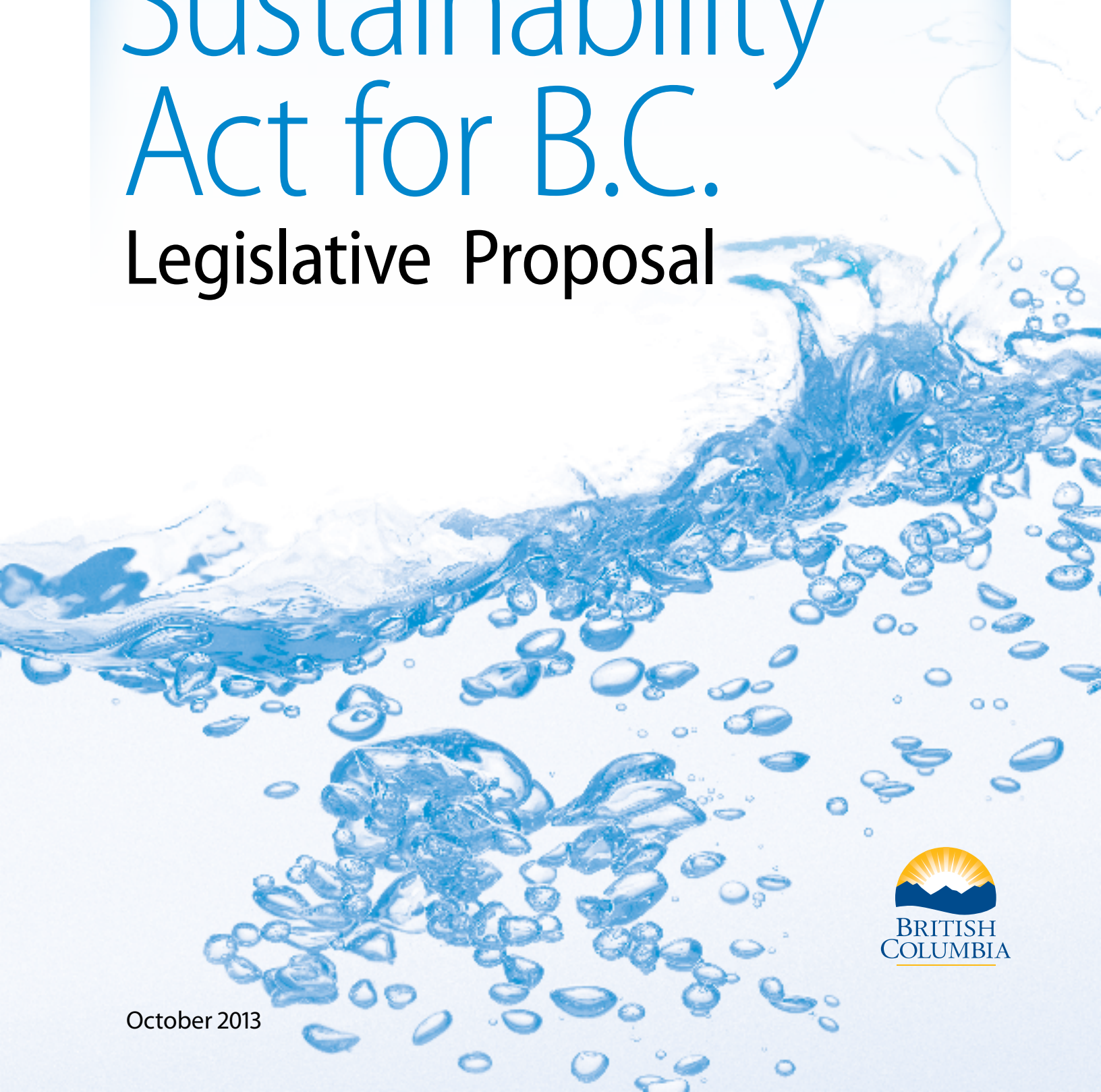
A Water Sustainability Act for B.C.

Legislative Proposal



BRITISH COLUMBIA

October 2013

Note
that all references
in this legislative
proposal to the
Water Sustainability Act
are in the context of the
Water Sustainability Act
as proposed legislation.

