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Setting a New Course in British Columbia–

Water Governance Reform Options and Opportunities

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Prepared for the British Columbia
Ministry of the Environment
Water Stewardship Division



POLIS Project on Ecological Governance

watersustainabilityproject

PREAMBLE

Discussions about water in British Columbia tend to focus primarily on management, on questions of how water is allocated and used, and on water quality and protecting drinking water. Underlying water management is governance: how decisions about water are made and how the people making those decisions are held accountable for them. Water governance receives less attention than water management in discussions of overall reform of water systems, yet good governance is critical to addressing issues of sustainability and development for regional and provincial prosperity.

This policy discussion paper – part of an ongoing water governance and law reform initiative at the University of Victoria’s POLIS Project on Ecological Governance – compares three possible governance models for water management in British Columbia. The purpose of this work is to contribute to the dialogue about governance reform in the province by presenting a range of reform options. And is also part of a broader effort to show how governance fundamentally affects water management and is therefore a key priority to sustain water resources into the future.

This applied research is especially relevant in the context of new provincial water priorities established in the 2008 *Living Water Smart* plan. This discussion paper introduces concepts useful in exploring the opportunities and implications of water governance reform in British Columbia. An important goal of this work is to build on existing research and extend the understanding of water governance, to provide guidance for decision makers, industry and community leaders and policy analysts as they contemplate water governance (including institutional and legal) reform. The purpose is not to present conclusive findings, but instead to identify reform criteria, and to provide a context for ongoing water and watershed governance reform initiatives, and a way to compare different models and elements of those models.

This analysis builds on research developed at POLIS¹ and extends the institutional reform priorities for British Columbia outlined in the Water Governance Project.² This applied policy work will be complemented by forthcoming research (to be released later this year):³

- **Watershed Governance**, a technical background surveying watershed governance models and trends from around the world; and,
- **Thinking Like a Watershed**, a detailed institutional blueprint for watershed governance reform in British Columbia.

1. Brandes, O. M., Ferguson, K., M’Gonigle, M. and Sandborn, C. (2005) *At a Watershed: Ecological Governance and Sustainable Water Management in Canada*. POLIS Project on Ecological Governance, University of Victoria, Victoria, B.C.; and, Brandes, O.M. and T. Maas. (2006) *What we Govern and What Governs Us: Developing Water Sustainability in Canada*. Working Paper presented at the 59th Annual Canadian Water Resources Association’s Annual Conference. Toronto, ON. Available at www.poliswaterproject.org
2. Nowlan, L. and K. Bakker. (2007) *Delegating Water Governance: Issues and Challenges in the BC Context*. Program on Water Governance, University of British Columbia, Vancouver, B.C.
3. All reports in this series are, or will be, available at www.poliswaterproject.org, with research and generous program support for this ongoing initiative by the University of Victoria, The Eco-Research Chair of Environmental Law and Policy and the Walter and Duncan Gordon Foundation.

Setting a New Course



Photo: J. Wong

This more inclusive notion of governance challenges traditional centralized approaches to decision making and management; yet it is increasingly recognized both globally and nationally as the critical priority to address current and future water challenges.



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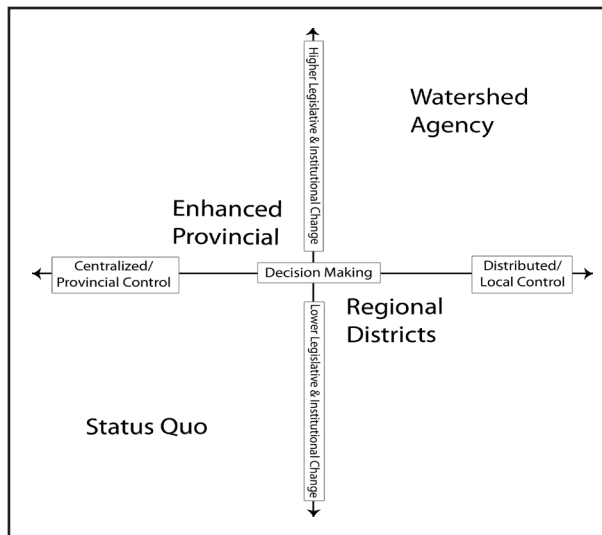
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Executive Summary

- Governance is the process of decision making - *who* decides and is accountable for the decision, *what* the parameters of the decision are, and *how* decisions are made.
- Fundamentally, the goal of improving governance is to build flexibility and resilience into the governance structure, thus enhancing the ability to adapt and effectively address current and future challenges.
- Governance alone cannot correct inadequate water management, but poor governance will almost certainly prevent effective management. Setting British Columbia's water governance on a new course is critical to addressing current water use conflicts and ensuring the long-term health of watersheds and water resources across the province.
- Achieving the *Living Water Smart* vision will require new forms of governance and new relationships with affected communities and stakeholders.
- This discussion paper outlines three possible provincial governance reform options to inform ongoing dialogue and efforts to improve water management in British Columbia, recognizing that a range of options beyond those identified here are available, including hybrids and blended models that draw aspects from each of the proposed options.



Enhanced Provincial Management - emphasizes well-resourced centralized provincial government decision making and control.

Watershed Agency - represents watershed-or regional-scale decision making, but with interplay between both local and provincial priorities and decisions reflecting clear provincial standards and oversight.

Regional District Leadership - involves more active local and shared decision making, but within the current existing institutional and legal water framework in British Columbia.

- The *Enhanced Provincial Management* and *Watershed Agency* are the most vigorous governance reform options to effectively institutionalize an adaptable and sustainable water management regime. They have the potential to go the furthest to account for instream (or ecosystem) flow needs, to develop an effective groundwater management regime, and to enable comprehensive water (and watershed) management planning and drinking water source protection.
- The *Watershed Agency* model also offers an opportunity to substantially improve the engagement and collaboration of First Nations and other stakeholders.
- Provincial goals, and strong regulatory standards (particularly in the areas of watershed and public health) as well as local expertise and involvement in decision making will all contribute to better governance. Striking that balance is the challenge.

SECTION I:

Introduction and Context

Water management, including how water is used and the process by which allocations are made, receives significant consideration in law and policy. Less obvious, but equally fundamental is how water (and watersheds) are governed – the structures that frame *who* makes decisions and *how* decisions are made.

All orders of government have crucial roles to play in water governance in Canada (and especially the federal and provincial governments due to Constitutional obligations). However the focus of this discussion paper is on provincial water governance here in British Columbia. This provincial focus is being driven by the significant commitments and opportunities for both formal and informal change to water governance that are now occurring.

The provincial government created the current water governance regime when British Columbia was a relatively unpopulated province with the intent of facilitating settlement and industrial and agricultural development. Today, the Province is increasingly facing water management and governance challenges exacerbated by this outdated law and policy regime. Impacts from climate change, urbanization, and intensification of water use increase conflicts and may ultimately jeopardize community prosperity and ecosystem health. In some areas, insufficient water is available to ensure functioning ecosystems and water for all current users. When these conflicts occur, the current disconnect between water management and governance is increasingly revealed.

