue.^{xiv} Water laws in Canada have historically not placed a premium on either conservation or efficiency. This promise is a good sign that BC's new water law will reverse this state of affairs.

10. By 2012, government will require all large water users to measure and report their water use.

Management depends on measurement. This is a key issue for an improved water licensing regime in BC. Other provinces require actual use reporting, and collecting this information will assist water management in BC.

11. Government will require more efficient water use in the agriculture sector.

Agriculture is a major user of water in BC. The Ministry of Agriculture is promoting water conservation in agriculture as a routine part of irrigation management, and advises farmers to check their irrigation flow rate against their licenced quantity even if a withdrawal rate is not on their licence. More could be done: the success of some local water conservation programs, and innovations in irrigation practices, such as those in the Southeast Kelowna Irrigation District which has had a successful metering program for a number of years needs greater publicity and perhaps replication elsewhere in the Basin.

In addition to greater agricultural water efficiency, water pollution from agricultural activities is also on the rise. Excessive manure disposal on farmland is contaminating groundwater in different parts of the province. Research on the impact of agricultural activities on water has been done by different groups like the Pacific Fisheries Research Conservation Council^{xv}. The development of environmental farm planning is a step forward but the voluntary nature of the plans can be a source of concern. Agricultural best management practices to minimize groundwater degradation have been in use for over a decade in both Alberta and BC, yet regional nitrate contamination appears to be worsening, and some experts believe that: "In the long run, there is little doubt that programmes of this nature cannot be a substitute for legislative or regulatory action" ^{xvi}. A Policy Research Initiative (the Policy Research Initiative conducts research in support of the Government of Canada's medium term agenda) study on water quality trading cited similar evidence about the use of voluntary programs on their own to control nonpoint agricultural source pollution: "there is little evidence to suggest that voluntary approaches deliver the expected environmental benefits and much that they do not."^{xvii}

12. Government will secure access to water for agricultural lands.

This issue has been highlighted by the Okanagan Basin Water Board, which sees the need to ensure that the lands protected by the Agricultural Land Reserve have the water they need to fulfill their purpose: to grow crops. The issue is also mentioned in the BC Agricultural Plan, and Metro Vancouver is among the jurisdictions that have commissioned studies on water and agriculture.

13. Government will work with the private sector and support communities to conserve and restore stream function.

Restoration is an important objective for damaged ecosystems.

14. Government and partners will restore ecological health to 30 km of stream between Vaseux Lake and Osoyoos Lake.

This is a valuable promise. This particular stretch of stream has been singled out for attention due to recommendations from the Okanagan Basin Technical Working Group.

15. Government will fund the Mount Washington mine remediation project with \$4.5 million, restoring the health of the Tsolum River.

This remediation project was previously announced April 14 2008.

16. To enhance some watersheds, government will examine the potential of decommissioning dams.

The issue of decommissioning dams in BC has been proposed for several years by groups such as the Outdoor Recreation Council (ORC) and the BCIT River Recovery project. Decommissioned dams include the Theodosia Dam near Powell River, the Kitsault Dam on Alice Arm, and the Coursier Dam outside of Revelstoke. ORC's River Recovery report of 2001 identified nearly 40 primary candidate dams for decommissioning based upon their operational status, institutional concerns, and biological restoration potential.^{xviii}

Preparing Communities for Change

17. By 2012 new approaches to water management will address the impacts from a changing water cycle, increased drought risk and other impacts on water caused by climate change.

This is a noteworthy Action as there is currently a lack of public awareness of the links between climate change and water, coupled with few mechanisms to address climate change adaptation under the current regulatory structure.

Reports show that BC's water resources will be hard hit by climate change. Natural Resources Canada commissioned a research report released in 2008 showing that the likely impacts of climate change in BC include increasing water shortages, increasing competition among water users such as hydroelectricity, irrigation, communities, recreation and in-stream flow needs, and increasing water stress for the forestry, fishery and agricultural sectors.^{xix} Many researchers in BC are looking at ways to incorporate adaptive strategies into water management, and have a lot to contribute to the LWS Plan.^{xx}

18. Government will work with other provinces to share ideas and resources to improve water conservation and collectively help communities adapt to climate change.