Message from the Minister

British Columbia's current *Water Act* was established more than one hundred years ago, and although it has evolved over the years, it is no longer adequate to address our growing population, expanding development and changing climate.

That's why the provincial government has been working hard towards bringing in a new *Water Sustainability Act*, to help ensure that our water stays healthy and secure for future generations.

Over the past four years we've consulted with citizens, First Nations, industry groups, environmental groups, local governments—everyone who has an interest in our water resource. British Columbians have sent us thousands of submissions—you've offered us some great ideas covering everything from how to protect groundwater, to how to ensure our streams and lakes stay healthy, to ways we can consider the impacts on water when we make land use decisions.

We've considered all of your ideas and put together a proposal for a new *Water Sustainability Act*, to be introduced in the spring of 2014. Now I'm inviting you to offer your feedback one last time, so we can make sure our new water legislation really does serve your needs, and the needs of future generations of British Columbians.

Your feedback will not only help us refine our legislative proposals, but will also help guide us as we implement the new act in the months and years ahead. Have a look through our proposal for a new *Water Sustainability Act,* and tell us what's most important for you.

Thank you for taking the time to help us modernize the rules around our most precious natural resource.

Mary Polak

Minister of Environment

A *Water Sustainability Act* for British Columbia[1]

The Government of British Columbia continues to modernize the *Water Act*. Given the pressures of a growing population, a changing climate and expanding development, steps must be taken to ensure that B.C.'s supply of fresh, clean water is sustainable – not just to meet our needs today, but for generations to come.

The *Water Sustainability Act* (WSA) would respond to these realities, replacing the *Water Act* as B.C.'s primary water law. In addition to supporting economic, social and environmental goals, the new legislation would promote better water management, secure the rights of users and protect B.C.'s water resources.

This proposal describes the *Water Act* policies that would carry through to the *Water Sustainability Act,* the policies that would be modified and the new key policies that would be included. It focuses on key concepts and is not intended to support interpretation of the new legislation, once it is enacted.

The proposal has five parts:

Part 1: The Current Legislative Framework describes the *Water Act*, its history and other provincial water-related jurisdiction and legislation.

Part 2: Legislative Proposal for a *Water Sustainability Act* introduces the new legislation and provides detail about its proposed content.

Part 3: Water Fees and Rentals summarizes the current framework for water fees and rentals in B.C. and outlines the potential changes they may undergo.

Part 4: Implications: Costs and Benefits begins to explore the associated benefits and costs of implementing the *Water Sustainability Act,* , including the costs of inaction.

Part 5: Overview of Engagement Response summarizes previous comments and submissions from the public, First Nations and stakeholders. It also explains how some policy suggestions were or were not addressed.

Throughout the document, key themes expressed during the public engagement process are also highlighted as "What we heard." A complete list of submissions received to date is available on the *Water Sustainability Act* website at engage.gov.bc.ca/watersustainabilityact

1 Note that all references in this legislative proposal to the *Water Sustainability Act* are in the context of the *Water Sustainability Act* as proposed legislation

Feedback on this Legislative Proposal (see Share Your Views below) will help to further refine the *Water Sustainability Act*. The provincial government has a particular interest in hearing about any possible unintended consequences that have not yet been considered. Comments will also support the development of regulations and a multi-year plan for implementation.

Process to Date

The *Water Act* Modernization process began with the launch of the Living Water Smart Blog in December 2009. The Ministry of Environment subsequently spent much of 2010 engaging with the public, First Nations and stakeholders, releasing a Discussion Paper in February and delivering 12 regional workshops during March and April. Government summarized the input received in this first stage in its Report on Engagement, released in September 2010.

In response to the extensive interest, government launched a second stage of engagement in December 2010 with the release of its Policy Proposal on British Columbia's new *Water Sustainability Act*. This document summarized – at a high level – the policy directions for the proposed new legislation.

Since 2011, the provincial government has been working to refine the proposal and assess its implications, including the potential costs to government and users. This process has taken longer than expected. The original goal was to introduce the new *Water Sustainability Act* in 2012; however, the complexity of developing legislation with widespread implications for British Columbians has resulted in some delays.