Beyond these challenges, a variety of new, and largely unpredictable, global developments will likely emphasize the importance of water governance in the coming decades. Global issues such as increasing demands for energy or changing US energy policy

will ultimately impact local water resources and watersheds through pressure to generate new sources of “green” power (hydro or independent power projects), or drive further development of oil and gas or other fossil fuel reserves. Global demands for food security (which will be further aggravated by climate change impacts) will increase trade in “virtual” or embedded water (water captured in goods such as fruit or wine) or increase demands for bulk water exports. With the inevitable time lag and delay associated with policy, legal and governance reform, changes today must not only be sensitive to the current provincial situation, but must also be flexible enough to respond to future emerging challenges.

In Canada, provincial governments are primarily responsible for management of water resources (with important federal jurisdiction regarding fisheries (including habitat protection), federal lands (such as parks, national defence and reserves), infrastructure spending, and navigable and transboundary waters, see Appendix A for further details). While existing legal tools in British Columbia may be sufficient to effectively manage water sustainably, these tools are generally not fully used. Insufficient financial and human resources exist for comprehensive and long-term planning, monitoring, and enforcement. Effective management is further limited by fragmented and varied water governance approaches across this province. A preliminary review of the institutional framework for water management and governance in British Columbia reveals that the existing legal tools are highly discretionary, inconsistently applied, and often assigned to non-government actors, local governments or professional associations without appropriate oversight or direction, further accentuating

the institutional fragmentation of the existing system.⁴ Water governance in the province currently lacks clarity in roles and responsibilities, and does not effectively or transparently align resources to the maximum benefit of integrated water resource management priorities such as watershed stewardship or drinking water source protection. It is however important to note that despite the historical lack of an integrated and comprehensive provincial framework regional progress on collaborative and stewardship initiatives have been made, primarily through the efforts of dedicated local community volunteer groups, non-profits and other committed organizations – yet, with a more coordinated approach so much more is possible.

Governance Defined

The sum of the many ways individuals and institutions, public and private, manage their common affairs. It is a continuing process through which conflict or diverse interest may be accommodated and co-operative action may be taken. It includes formal institutions and regimes empowered to enforce compliance, as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interests.

Commission on Global Governance (1995)
Our Global Neighbourhood, Oxford University Press.

In recognition of the challenges facing British Columbia, the provincial Minister of the Environment created the Water Stewardship Division and the Office of the Premier released *Living Water Smart: British Columbia's Water Plan* (LWS) in June 2008. LWS is a comprehensive plan that outlines a new approach to water management in the province and includes a vision and detailed short-term targets. Achieving this vision will require new forms of governance and new relationships with affected communities and stakeholders.

Importance of Governance

Governance is the process of decision making – *who* decides and is accountable for the decision, *what* the parameters of the decision are, and *how* decisions are made. Included in the concept of governance are the institutions, practices and laws through which society makes those decisions and ultimately takes action. Effective modern water governance includes more participants in the decision-making process than just government, for example, First Nations and stakeholders such as citizens, professional associations, business, industry, and communities.

Fundamentally, the goal of improving governance is to build flexibility and resilience into the governance structure, thus enhancing the ability to adapt and effectively address current and future challenges. This contrasts with traditional centralized approaches to decision making and management; yet it is increasingly recognized both globally⁵ and nationally⁶ as *the* critical priority. This is especially important in a province that is as geographically and culturally diverse as British Columbia.

Water Governance Reform: An Emerging Priority

Many jurisdictions across Canada and around the world have embarked on significant governance reform initiatives. The motivation and benefits associated with these reforms vary from place to place, but generally include the need to: create social resilience to adapt to a changing climate; promote social and technical efficiency; leverage expertise and additional resources for management, including planning, monitoring and enforcement; clarify roles and responsibilities; protect and enhance the flow of ecological goods and services; and, to reduce conflict. Overall these reforms follow a similar pattern and

4. Specific examples of this inconsistent application across the province include: drinking water management, groundwater protection, riparian resource protection and management, water conservation promotion, and flood and dike maintenance.
5. Globally, for example, see Journal of International Affairs (2008) *Water A Global Challenge – Special Issue*. Columbia University School of International and Public Affairs Vol 61 (2); Kemper, K.E., W. Blomquist, and A. Dinar (eds) (2007) *Integrated River Basin Management Through Decentralization*. The World Bank and Springer Publishing. New York; Conca, K. (2006) *Governing Water – Contentious Transnational Politics and Global Institution Building*. MIT Press. Cambridge, Massachusetts; UNWDR. (2006) *Water a Shared Responsibility for People*, United Nations World Water Development Report 2, Paris, France; Rogers, P. and A.W. Hall. (2003) *Effective Water Governance*. TEC Background Papers, No. 7 Stockholm: GWP; Global Water Partnership. (2000) *Integrated Water Resource Management*. Stockholm, Sweden: GWP.
6. In Canada see Morris, T.J., D.R. Boyd, O.M. Brandes, J.P. Bruce, M. Hudon, B. Lucas, T. Maas, L. Nowlan, R. Pentland, and M. Phare. (2007) *Changing the Flow: A Blueprint for Federal Action on Freshwater*. The Gordon Water Group of Concerned Scientists and Citizens. Toronto, Ontario; Karen Bakker (ed) (2007) *Eau Canada: The Future of Canada's Water*. UBC Press, Vancouver, British Columbia; Pollution Probe (2007) *Towards a Vision and Strategy for Water Management in Canada*. Final Report of the Water Policy in Canada: National Workshop Series. Ottawa, Ontario; Vaux Jr. and Sandford, B. (2006) *Rosenberg International Forum on Water Policy, Program Synopsis and Lessons for Canada and Alberta*. Rosenberg Forum, September 6-11 Banff, Alberta; Brandes, O. M., Ferguson, K., M'Gonigle, M. and Sandborn, C. (2005) *At a Watershed: Ecological Governance and Sustainable Water Management in Canada*. POLIS Project on Ecological Governance, University of Victoria, Victoria, BC.

include the following common characteristics:⁷

- emphasize collaborative engagement with a variety of stakeholders;
- focus on the watershed as the appropriate scale for water management (and in some cases governance);
- secure resources for crucial activities such as monitoring, compliance and enforcement, protection (including restoration) of ecosystem function and natural capital, and investment in green infrastructure; and,
- embed conflict avoidance and resolution mechanisms.

Governance alone cannot correct inadequate water management, but poor governance will almost certainly prevent effective management. Setting British Columbia's water governance on a new course is critical to addressing current water use conflicts and ensuring the long-term health of watersheds and water resources across the province.

Developing water sustainability is the foundation of regional and provincial prosperity, particularly in light of global economic and environmental change. The challenge is to identify the appropriate characteristics of a water governance model for British Columbia given this province's unique characteristics some of which are listed below:

- aboriginal rights and title;
- fisheries and the "salmon culture;"
- population growth, demographic change and increasing water demand;
- lack of groundwater regulation;
- vested water rights and the question of compensation;
- Crown land (and water) management;
- lack of sufficient water science and necessary data;
- role of the federal government;
- BC Hydro; and,
- independent power projects.