This vague but positive sounding Action was amplified by the announcement of the Western Water Stewardship Council, to be led by BC, which was announced at the LWS press conference. Few details of this Council are available at this time.

19. Community development strategies will be developed to recognize the importance of riparian zones in adapting to climate change.

Riparian zone protection has a long and tortuous history in BC. Different versions of riparian protection regulations have been passed over the past ten years, amid controversy that the regulations did not follow scientific advice on the appropriate width of a riparian buffer zone to protect stream health, fears that the regulations would inhibit development (though studies show that protecting riparian zones increases property values^{xxi}) and concerns over the variability of standards and procedures used by local governments. Is the government proposing to change these regulations? Will it continue to rely on local governments to tackle this issue on a community by community basis, or will it introduce a new provincial approach? More details of this potentially critical promise are needed. This proposed Action is a significant component of determining stream health, as promised in Action 1, and the Action on protection of wetland function.

20. Adapting to climate change and reducing our impact on the environment will be a condition for receiving provincial infrastructure funding.

An important new promise, and good follow up to BC's leadership on climate change.

21. Where new development on flood plains is unavoidable, it will be flood-proofed to high provincial standards.

Like riparian protection, floodproofing is another issue that has been 'downloaded' to local governments in recent years. Organizations like the Canadian Water Resources Association and the BC Real Estate Association have called for a province-wide flood hazard management strategy.^{xxii} Is the government now proposing to shift the emphasis back to provincially applicable standards? Will the standards be regulated? What changes will be made to the current flood protection policy?

22. The government will provide \$100M for flood protection over 10 years to help communities manage flood losses.

Funding is a critical part of any water plan. Details about funding for the LWS Plan are confined to this announcement and a previously announced fund to remediate a mine. It would be helpful to include budget numbers for implementation of the Living Water Smart Plan in future policy papers.

23. Wetland and waterway function will be protected and rehabilitated.

As the Ministry of the Environment website page "Wetlands in BC" notes: "Currently comprising about 5.6% or 5.28 million hectares of British Columbia, they provide critical habitat for fish, birds, and other wildlife. Most wildlife in the province use wetland habitat at some point in their life cycle, and many red- and blue-listed species are wetland-dependent."

Yet BC lacks a provincial wetland policy, and is only western province of Canada which does not have such a policy. A policy has been under development on and off for the past fifteen years, but currently appears dormant. Will a modern new *Water Act* provide the impetus for completion of this policy?

24. Government will provide incentives for restoration of streams or wetlands.

More details are needed.

25. Green developments waiting for provincial environmental approvals will be fast-tracked and given priority.

The definition of a 'green development' is unstated.

26. Government will develop new protocols for capital planning that will look at the lifecycle costs and benefits of buildings, goods and services.

This is an important new promise.

27. Government will improve the quality and protection of drinking water sources.

This is a key issue for BC which has an exceptionally high rate of boil water advisories. As of March 31, 2008, BC ranked second in the country for the number of boil-water advisories, with 530 orders in effect, second only to Ontario at 679. The numbers were compiled in an investigative report published in the Canadian Medical Association Journal^{xxiii}. These numbers exclude the 93 boil-water advisories in effect across the country in First Nations communities. This serious public health issue needs more attention. As the review noted: "Advisories are intended to be a precautionary measure in the public health tool kit, but given that some have been in place for at least 5 years, they are apparently being used as a band-aid substitute for treatment."

BC also has high rates of waterborne disease outbreaks. Between 1980 and 2004, BC had 29 confirmed outbreaks that affected tens of thousands of British Columbians.^{xxiv}

The LWS website explains that there are more than 4,500 water systems in B.C. that supply water to multiple connections, but that ninety percent of the provincial population is supplied by 96 water systems operating in large municipalities.

Since the Walkerton tragedy in 2000, many provinces, including BC, have stepped up their efforts on drinking water quality and source protection. BC's new drinking water protection law came into force in 2003 and the Provincial Health Officer issued the first report on the Act in 2007.^{xxv}

The new Act allows the creation of drinking water protection plans. None have been completed to date. Drinking Water Protection Plans have the potential to be very powerful and effective, but there would have to be significant impairments to source waters to trigger a planning effort by the Ministry of Health or a health authority. "Drinking water officers must consider all other options available under the Act before requesting the provincial health officer to consider recommending a drinking water protection plan. A drinking water officer should, however, make such a request in circumstances where he or she considers it appropriate."^{xxvi}

28. The government will cooperate with Canada to ensure the quality of drinking water in all Aboriginal communities will meet the same provincial standards applied across British Columbia by 2015.