Figure 1 summarizes the overall engagement and policy development process for *Water Act* Modernization. Once the third and current stage of engagement is concluded, the WSA will be submitted to the provincial government and the formal legislative process will commence (see Figure 2). The section below, entitled Next Steps, outlines this process in more detail.

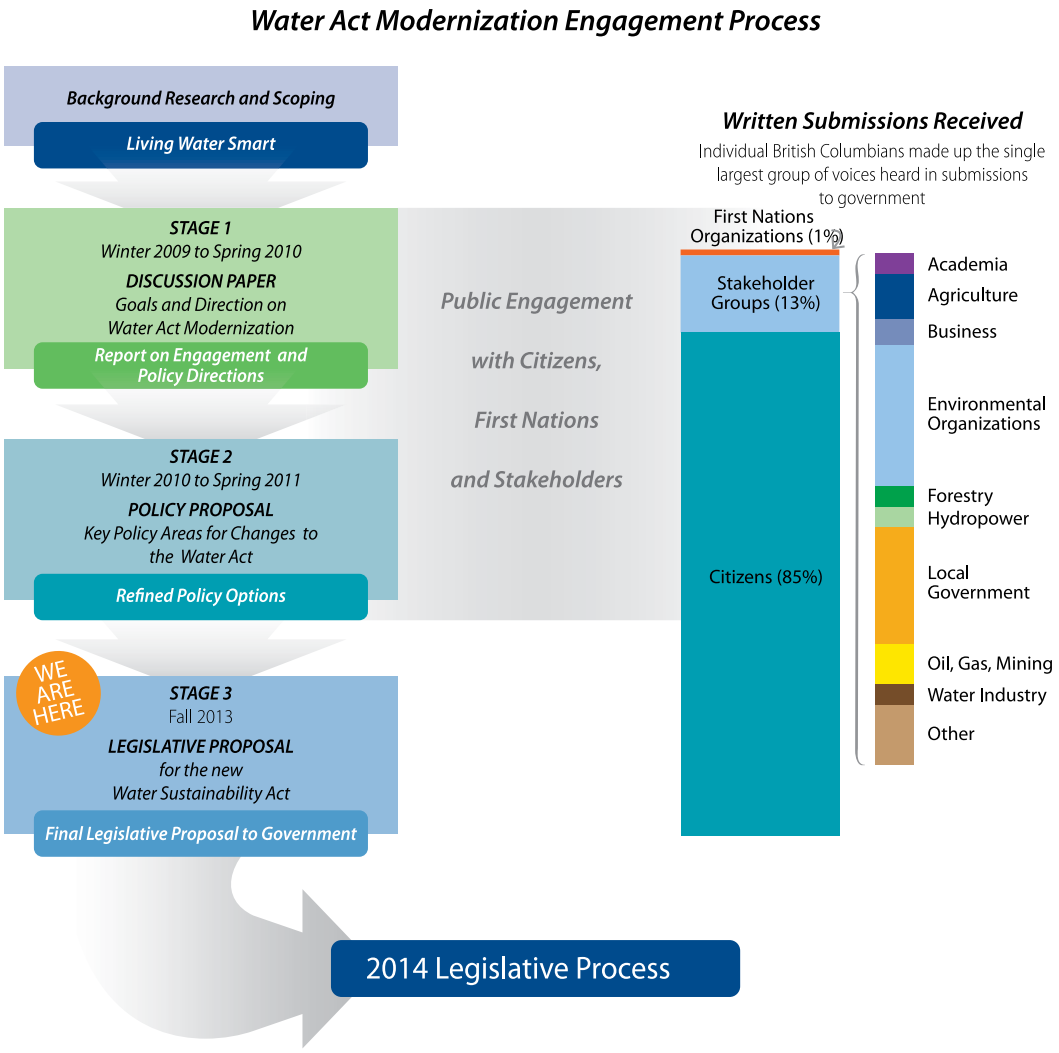


Figure 1. The *Water Act* Modernization Engagement and Policy Development Process

To date, the provincial government has received suggestions and ideas in over 2,250 written submissions from individual citizens, First Nations organizations and stakeholder groups, and over 50,000 visits to the Living Water Smart Blog and website. Copies of all submissions and background information are available on the *Water Sustainability Act* website.