This initial list introduces some key considerations and is certainly not conclusive. Other more general factors include regional geographic and cultural diversity, climate change, and shifting industrial and economic priorities. It is crucial to note that any successful water (or watershed) governance reform must account for, and effectively address, these issues and challenges, emphasizing that a true made-in-BC approach is what is ultimately needed (see Appendix A for a more detailed overview of each issue and Appendix B for an overview of the complexity of the current legal framework for water in British Columbia).

Methodology and Paper Overview

The analysis outlined in this discussion paper is based on a global literature review of water governance models and a comprehensive understanding of the legal framework of water governance and management in British Columbia.⁸ Section I defines water governance and puts it in an overall water security and sustainability context. This section concludes by identifying several challenges and emerging issues that any water governance model must address to effectively function in the province. Section II introduces three idealized governance models and describes and compares each of their key attributes and criteria. A more detailed comparison is developed in the tables in Section III. Each of the key characteristics of the models is explored through these tables and supporting discussions, allowing decision makers, sector and community leaders and policy analyst to understand the application and implications of the governance models through comparison and contrast. Section IV provides a brief analysis of the implications for British Columbia and offers some final conclusions and priorities for moving forward. The appendices provide additional information about emerging challenges and issues in British Columbia.

7. Jurisdictions include Australia, South Africa, Brazil, New Zealand, parts of the United States and much of Europe under their Water Framework Directive. Governments in Ontario, Southern US and parts of Europe initiated some reform initiatives over 50 years ago, others such as Australia, New Zealand and South Africa are much more recent.

8. Brandes, O.M. and S. Jackson (forthcoming) *Watershed Governance Technical Backgrounder*. POLIS Project on Ecological Governance, University of Victoria, Victoria, B.C. – A Draft version of this report is on file with the author. See also Brandes, O.M. and D. Curran (2008). *Water Licenses and Conservation: Future Directions for Land Trusts in British Columbia*. Land Trust Alliance of B.C.

SECTION II:

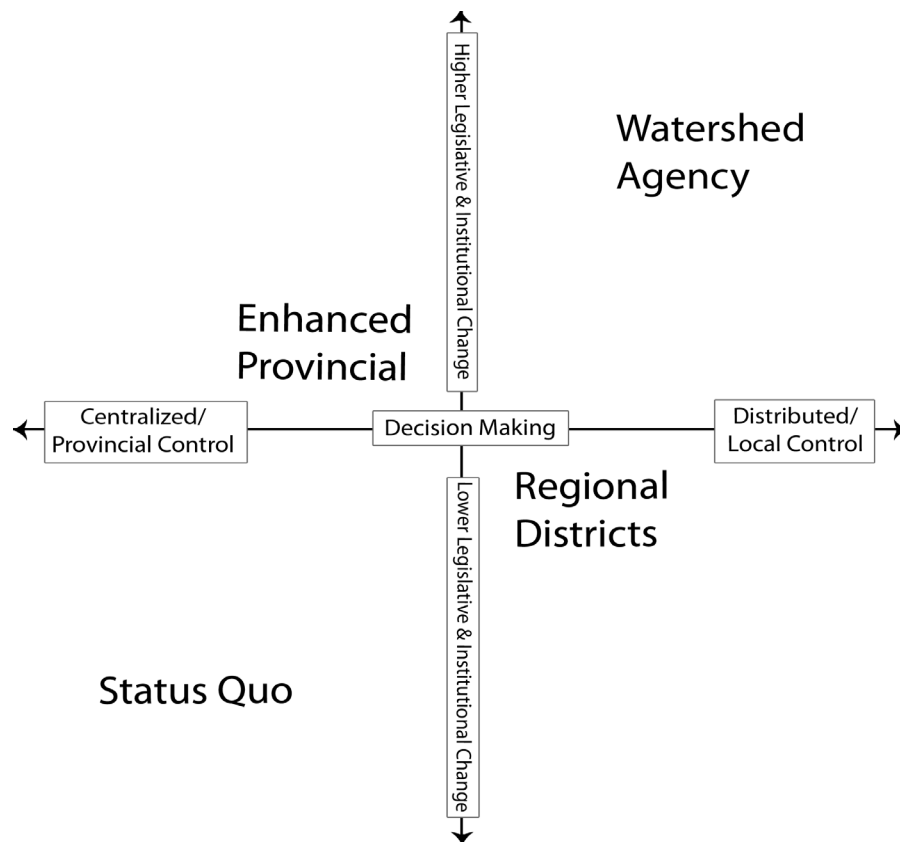
Water Governance Reform Models

The analysis developed in Sections III and IV considers three possible governance reform models and compares them with the status quo of water governance in British Columbia as it is currently administered (i.e., the actual current practices and decision-making processes, not the possible approaches under existing legislation or new policies). Each of the models of water governance outlined here – *Enhanced Provincial Management*, *Watershed Agency* and *Regional District Leadership* – represents a potential governance and institutional arrangement with distinct characteristics to illustrate the range of options available when considering strategic water governance reform. This range of models does not represent the full spectrum of governance possibilities, but provides three illustrative options to compare and contrast with the status quo in British Columbia, and to help evaluate the potential implications of governance reform. Any of the models, including aspects from each model, are possible reform options.

Enhanced Provincial Management, and *Watershed Agency* are the two more comprehensive reform models and therefore likely to have higher initial direct costs for the Province. The *Enhanced Provincial* model emphasizes well-resourced centralized provincial government decision making and control. The *Watershed Agency* – an example of a comprehensive approach to delegated or distributed governance – represents watershed- or regional-scale decision making, but with interplay between both local and provincial priorities and decisions reflecting provincial standards and oversight. The *Regional District Leadership* option emphasizes more active local and shared decision making, but within the existing institutional and legal water framework. The *Regional District* model devolves water management and aspects of governance to existing regional districts, and includes only minor provincial involvement to enable devolution and ensure basic safeguards and protection.

Any significant governance reform will likely include elements of each model, thus a hybrid model is a probable outcome. For example, the *Regional District* model could be modified so that boundaries better align with watersheds or aquifers; or aspects of the *Watershed Agency* model could be

Figure 1: A spectrum of governance options, arranges the models to reflect more or less provincial or local decision making and the level of legislative and institutional change associated with each.



tested through pilot projects that are part of a more centralized management and governance approach such as the approach articulated by the *Enhanced Provincial Management* model. A blended model that builds on existing initiatives in the province may offer the potential for quicker start-up and can parlay established partnering, existing First Nations involvement and the ability to adapt to new or changing provincial frameworks. In such a scenario non-profit organizations and interested water-related coalitions would likely have an important role in leveraging resources, facilitating engagement and dispute resolution capacity, providing technical assistance and bridging between the various orders of government and any potentially new (or existing) watershed entities.

Model Overviews and Characteristics

Each of the proposed models is described below and summarized in the following table that compares the models based on a number of key governance attributes and characteristics:

- *who* makes the key decisions about water
- *how* decisions about water are made (directly or indirectly)
- *what* aspects of water are managed and governed
- *primary objectives* (or governing principles)
- *accountability* mechanisms for decisions and actions

Details about each model are provided in the next section under key themes such as roles and responsibilities, good governance principles, funding and financial sustainability, and a summary of strengths and weaknesses.