Excellent initiative. The Report of the Expert Panel on Safe Drinking Water for First Nations also made this recommendation.

Choosing to be Water Smart

29. Fifty percent of new municipal water needs will be acquired through conservation by 2020.

Some experts such as those at the POLIS Water Sustainability project believe that this figure is too conservative and that a higher percentage of 'new' water can be secured through demand management, conservation, and fixing leaks in water systems. A recent workshop at the UBC Program on Water Governance on Sustainable Water Infrastructure Management in Canada also examined effective programming for conservation and efficiency in municipal water supply.

30. Government will look at new ways to help promising water conservation technology succeed.

This Action needs more supporting details.

31. Government will fund household evaluations of water, energy and transportation use.

Great promise.

32. The Green Building Code will require water conservation plumbing fixtures such as low flush toilets.

The Green Building Code is under development already and its provisions for water conservation have been criticized as not going far enough.

33. By 2010, government will mandate purple pipes in new construction for water collection and re-use.

This is an important new promise.

34. In partnership with industry, government will develop a water efficiency labelling system for water consuming products.

Labelling can influence consumer behaviour. This is a welcome initiative. Comparable programs such as the Energy Star program have been successful in steering consumers towards more energy efficient appliances.

35. By 2012, all students in B.C. will have completed at least one stream-health assessment.

Education is a vital component of ensuring water sustainability.

36. By 2012, all students in B.C. will have completed at least Government will award a youth water-science prize or scholarship for excellence in water stewardship.

Prizes demonstrate the importance a government places on an issue.

37. Government will provide summer jobs for youth between the ages of 16 to 22, to undertake twenty stream restoration projects across the province.

This is already a component of the BC Conservation Corps, a worthwhile initiative, not a new Action.

38. Government and First Nations' treaty water negotiations and other related agreements support providing a clean and safe domestic, agricultural and industrial water supply for First Nation communities.

Some concluded treaties have already addressed water. The BC *Water Act* was amended to give effect to the water provisions of the Nisga'a treaty settlement.

39. Government will continue to work toward preserving First Nations' social and cultural practices associated with water.

Aboriginal water rights are an undecided and significant issue that will affect new governance models. In Alberta two aboriginal communities are challenging the government's decision to close nearly every river, lake and stream in southern Alberta in court, contending that the overall plan doesn't effectively protect the environment. ^{xxvii}

40. Tools to incorporate traditional ecological knowledge into information and decision making will be developed by 2015.

Great initiative.

41. By 2010, a strategy to set the direction for water science in B.C. will be implemented.

This strategy is already under development and should be a useful complement to BC's water plan, particularly if the strategy includes additional resources for water science research.

42. Government is expanding British Columbia's hydrometric and other climate-related networks.

The government is to be commended for increasing the resources for data collection, one of the backbones of sustainable water management. The Hydrometric Business review commissioned by the Ministry of Sustainable Resource Management in 2003 noted problems with the program at that time, including underfunding and a failure to realize the multiple economic and public goods benefits of the program. ^{xxviii}

43. Government will publish a report on the state of our water by 2012 and every five years after that.

A comprehensive report on BC's water resources which incorporates all the different indicators, performance measures and other data sets now in use would be a valuable addition to public understanding.

44. Government will celebrate examples of successful water stewardship by awarding annual water awards to individuals or groups.

Prizes help stimulate changes in behaviour.

45. The government of British Columbia will work with our Olympic partners to use sports and the Olympic Games spotlight to engage British Columbians and support smarter water choices.

This action is unclear. The VANOC sustainability strategy already has a section on water quality and conservation, and it is not clear what else is being contemplated.



Other Legal Issues Not in Living Water Smart

A number of additional issues are not in the LWS Plan:

Coordinated Management and Clear Lines of Authority

How will different levels of government work together and which level of government retains the authority to make water decisions? This issue is a key concern for communities working to protect their water supplies across the province.