For additional background on *Water Act* Modernization, please refer to the following documents, also available at engage.gov.bc.ca/watersustainabilityact:

- *Water Act*;
- *Water Act Modernization Discussion Paper* February 2010;
- *Technical Background Report* March 2010;
- *Report on Engagement* September 2010;
- *Policy Proposal on British Columbia's new Water Sustainability Act* December 2010;
- *Living Water Smart* website and the *Living Water Smart* Blog.

Share Your Views

Government welcomes your feedback on the proposed *Water Sustainability Act* until **November 15, 2013**. Comments can be submitted:

- on the Blog engage.gov.bc.ca/watersustainabilityact
- by email livingwatersmart.gov.bc.ca
- by fax to (250) 356-1202
- by post to *Water Sustainability Act*
  Ministry of Environment Water Protection and Sustainability Branch
  PO Box 9362, Stn Prov Govt
  Victoria, B.C. V8W 9M2

Next Steps

Comments received by November 15, 2013 will be reviewed and considered as the government prepares a final draft of the new WSA. All submissions will be posted online at engage.gov.bc.ca/watersustainabilityact.

Once the draft *Water Sustainability Act* is complete, it will be submitted to the Legislative Assembly (also referred to as the 'House') as a Bill for debate and final approval. Figure 2 and the document, How a Bill Becomes Law, outline this process in more detail.

1. First Reading	Members vote on whether to accept the Bill for future debate.
2. Second Reading	Members debate the Bill's general principles and goals and then vote on whether the Bill proceeds to a third reading.
3. Committee of Whole House	All Members examine the Bill and may ask questions the about its meaning. This is the last opportunity to propose any amendments. No further changes can be made after this point unless the House votes to send the Bill back to the Committee for a second review.
4. Third Reading	Members may choose to debate the Bill before taking a final vote. If the Bill passes, it becomes an Act.
5. Royal Assent	Lieutenant Governor in Council (LGIC) signs the Bill and gives it Royal Assent.
6. Proclamation	Many Acts come into force immediately upon Royal Assent; however special provisions can establish a different date for the Act to come into force by regulation.

Figure 2. How a Bill Becomes Law

As the Bill moves through the process outlined in Figure 2, it will be available on the Legislative Assembly of British Columbia website.

Executive Summary

Introduction

Water is British Columbia's most important natural resource. Given the pressures of a growing population, a changing climate and expanding development, steps must be taken to ensure that B.C.'s supply of fresh, clean water is sustainable – not just to meet our needs today, but for generations to come. With the development of the *Water Sustainability Act* (WSA), the Government of British Columbia (B.C.) continues its modernization of the *Water Act*.

The *Water Act* provides for the allocation and management of surface water through licences, short-term use approvals and approvals for changes in and about a stream. It also provides for the creation of water reserves, before development of Water Management Plans and the establishment of Water Users' Communities.

It is proposed that the WSA would replace and modernize the existing *Water Act*. The new legislation would build on the *Water Act* provisions by adding regulation of groundwater, requiring the consideration of environmental flow needs, enhancing and modifying the water management framework and providing new tools to respond to current and emerging water management issues. It is expected that modernizing the *Water Act* will help meet three key outcomes:

1. Water management is sustainable, efficient and adaptive
2. Rights for water users, communities and industries are secure and transparent
3. B.C.'s water and aquatic ecosystems are healthy and protected.

A number of potential benefits could be realized, including:

- More flexibility and efficiency to meet the needs of water users;
- Increased certainty, especially in areas of intensive water use and where there are chronic water scarcity problems;
- Clarity around legal access to groundwater for people and businesses who rely on it; and
- Wider participation in decisions and water governance approaches.

Note that all references in this legislative proposal to the *Water Sustainability Act* are in the context of the *Water Sustainability Act* as proposed legislation.

The WSA would work with other legislation such as the *Water Protection Act*, the *Fish Protection Act* and the *Drinking Water Protection Act,* as well as a broad range of statutes that govern natural resource sectors, to protect and manage B.C.'s water resources and the integrate decisions across the land base.