Model 1: Status Quo

Overview – This model is based on the current water governance and management regime in British Columbia. The provincial government manages water use with significant delegation to local governments for riparian protection and land use decisions. Water governance is primarily set out in the *Water Act*, with other acts such as the *Drinking Water Protection Act*, *Environmental Management Act*, *Dike Maintenance Act*, *Fish Protection Act* and *Water Protection Act* establishing important roles and responsibilities

(for example governing drinking water, pollution discharges, flood infrastructure and confirming ownership of groundwater and surface water by the provincial Crown).

Decision Making and Accountability Characteristics

Decisions that impact watersheds and water use are made by provincial staff in Victoria and in regional offices. Designated statutory decision makers make decisions about water use in the context of individual streams, irrespective of surface water and groundwater interactions. Decisions that relate directly to water, such as water management plans and licences are highly discretionary and/or may face political (often local) and administrative hurdles. This model tends to be used in response to crisis and does not emphasize proactive planning.

Model 2: Enhanced Provincial Management

Overview – This model relies on using existing legal tools and policy approaches to their fullest potential to meet the goals of the *Living Water Smart* plan, and also promotes modernizing the *Water Act* to better account for ecosystem or instream flow needs. As indicated in LWS, water governance and management are based on the principles of watershed and ecosystem health, collaborative engagement, conservation and science, and information and learning. Actions in the watershed are more actively monitored and existing laws enforced.

Decision Making and Accountability Characteristics

In this model the provincial government is still the primary nexus of decision making. Governance does not change significantly; however, management, including financial and human resources for the water management program, are improved. Decision making is delegated in specific and appropriate situations. Various non-state actors, such as stewardship groups, regional water boards, trusts or councils and professional associations may remain active and engaged as dictated by provincial goals and objectives. Watershed planning (and management) is a priority with significant investment and leadership by the Province to develop legislated watershed management and source protection plans with local partners. Final decision making, monitoring (including State of the Watershed reporting) and enforcement remain clear provincial responsibilities.

Model 3: Watershed Agency

Overview – Law reform facilitates the creation of watershed authorities. These regional entities are based on local representation to govern water within a watershed (or basin) or ecological unit such as groups of watersheds or sub-basins (based on need, regional population, capacity and willingness to govern). Individual Watershed Agencies continually monitor and publicize the activities in, and impacts to, their watersheds. These agencies could have taxing powers and formalize funding arrangements with local governments, with senior governments providing core administrative and special project support.

Decision Making and Accountability Characteristics

In addition to the *Living Water Smart* plan, the Province establishes priorities for these agencies to lead watershed/regional visioning and develop detailed water and watershed plans. The agencies also provide formal avenues to address cumulative impacts and to influence resource and land use decision making, and conduct education and outreach programs, engaging key stakeholders and the public. Based on capacity and access to funding, these authorities may also “opt in” to take on certain specific delegated responsibilities beyond the development of these legally enforceable plans. The additional responsibilities may include: water allocation, regulation of water quality standards (beyond provincial standards), restoration initiatives, source protection and sustainable infrastructure programs.

Senior government sets minimum standards and provides guiding principles for instream flow needs, and environmental and drinking water quality, as well as for the decision-making accountability structures of the agencies. The individual agencies are composed of provincial, aboriginal and local government, water users and community representatives. A streamlined provincial institution provides general oversight, support and an exchange of best practices. An independent auditor operating at arm’s length from government provides regular audits and complaint investigations that build public confidence.

Model 4: Regional District Leadership

Overview – This model uses the current regional district governance structure (appointment of regional board members from municipal councils and direct election in unincorporated electoral areas) for provincial devolution of certain water management and decision-making responsibilities. Boundaries of regional districts do not currently conform to watershed boundaries in most cases and thus significant collaboration between local governments or boundary amendments to facilitate watershed planning are required. Like the *Watershed Agency* described above, the Province establishes priorities within which the regional district leads watershed/regional visioning, develops detailed water and watershed plans, and conducts public education and outreach programs. Based on capacity and access to funding, these authorities may also “opt in” to take on specific responsibilities beyond the development of legally enforceable plans, including: regulation of water quality standards (beyond provincial standards), restoration, source protection and sustainable infrastructure programs.

Decision Making and Accountability Characteristics

Regional districts use existing mechanisms such as *Regional Growth Strategies* and *Official Community Plans* to articulate water management priorities. The provincial government establishes province-wide minimum standards for planning, water quality, flood protection, and accountability, and maintains an oversight role. Decision making rests either with a committee of the regional board or a commission made up of locally elected representatives. Aboriginal and stakeholder involvement is through advisory committees. Significant additional water management expertise, training and decision support tools are provided by the provincial government to most regional districts. Provincial accountability measures that monitor the implementation of long-term watershed and public health goals and that consider the local priorities of regional districts also need to be developed.

Table 1:

Water Governance Models Overview

	Status Quo	Enhanced Provincial Management
Who	Provincial government with ad hoc/devolved local actors	Provincial government with identified partnerships and clear areas of responsibility and accountability
How	Centralized, but generally ad hoc Focus is on promotion of individual resource sectors and crisis response	Centralized and coordinated decision making Emphasis on formalized legislated watershed, groundwater, source and flood protection planning at provincial and community levels
What	Planning only in priority areas as requested by communities and stakeholders Licensing and allocation based on First in Time, First in Right (FITFIR) Flood control funding to local governments Limited drought and source protection based on crisis response in identified priority areas	Comprehensive planning including water and watershed management, source protection and groundwater plans Detailed <i>State of the Watershed</i> reporting Licensing and allocation will recognize water flow requirements for ecosystems and species Flood control, drought response, and drinking water infrastructure managed in partnership Cumulative impacts addressed through coordinated regional efforts
Provincial Role	Responds to site-specific issues and crisis management	Takes the lead on all major files and sets the context/framework for engagement with other stakeholders and partners
Primary Objectives	Access to water for economic development Water use certainty	Water sustainability Watershed health Improved efficiency Economic certainty Community consultation Adaptive management
Accountability⁹	Standard existing democratic and institutional mechanisms (see Footnote below)	Standard existing democratic and institutional mechanisms (see Footnote below) Increased accountability by development of arm's length audit/oversight board

9. Accountability is a key “good” governance principle and a foundation to our democratic values. Naturally, each of the identified models will be influenced by the democratic election process of all levels of government with oversight through the rule of law and mechanisms such as Access to Information, the Auditor General’s and Ombudsman’s offices, and various provincial tribunals or review bodies such as the Forest Practices Board or the Environmental Appeal Board.