Provincial Standards

Will BC move towards overall provincial standards for water quality, quantity or ecosystem management? BC has no equivalent to, for example, the Alberta government's legislative duty to prepare an aquatic environment protection strategy^{xxix}, no provincial wetland policy, and no groundwater strategy or action plan.

Regional Equity

How will regional inequities in water management be addressed? Currently, only those areas with greater financial resources, such as the Okanagan (as its Water Board has property taxation powers), have the ability to engage in proactive water management planning. The two major choices are to either leave the current arrangements in place- the 'one size does not fit all' model; or to target the more urbanized or pollution prone areas of the province, similar to the approaches used in other provinces. This choice should be made through extensive public dialogue and consultation.

Funding

Funding shortfalls for provincial water management activities result in inadequate monitoring, compliance and enforcement of water quality and environmental protection legislation.

Will BC move to fund water governance advisory bodies? The LWS Plan is almost entirely silent about the financial implications of changes to water management, other than including previously announced funding announcement for specific projects.

Other provinces have provided financial support to delegated governance bodies: in Québec, annual grants of \$65,000 are made available for the operation of the 33 priority watershed organizations, in Alberta \$3.2 million is available for water planning and advisory councils; and Ontario has committed \$120 million from 2004-2008 to cover the costs of source protection planning.

Participation

Serious gaps in public participation exist in BC's water management framework:

- The government of BC has not conducted broad-based public consultation on an overall water strategy since the 1993 "Stewardship of the Waters" initiative, though there are encouraging signs this Plan intends to embark on such a consultation. A recent series of workshops on water governance was also helpful.
- BC's current water licensing framework lacks public participation opportunities available elsewhere across the country.
- Participation in appeal processes is similarly limited.
- As groundwater is not licensed, there are only very minimal opportunities for public participation in the rarely used environmental assessments of major projects.



Conclusion

The Living Water Smart Plan has the potential to significantly improve water governance and management, particularly if the government follows the principles of good governance it endorses in the Plan during the next phases of Plan development: transparency, public participation, accountability and integrated environmental, economic and development decision making. The Plan will benefit from much more extensive, detailed and broad-based public consultation.