The Legislative Proposal

This legislative proposal is presented in five parts:

Part 1: The Current Legislative Framework describes the *Water Act*, its history and other provincial water-related jurisdiction and legislation.

Part 2: Legislative Proposal for a *Water Sustainability Act* introduces the new legislation and provides detail about its proposed content.

Part 3: Water Fees and Rentals summarizes the current framework for water fees and rentals in B.C. and outlines the potential changes they may undergo.

Part 4: Implications: Costs and Benefits begins to explore the associated benefits and costs of implementing the WSA, including the costs of inaction.

Part 5: Overview of Engagement Response summarizes previous comments and submissions from the public, First Nations and stakeholders. It also explains how some policy suggestions were or were not addressed.

Key Proposals for the *Water Sustainability Act*

The *Water Sustainability Act* would make improvements in seven key areas, to:

- Protect stream health and aquatic environments;
- Consider water in land use decisions;
- Regulate and protect groundwater;
- Regulate water use during times of scarcity;
- Improve security, water use efficiency and conservation;
- Measure and report large-scale water use; and
- Provide for a range of governance approaches.

Table 1 provides a snapshot of the proposed policies to be included in the *Water Sustainability Act*.

Table 1. Snapshot of Policies Supporting the *Water Sustainability Act*

1. General	
Water Use Purposes	The water use purposes in the current *Water Act* would be carried forward to the *Water Sustainablilty Act*, with some modifications, including the addition of a new oil and gas purpose.
Regulation of Surface Water	Parts 1 and 2 of the *Water Act* would be modernized and carried forward to the *Water Sustainablilty Act*, integrating the requirements for regulation of groundwater.
2. Protect Stream Health and Aquatic Environments	
Environmental Flow Needs	Decision-makers would be required to consider environmental flow needs in most new water licence or short-term use approval applications but would have some discretion in smaller, lower-risk applications. The process for determining environmental flow needs would vary across B.C., to accommodate its diversity.
Prohibiting Dumping Debris	Provisions for prohibiting the dumping of debris would be expanded and integrated (including not-in-force provisions from the *Fish Protection Act*) for surface water and groundwater.
3. Consider Water in Land Use Decisions	
Water Objectives	The development of Water Objectives would promote more consistent consideration of impacts to water quality, water quantity and aquatic ecosystem health in natural resource sector decision-making. Appropriate terms and conditions could also be specified to help mitigate impacts, where practicable.
Water Sustainability Plans	Watershed level planning would continue to protect watersheds and address conflicts between users, risks to water supply and quality and risks to aquatic ecosystem health. New approaches would help make planning less onerous.
4. Regulate and Protect Groundwater Use	
Regulate and Protect Groundwater Extraction and Use	New measures would be implemented to regulate and protect groundwater use. Groundwater users would be integrated into the current approaches for surface water. Some exemptions would apply.

Table 1. Snapshot of Policies Supporting the *Water Sustainability Act* CONTINUED

5. Regulate During Scarcity	
Preservation of Critical Environmental Flows During Times of Drought and Scarcity	In addition to carrying forward measures from the *Fish Protection Act* allowing the Minister to make temporary orders to protect fish populations, regulation of all water users to protect aquatic ecosystems during times of scarcity would be allowed. This means all water users could be required to reduce their consumption temporarily.
Allowances for Essential Household Use	During water shortages when users are required to curtail water use, decision-makers would allow some water for essential household use regardless of licence priority.
6. Improve Security, Water Use Efficiency and Conservation	
Beneficial Use	The requirement to use water beneficially would be extended to all users (water licensees, short-term use approval holders and unrecorded users). The definition of beneficial use would also be expanded to include requirements for water to be used efficiently.
Agricultural Water Reserves	Under an approved Water Sustainability Plan recommendation, Agricultural Water Reserves would be enabled to secure water for agricultural use on agricultural lands.
Review of Licence Terms and Conditions	After 30 years, decision-makers would have the discretion to review licences (excluding 40-year power purpose licences) and update terms and conditions to reflect the current state of knowledge of the water resource. Licence reviews could also be undertaken during an amendment, apportionment or transfer of appurtenancy.
Power Purpose – 40-Year Term	The current 40-year term for power purpose water licences would be maintained; however a project development period would be allowed prior to the start of operations (and the effective date of the licence) to provide consistency and harmonization with requirements of other statutes and agencies.
Area-based Regulations	Area-based regulations could be established to remove or reduce the exemptions and thresholds established in the *Water Sustainablilty Act*. Changes could apply to any users in any part of B.C.
7. Measure and Report	
Measuring and Reporting	Larger water users would be required to measure and report on water use. Regulations would provide detail on who would report and what the requirements would be.