Table 1 Continued

	Watershed Agency	Regional District Leadership
Who	Institutional arrangements (authorities or trusts) at the watershed and regional scale (either evolved existing agencies or new institutions)	Regional districts through regional boards (either committees or commissions) with elected directors and staff support First Nations and stakeholder participation through advisory committees
How	Decentralized implementation but within the context of provincial goals Comprehensive watershed-based plans Robust local First Nation and stakeholder roles in each region	Decentralized decision making within context of provincial standards Some provincial oversight based on general environmental, public health and accountability goals
What	Comprehensive planning including water and watershed management, source protection, and groundwater planning facilitated by the Province Individual watershed/region reporting Infrastructure & restoration projects, flood control, drought response and drinking water infrastructure managed at the watershed Variable role (with potential to “opt in”) in water allocations, source protection and pollution prevention, but based on ecosystem and basic human needs Formal opportunities to influence resource (fishery, forestry, mining, etc.) decision making based on cumulative impacts on watershed health and function	Comprehensive planning within regional district context of land use and growth management Water service provision, water quality, flood control and source protection Potential for licensing (including groundwater) based on a provincial regulatory system
Provincial Role	Passes enabling legislation and provides core institutional support, including data and science Provides context and minimum standards for quantity, quality, source protection and floods Monitors indicators of ecosystem function and provides enforcement Creates arm’s-length oversight body	Provides ongoing capacity and guidance Provides context and minimum standards for quantity, quality, source protection and floods Monitors key indicators of ecosystem function and provides some basic enforcement
Primary Objectives	Water sustainability Watershed health Improved water productivity Community engagement Prevention, precaution and adaptive management Social and watershed resilience	Cost effective access to water for local economic development Local economic certainty Efficient water management Community consultation
Accountability⁹	Standard existing democratic and institutional mechanisms (see Footnote) Increased local accountability through Agency appointee process and local watershed-based institutions and representation with provincial oversight. Oversight and complaint investigation through development of arm’s-length audit/review board	Standard existing democratic and institutional mechanisms (see Footnote) Increased local accountability through local election and local representation related to water local advisory or water boards with provincial government oversight.

SECTION III:

Detailed Comparison of Activities and Functions

The following four tables – Addressing Governance Principles, Roles and Responsibilities, Funding and Financial Sustainability, and Strengths & Weaknesses and Changes Needed – provide the detailed comparisons of the various water governance models.

Table 2:
Addressing Water Governance Principles

Principle	Status Quo	Enhanced Provincial Management	Watershed Agency	Regional District Leadership
Vision¹⁰	<i>Living Water Smart</i> provides a provincial vision No clear commitments for resources for implementation	<i>Living Water Smart</i> provides a provincial vision Additional implementation priorities with committed budgets to undertake the full range of commitments and activities	<i>Living Water Smart</i> provides a provincial vision Additional watershed/basin visions based on sustainability tied into provincial implementation priorities	<i>Living Water Smart</i> provides a provincial vision Ad hoc regional visions
Transparency¹¹	Access to Information Public database of existing water licences, reserves and restrictions Public Notifications and advertising for certain classes of decisions	Same as <i>Status Quo</i> plus: Stronger public consultation and engagement State of the Watershed reporting	Same as <i>Status Quo</i> plus: Local authority meetings Public consultation, engagement and annual reporting Periodic government oversight/audit reporting	Same as <i>Status Quo</i> plus: Board & committee meetings
Fairness¹²	Generally favours local extractive priorities	Priorities set by provincial goals but with some attention to ecosystem and identified local concerns	Ecosystem needs balanced by local priorities guided by provincial goals and principles	Provincial minimum standards applied through local priorities
Ecological sustainability¹³	Ad hoc – Variable by region and water use and based on crisis response	Systematically addressing the targets and goals set out in <i>Living Water Smart</i> Informed by Water Management Planning and State of the Watershed reporting	<i>Living Water Smart</i> establishes the baseline Addressed through long-term watershed health planning at the Basin/local scale Informed by local watershed reporting	<i>Living Water Smart</i> establishes the baseline Local priorities included by watershed/regional planning
Shared decision-making¹⁴	Ad hoc – Based on devolved responsibility for decision making to regional staff with some public input	Consultative – Government engages stakeholders through Water Management Planning	Collaborative – Formal partners defined by <i>Watershed Agency</i> jurisdiction Ongoing/interactive stakeholder engagement	Devolved – Local government with input from First Nations & stakeholders through committees and advisory bodies

10. Vision – having a clear sense of what the goal and guiding principles are to inform any governance model and provide direction for subsequent policy and actions

11. Transparency – ensuring basic information and clarity of process of decision making are publicly available

12. Fairness – meeting the needs of the public, licensees, service providers, and ecosystems

13. Ecological Sustainability – placing ecological function and ecosystem health at the forefront of decision making;

14. Shared Decision-making – involving a range of parties in decision making and governance

Table 3:
Roles and Responsibilities

Activities		Status Quo	Enhanced Provincial	Watershed Agency	Regional District
Watershed Planning		Limited (e.g., only one legislated plan in progress in the province) Initiated and controlled at the local level	Widespread and legally enforceable Initiated and controlled by the Province	Widespread, legally enforceable and integrated across resource and use sectors Jointly initiated and controlled (Province and Agency)	Intermittent, as mandated through <i>Regional Growth Strategies</i> , and <i>Official Community Plans</i> (and other geographically watershed plans)
Cumulative Watershed Impacts		Not generally considered or limited in scope to water availability	Could be considered through water management planning and coordinated decisions making in the regional offices	Considered through enforceable watershed management planning, provincial oversight and Agency influence on resource activity decision making and licensing	Impacts considered in <i>Regional Growth Strategy</i> and incorporated into <i>Official Community Plans</i> & bylaws
Water Quantity	Allocations	Surface water licensing and approvals based on gross water availability, guided by First in Time, First in Right (FITFIR), with instream flow needs addressed in some areas (e.g., Vancouver Island) No Groundwater regulation Provincial decision making	<i>Water Act</i> modernization to include surface and groundwater licensing that take into account legally enforceable instream flow needs (IFN) Provincial decision making	Variable: <i>Watershed Agencies</i> could "opt in" to allocate water, monitor and enforce within the context of their watershed plan, (but be guided by minimum ecological (or IFNs) standards set by the Province in new water laws)	Localized approvals and licensing guided by provincial regime under current water laws and principles (FITFIR)
	Flood Control and Drought Management	Maintenance of dikes (and drainage) devolved to local government with provincial oversight and funding based on crisis (<i>Dike Maintenance Act</i>) Attention given to areas or watercourses in crisis	Proactive provincial engagement with local government in priority areas Formalized provincial funding to address changing precipitation variability associated with climate change Enhanced monitoring assists in priority identification and drawback of allocations	Variable: <i>Watershed Agencies</i> could "opt in" for watershed based flood control and drought management responsibilities (but with provincial guidance and support) Drought prevention included in watershed management plans Enhanced monitoring and local decision-making assists in rapid adaptation (both to allocations and flood protection infrastructure)	Local management with provincial funding support
Water Quality	Environmental	Pollution prevention laws and regulations (<i>Environmental Management Act</i>)	Pollution prevention laws and regulations with significant local enforcement	Variable – see above	Through bylaws and local enforcement (Regional Districts and Health Authorities)
	Drinking/ Source Protection	Individual municipalities (or water purveyors) through delegated responsibility with oversight of Health Authorities and Drinking Water Protection Officers	Enforceable source protection plans with oversight of Health Authorities and Drinking Water Protection Officers	Local watershed-based source protection plans with Agency attention to problem areas identified by Health Authorities Provincial potable water standards enforced by Drinking Water Protection Officers	Source protection through regional planning & zoning Provincial oversight of Health Authorities and Drinking Water Protection Officers
Infrastructure		Provincial funding provided on a project-by-project basis	Provincial funding to be leveraged to achieve <i>Living Water Smart</i> targets and goals	Full-cost utility fees and supported by funding across governments based on watershed needs with local priorities Complemented by targeted provincial infrastructure programs to achieve <i>Living Water Smart</i> targets and goals	Local taxes and full-cost utility fees complemented by provincial infrastructure programs
Compliance and Enforcement		Ad hoc – Crisis response	Provincial officers engaged in ongoing monitoring and enforcement Use of administrative and legal mechanisms	Local officers engaged in ongoing monitoring and enforcement Use of administrative and legal mechanisms Provincial review of compliance	Bylaw enforcement Some provincial and Health Authority enforcement
Information and Monitoring		Ad hoc	Provincial information and reporting systems and bi-annual State of the Watershed reporting Compilation of data and watershed health indicators by senior government	Watershed Agency annual reporting Compilation of data and watershed health indicators by senior government Provincial oversight body public reporting	Variable depending on capacity of regional district