NOTES

- ⁱ Approximately 28% of licensed stream length in British Columbia is currently restricted and has been since the 1990s. BC State of Environment Reporting, Surface Water Use in British Columbia, Percentage of Licensed Stream Length that has Water Allocation Restrictions by Decade, 2001 at <http://www.env.gov.bc.ca/soerpt/8surfacewateruse/streamglance.html>
- ⁱⁱ Between 2000 and 2005, about 35% of observation wells are showing declines caused by human activities, up from 14% between 1995-2000 (BC State of Environment Report, in draft), in BC Ministry of the Environment submission to Canadian Council of Academies Expert Panel on Sustainable Groundwater Management, 2007.
- ⁱⁱⁱ T.C. Winter, J.W. Harvey, O.L. Franke, and W.M. Alley, Ground water and surface water : a single resource , (U.S. Geological Survey circular : 1139) 1998
- ^{iv} Integrated ground and surface water management is increasingly recommended by experts ; see, e.g., Report of the Rosenberg International Forum on Water Policy to the Ministry of Environment, province of Alberta, 2007, p. 14.
- ^v Marvin Rosenau, Mark Angelo, Conflicts between People and Fish for Water: Two British Columbia Salmon and Steelhead Rearing Streams in Need of Flows, (PFRCC:Vancouver) 2003.
- ^{vi} Neuman, Janet C. and Achterman, Gail, "Sometimes a Great Notion: Oregon's Instream Flow Experiments" . Environmental Law, Vol. 36, 2006.
- ^{vii} See description of this process at <http://www.bchydro.com/environment/wateruse/wateruse1775.html>
- ^{viii} See description of these guidelines at http://www.env.gov.bc.ca/wld/BMP/instreamflow_wkgdrft.html
- ^{ix} s. 88 (h) which allows an engineer to "regulate, in person or through an officer or a water bailiff, and make orders with respect to the diversion, rate of diversion, time of diversion, storage, time of storage, carriage, distribution and use of water;"
- ^x Provincial Health Officer of BC, 2007; Auditor General of BC 1998; Nowlan 2006; Douglas, 2007; Orr 2007, Christensen 2007
- ^{xi} See reports on groundwater and salmon at http://www.watershed-watch.org/programs/coquitlam_river.html
- ^{xii} Linda Nowlan and Karen Bakker, "Delegating Water Governance: Issues and Challenges in the BC Context", Report for BC Water Governance Project (UBC Program on Water Governance: Vancouver) Nov. 2007
- ^{xiii} Linda Nowlan and Karen Bakker, "Delegating Water Governance: Issues and Challenges in the BC Context", Report for BC Water Governance Project (UBC Program on Water Governance: Vancouver) Nov. 2007
- ^{xiv} POLIS water demand and water soft path reports are at <http://www.waterdsm.org/>.
- ^{xv} Dr. Marvin L. Rosenau, Mr. Mark Angelo. Conflicts between Agriculture and Salmon in the Eastern Fraser Valley, June 2005 Vancouver: PFRCC.
- ^{xvi} David Percy, "Approaches to the Protection of Water Sources" for the UBC Watersheds and Source Protection: Governments, Science and Health, an Exploratory Workshop, Nov. 24-25, 2006.
- ^{xvii} Can Water Quality Trading Help to Address Agricultural Sources of Pollution in Canada? Project Report 2005 www.policyresearch.gc.ca/page.asp?pagenm=pub_index
- ^{xviii} http://www.orcbc.ca/pro_riverrecovery.htm
- ^{xix} Lemmen, D.S., Warren, F.J., and J.Lacroix. (2008) Synthesis: in From Impacts to Adaptation, Canada in a Changing Climate 2007 (Government of Canada: Ottawa,ON).
- ^{xx} See Cohen, S. and T. Neale (eds.). 2006. Participatory integrated assessment of water management and climate change in the Okanagan Basin, British Columbia. Vancouver: Environment Canada and University of British Columbia. and other reports from the Climate Change and Water Management in the Okanagan Basin, British Columbia project of the Adaptation & Impacts Research Division (AIRD), Environment Canada. <http://www.ires.ubc.ca/aird>
- ^{xxi} See studies cited in "Streamside Setbacks Increase Property Values and Attract Economic Development" , Research compiled by Citizens for a Better Flathead 9/07, in support of the Whitefish Critical Areas Ordinance: <http://www.flatheadcitizens.org/Streamside%20Setbacks%20Increase%20Property%20Values..pdf>
- ^{xxii} O'Riordan, J., and Brandes, O. Water Policy in BC: Directions and Possibilities for the BC Real Estate Association , March 5, 2007, at http://www.waterdsm.org/pdf/BCREA_Water_Backgrounder.pdf

^{xxiii} Laura Eggertson "Investigative report: 1766 boil-water advisories now in place across Canada", *CMAJ* • May 6, 2008; 178 (10).

^{xxiv} Provincial Health Officer, "Progress on the Action Plan for Safe Drinking Water in British Columbia" for the years 2003/2004 and 2004/2005, (Victoria: PHO) 2007.

^{xxv} Provincial Health Officer, "Progress on the Action Plan for Safe Drinking Water in British Columbia" for the years 2003/2004 and 2004/2005, (Victoria: PHO) 2007.

^{xxvi} Drinking Water Leadership Council, Drinking Water Officer's Guide (Victoria, BC:Ministry of Health) 2007, online at http://www.health.gov.bc.ca/protect/dwoguide_updated_approved%202007.pdf

^{xxvii} Renata D'Aliesio, "Water rights battle hits court", *Calgary Herald* Tuesday, April 22, 2008.

^{xxviii} <http://www.axystechnologies.com/pdf/BCHydrometricReview.pdf>

^{xxix} (2) The Minister must establish a strategy for the protection of the aquatic environment as part of the framework for water management planning for the Province.

(3) The strategy referred to in subsection (2) may include

(a) identification of criteria to determine the order in which water bodies or classes of water bodies are to be dealt with,

(b) guidelines for establishing water conservation objectives,

(c) matters relating to the protection of biological diversity, and

(d) guidelines and mechanisms for implementing the strategy.

(4) The Minister must, in a form and manner that the Minister considers appropriate, consult with the public during the development of the strategy.