Table 4: Funding and Financial Sustainability¹⁵

Given the introductory scope of this discussion paper, it is not possible to evaluate the funding implications of each model. A full comparison of costs would need to consider the revenue needs for each model and the direct costs for both the Province and users. This would include the impacts of taxes and fees on water use behaviour in the watershed, and other important financial considerations such as:

- short- and long-term cost implications of each model;
- degree of centralization or decentralization of funding responsibility (how the funding burden is shared between the Province and local agency/revenue sources);
- responsiveness of water users' behaviours to changes in fee and tax structures;
- level of connection between taxation/fee impacts and local government and agency decisions; and
- potential value of in-kind contributions, particularly for education, monitoring and restoration.

The table below outlines some preliminary considerations and provides some initial guidance.

Funding	Status Quo	Enhanced Provincial Management	Watershed Agency	Regional District Leadership
Primary Sources	Provincial general revenue Water licence fees Local tax base for dike maintenance	Provincial general revenue Water licence fees allocated to budgets for watershed management, monitoring and enforcement Local tax base for dike maintenance	Shared funding (local/provincial) Water licence fees allocated to watershed management, monitoring and enforcement Local government contributions and water and sewer/liquid waste disposal use fees	Funding for core activities from the local tax base and the Province Water and sewer/liquid waste disposal use fees
Taxing Powers	Through provincial general revenue	Through provincial general revenue	Property and tourism- or industry-based water taxation powers	Property tax-sharing powers
Other Revenue Sources	Federal infrastructure grants or transfer payments for specific infrastructure upgrades	Federal infrastructure grants or transfer payments for specific infrastructure upgrades	Provincial infrastructure programs Program-based fees, such as for water efficient fixtures Other funding and special program fees for regional activities In-kind	Provincial infrastructure programs Other funding and special program fees for regional activities In-kind

15. The different revenue types for operating these governance models include:
 Provincial funding – flows from general revenue or from dedicated funds, such as from water licence revenues.
 Taxation – includes property, tourism (bed unit), and industry taxes.
 Fees – includes water and sewer use fees.
 Infrastructure programs – existing or enhanced provincial funding for specific projects, such as water treatment systems, conservation programs and infrastructure upgrade.
 Program Costs – includes special programs for which an agency would charge a fee.
 In-kind – Community organizations and local scientists may assist with monitoring and public education.
 Other Funding – includes project-specific funding from alternative sources (such as foundations, trusts or private funding) or through federal government programs.

Table 5:

Strengths, Weaknesses and Changes Needed

	Status Quo	Enhanced Provincial Management	Watershed Agency	Regional District Leadership
Strengths	Existing model with no change needed Familiar	Only minor changes to existing model needed Efficient roll out and some capacity already exists Potential to address some long-term problems Highly consultative	Increased social resilience and adaptability Local governance within provincial framework with strong attention to watershed context Ability to leverage limited resources (financial and human) and access expertise available outside government Shared responsibility and highly collaborative – significant potential to meaningfully engage First Nations and stakeholders	No new major institutional and legal reforms needed Local governance within provincial framework with strong attention to local needs May harness existing localized knowledge and expertise Devolved responsibility
Weakness	Crisis driven and potential ongoing public and occasional licensee dissatisfaction Continued watershed deterioration likely	Significant financial and human resources needed Political will and institutional (and budgetary) commitments required Stakeholder engagement needed and maybe be difficult to build trust without power and decision-making sharing Changing provincial priorities may reduce watershed focus	New institutions and legal reforms needed Some provincial resources (especially initially) and significant stakeholder engagement required Transition to new system increases uncertainty Loss of provincial government control	Limited (local) perspective and capacity to deal with long-term or persistent problems Potential conflict as local decision may have watershed wide impacts Variable First Nation & community engagement
Provincial Direct Costs	Low – Existing model and resources	Medium-High – Initially, and Medium ongoing	High – Initially, and Low ongoing due to ability to leverage and develop local capacity	Medium with ongoing demands
Positive Environmental Outcomes	Low -- Continued degradation and loss of watershed function	Medium – Based on provincial priorities and ongoing investment in protection of ecological goods and services	High (variable)– Based on ability to address watershed cumulative impacts and whole system priorities, but dependent on local conditions	Variable – Based on local priorities and local political will
New Institutions or Reforms Needed	None	<i>Living Water Smart</i> implementation commitments (and potentially the need for a new catalyzing entity or authority) Arm's-length oversight body	<i>Watershed Agencies</i> at the watershed scale Provincial body to coordinate and enable authorities Provincial audit/oversight body	Some regions may require a water board or other bodies to support/complement regional districts Increased capacity for local decision makers and staff
Law Reform Needed	None	<i>Water Act</i> updated to address Instream Flow Needs Groundwater regulation Building Code updates	New <i>Agencies Act</i> needed (or reforms enabled through <i>Water Act</i> amendments) Full water law reform Comprehensive groundwater regulation	Not necessary, but could include enhanced regional water management powers such as drought control, source protection and drinking water standards
Actions Needed	Monitor for crisis and respond	Policy and budget commitments to implement <i>Living WaterSmart</i> <i>Water Act</i> modernization	Enabling legislation for Watershed Agencies and comprehensive water law reform including <i>Water Act</i> modernization Identification of priority areas and potential pilot projects Investment in capacity at the local levels for authorities	Assessment of regional district capacity Region specific capacity building <i>Water Act</i> modernization

SECTION IV:

Implications and Conclusions

Implications for the Government of British Columbia

The *Enhanced Provincial Management* and *Watershed Agency* models are the most vigorous governance reform options to effectively institutionalize an adaptable and sustainable water management regime in British Columbia. These two models have the potential to go the furthest to account for instream (or ecosystem) flow needs, to develop an effective groundwater management regime, and to enable comprehensive water (and watershed) management planning and drinking water source protection. The *Watershed Agency* model also offers an opportunity to substantially improve the engagement and collaboration of First Nations and other stakeholders. This is achieved by enabling local communities and promoting full consideration of the implications of land use decisions on water quality and quantity, a fundamental connection that is virtually absent in current local (or provincial) government decision making. Both models require clear government commitments to provide resources and policy attention.

A water governance model based on an *Enhanced Provincial Management* regime could, in the short term, address many ecosystem and community needs. However, such a centralized model in a province as diverse as British Columbia may be more costly over the medium to long term than a more distributed option with more potential for leveraging funding, resources and expertise. A *Watershed Agency* model would likely be more costly to implement initially, and would require careful design to ensure it does not become perceived as an additional layer of government and bureaucracy. In the longer term, the *Agency* model would likely be less costly and

offer better community resilience and opportunities for environmental protection and overall adaptability. Once established, this model would be able to adapt to specific challenges and needs associated with the diverse regions across the province and evolve to address new or emerging concerns.

The *Regional District Leadership* model is an example of distributed governance in the context of the existing water management framework. It offers some benefits such as cost sharing and local engagement, and could be rapidly deployed. An emphasis on Regional Districts requires careful consideration during implementation to quell fears of senior government simply further downloading responsibilities without providing the necessary support – an approach that would further accentuate British Columbia's current piecemeal approach to water. Although this model may seem expedient, politically and bureaucratically, it is unlikely to address the need for a comprehensive reconfiguration of water management and governance in British Columbia to deal with persistent challenges such as increasing water scarcity, climate change and demands for effective engagement by local communities and key stakeholders.

Conclusions and Priority Actions

Watersheds are changing due to climate change, urbanization, intensification of water withdrawals and ongoing resource development. Effective water resource management underpins basic human and watershed health and is fundamental to long-term prosperity. Degraded watershed function undermines the flow of ecological goods and services, and reduces ecosystem resilience and community health. Water use conflicts and threats to watersheds, communities

and economic interests are increasing in the province, and no matter what course is chosen, it will take several years to change management and governance structures to effectively address these challenges. As this discussion paper demonstrates, governance is critically important; yet, good governance alone cannot correct inadequate water management, but poor governance will almost certainly prevent effective management.

It is crucial that the provincial government act now, particularly in light of the emergence of water as a global and regional priority, the impacts of climate change on water resources, and the various provincial (and federal) policy commitments including the *Living Water Smart* plan.

The immediate priorities for water management in British Columbia are to:

- establish groundwater quantity regulations;
- ensure rigorous legally enforceable instream (or ecosystem) flow requirements;
- protect community drinking water sources; and,
- establish indicators to monitor watersheds (and ecosystems) based on proper functioning conditions.

While this discussion paper focuses on water governance, watersheds provide the crucial context. A recent report by the Pacific Salmon Forum reinforces the need for a transition towards a watershed governance approach here in British Columbia, recognizing that to separate water-based ecosystems from the broader ecosystem of a watershed will ultimately be ineffective.¹⁶

Inadequacies in governance, or how decisions are made, lead to problems with water management. To improve the water management regime in British Columbia, multiple ministries need to make governance reform a priority that attracts significant investment of financial resources and human capital. Government commitments and the systems necessary to ensure good management and governance protocols are needed (see box).

British Columbia is a geographically, hydrologically and culturally diverse province. No one governance or management regime will fit all regions, yet it is clear that improving water management will require better governance. Governments at

all levels no longer have the capacity to meet the governance challenges alone. Although a number of ad hoc collaborative governance approaches are beginning throughout the province, a more focused, comprehensive and integrated approach is urgently needed.

Provincial goals, and strong regulatory standards (particularly in the areas of watershed and public health), as well as local expertise and involvement in decision making will all contribute to better governance. Striking that balance is *the* challenge. With this policy discussion paper, we hope to contribute to this task by outlining a range of options, assessing their implications, and offering advice on priorities for action.

Attributes of Effective Governance:

- monitor and report on key indicators such as water flows, withdrawals and use, and watershed health and function;
- enforce existing rules and regulations;
- delineate authority between the provincial, federal, First Nations and local governments (including collaborative governance bodies);
- attend to cumulative impacts of multiple decisions within watersheds;
- shift from current sector-focused resource management to whole system (or ecosystem-based) approaches;
- provide independent oversight and reporting (including complaint investigation) that ensures regulators are making decisions based on ecosystem thresholds, and that industries and communities are operating within those limits; and,
- engage those affected by decisions to participate in governance.

16. Pacific Salmon Forum Final Report and Recommendations to the Government of British Columbia, January 2009. Available at <http://www.pacificsalmonforum.ca/final/BCPSFFinRptqSm.pdf>

APPENDIX A:

Context and Emerging Issues

The issues outlined below represent fundamental challenges inherent in any governance model pursued in British Columbia. For the purposes of this analysis these are only briefly described and flagged here for future in-depth consideration as part of a more detailed effort to develop a water governance model for British Columbia.

Cultural Considerations

Aboriginal Rights & Title

Surface water and groundwater is vested in the provincial Crown, but is subject to aboriginal rights and title claims protected under the Canadian Constitution. Most of the aboriginal rights and title claims to water in British Columbia have not been finalized and are not factored into existing water allocations under the water licensing regime and ecological needs for instream flows.

Fisheries & the “Salmon” Culture

Stream health is often viewed through a lens of protecting salmonids, a priority for both British Columbians and the federal government. While this value is important, it often drives water management and land use decisions. Water governance and management in British Columbia should have a range of values and should emphasize ecosystem protection as the priority.

Population Change and Increasing Demand

The population and per capita water use in British Columbia continues to grow while the perception that there is an abundance of water prevails in most parts of the province – this “myth of abundance” seriously challenges any comprehensive effort to address water issues in the province. Serious water issues are arising in areas experiencing extreme population growth, such as in the Okanagan and eastern Vancouver Island (often in areas where water supply is most sensitive due to dry climates or seasonal variation). In some

areas urban residential needs are beginning to conflict with the needs of the rural agricultural industry.

Population density and a changing demographic are also important considerations in British Columbia. Population density is low (3.4 persons per km²) in British Columbia compared to other states or countries (for example, California is 89.1 the United Kingdom 249.2 and New Zealand 15.1 persons per km²). The low density in British Columbia further entrenches the “myth of abundance” and perpetuates a lack of awareness about how water use behaviours upstream or downstream affect a watershed.

In British Columbia, the population is also aging, which means not only that the workforce will be reduced, but also potential tax revenue will decrease (while demands for services are likely to increase). This makes water management resourcing an important criterion for any reform option considered.

Legal Considerations

Lack of Groundwater Regulation

The Province does not regulate the use of groundwater and there is no comprehensive understanding of the cumulative effects of groundwater use on surface water hydrology. Currently, water allocation and licensing decisions do not take into account the interaction between groundwater and surface water.

Vested Rights and the Question of Compensation

The most pressing issue for many water licensees is maintenance of water flow and their vested rights to water under licence. The ability of Ministry of Environment staff to restrict water extraction during times of drought and the limited availability of compensation for rescinding a water licence are poorly understood. At the same time, many water rights are only partially used or not used at all and would be forfeit if the Ministry enforced the *Water Act*’s “use it or lose it” provisions.

Crown Land (and Water) Management

In most watersheds in the province there are a multiplicity of resource-based activities, yet limited coordination of the planning and use of this Crown land. The implications for water sustainability are potentially significant.

Institutional Considerations

Lack of Water Science & Necessary Data

Compared with other places in Canada and the world, there is limited current and accurate information available on British Columbia stream hydrology and water use under existing licences. Monitoring of hydrology and water use is complex in British Columbia because of the significant geographic variance (13 bio-geoclimatic zones) and the thousands of watercourses in the province. More attention must be given to aligning the need for data (and the capacity to analyze, interpret and apply it) with the provincial government and communities' capacity to generate it (for example, the BC Hydrometric system review showed that the current number of hydrometric stations is approximately 1/3 of that recommended by the world meteorological organizations and the hydrology professionals). This is particularly important as the impacts of climate change accelerate.

Federal Government Role

The federal government also has an important role to play in governance, no matter which model of reform is selected. For example, the *Fisheries Act* has significant powers that impact watersheds in Canada and influence stewardship, management and enforcement (especially in the context of habitat protection). Other areas where there is direct federal interaction on water include federal lands (such as national parks, Department of National Defence and reserves), and navigable and transboundary waters. Proactive federal-provincial cooperation and funding is important in making progress and overcoming existing obstacles.

BC Hydro

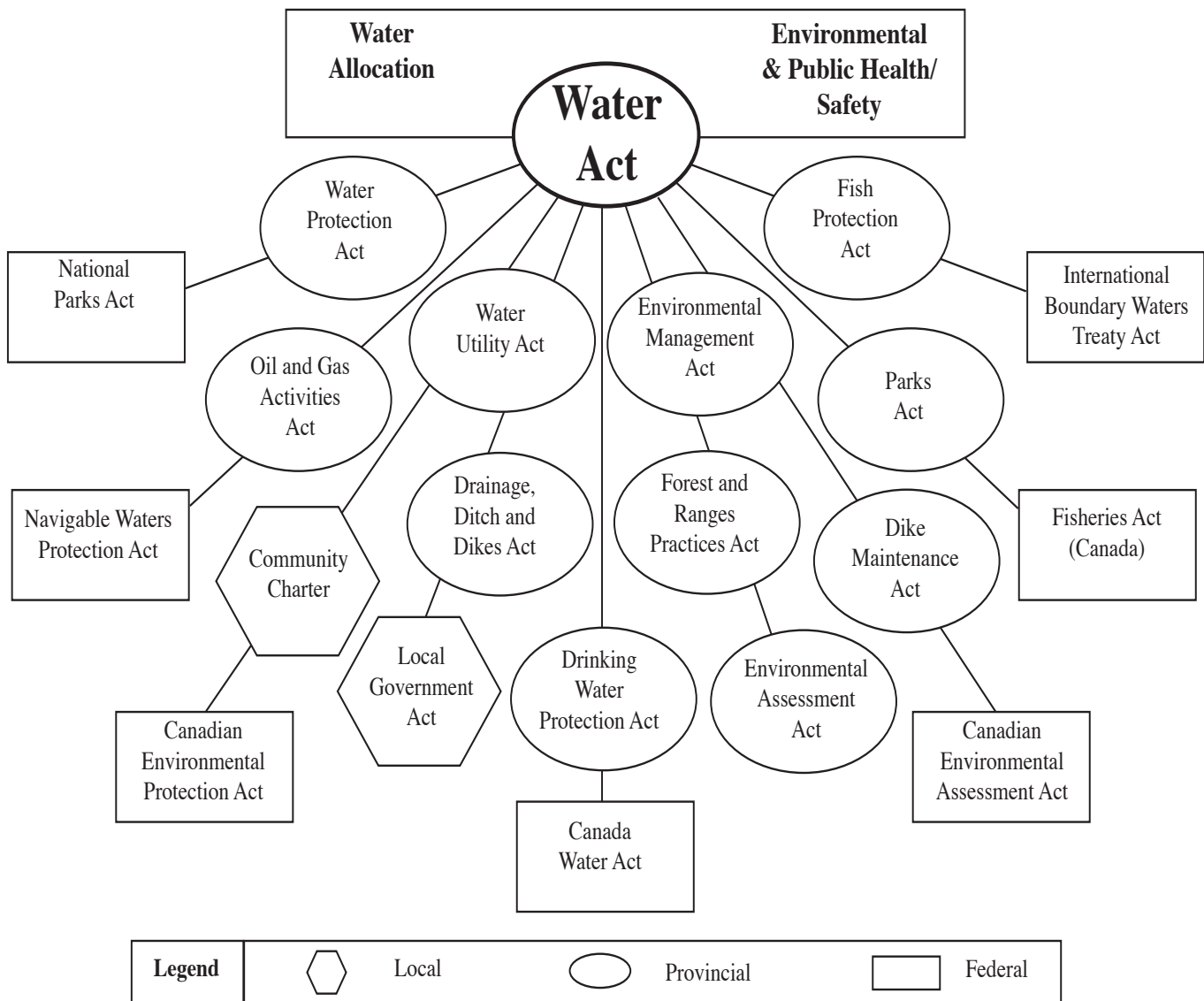
BC Hydro is by far the largest water user in the province and operates within a unique water governance and management context. With more interest in “green power” and mounting concerns about energy security, renewed discussion about the potential of hydro power, such as development of Site C as a new large hydro facility, may further challenge the existing (or any new) provincial water regime.

Independent Power Projects

Over the past three years there have been over 500 applications for water licences for independent power projects throughout the province. While not an extractive use per se, except in the reach in which they operate, the projects have significant environmental impacts with ecological consequences for the river or stream in question. Also, there is no current evaluation of the cumulative impacts, particularly in areas where multiple projects operate within close proximity of each other.

APPENDIX B:

Legislation Associated with Water in British Columbia



Source: Adapted from "Legislation Associated with Water in BC" Ministry of Environment 2008.

“The most common form of water conflict today is not the interstate water wars foreseen by so many international relations prognosticators, but rather the societally based conflicts between the proponents and opponents of controversial ways of manipulating water or the rules controlling it.”

Conca, Ken (2006) *Governing Water-Contentious Transnational Politics and Global Institution Building*. The MIT Press, London England. Page 376.

The POLIS Project

Created in 2000, the POLIS Project on Ecological Governance is a research-based organization housed at the University of Victoria in British Columbia. Researchers who are also community activists work together at POLIS to dismantle the notion of the environment as merely another sector, and to make ecological thinking and practice a core value in all aspects of society. Among the many research centres investigating and promoting sustainability worldwide, POLIS represents a unique blend of multidisciplinary academic research and community action.

Visit www.polisproject.org to learn more.

Water Sustainability Project

The Water Sustainability Project (WSP) is an action-based research group that recognizes that water scarcity is a social dilemma that cannot be addressed by technical solutions alone. The project focuses on three themes crucial to a sustainable water future:

- Water Conservation and the Soft Path
- Water-Energy Nexus
- Water Law, Policy and Governance

WSP works with industry, government, civil society and individuals to develop and embed water conservation strategies to benefit the economy, communities and the environment. WSP is an initiative of the POLIS Project on Ecological Governance at the University of Victoria.

Visit www.poliswaterproject.org to learn more.

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POLIS Project on Ecological Governance

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