Table 1. Snapshot of Policies Supporting the *Water Sustainability Act* CONTINUED

8. Enable a Range of Governance Approaches	
Governance	The potential for alternative governance approaches would be enabled. The opportunity to create advisory groups would be extended to issues associated with surface water as well as groundwater.
9. Implementing the *Water Sustainability Act*	
New Enforcement Tools	A broader range of compliance and enforcement tools would be enabled as alternatives to the current approaches.
Regulations	Both specific and general regulation-making powers would be included in the *Water Sustainablilty Act*.

Water Pricing in B.C.

Under the *Water Act,* most licensees pay an application fee and an annual water rental, while holders of approvals for short-term use (their water use is for a period of up to 24 months) pay a one-time application fee with a water use purpose charge. The current pricing structure does not fully account for the provincial government's administrative and management costs.

Implementation of the *Water Sustainablilty Act* would entail new costs for both government and users. As a result, government is contemplating changes to the water fee and rental structure and rates (with the exception of water power). While higher prices would help improve services, support sustainable water management, improve program cost recovery and enable new programs and initiatives, any new fee model must be easy to understand and implement. It must also take into account the consequences for water users and the overall benefits.

Implementation of the *Water Sustainability Act*

It is proposed that the *Water Sustainablilty Act* would be phased in over time, starting with a focus on filling the gaps in the *Water Act* and meeting government's Living Water Smart plan commitments. The expected benefits of *Water Sustainablilty Act* implementation would include improved ecological protection, reduced uncertainty and increased security for users. New costs would be associated with new requirements such as licensing groundwater users and measuring and report-

ing. On the other hand, the cost of inaction could be significantly greater. It could include lost opportunities to prepare for future events (e.g., associated with climate change, drought) or increased water risk for businesses, affecting the economy.

Overview of Previous Engagement Comments

Thousands of individuals, First Nations and stakeholders provided comments on *Water Act* modernization during 2010 and 2011. Major themes included the following:

Develop clear standards, processes, responsibilities and expectations for managing B.C.'s water. There was strong support for ensuring that the WSA is clear in its requirements and provides certainty and security for users. There was mixed support for continued use of First in Time, First in Right (FITFIR).

Regulate groundwater extraction and use. This was strongly supported. Many submissions emphasized the need to recognize the connection between surface and groundwater.

Improve current water governance arrangements. Support for this idea was strong, but no clear preference emerged for any particular approach. Most respondents supported collaboration and community participation. Many submissions acknowledged that approaches would need to reflect local conditions, interests, water management issues and capacity.

Proactively protect drinking water, food production, clean energy and ecological health. Respondents supported a water allocation system that prioritizes drinking water protection, ecosystem health, food production and clean energy production. There was strong support for environmental flow and stream health standards, promoting efficiencies and recognizing non-consumptive water use in industry.

Recognize the land-water connection. Respondents highlighted the importance of the land-water interrelationship and how land use practices can affect water quality, quantity and timing of flow. There was substantial support to improve protection of watershed health in land use (including agriculture and urban development) and resource development decisions and practices.

Balance ecological protection with economic priorities. Many respondents called for a balance between ecological protection and economic development. Some respondents called for stronger water protection. Others said that clarity and certainty should be supported by adaptive management, standards, effective and enforceable rules, integrated with legislation and fee equity.

First Nations interests must be respected. Water is of utmost importance to First Nations and holds high cultural and economic value. In their submissions, First Nations told us that the *Water Act* Modernization process does not meet the standards set in the New Relationship, nor constitute meaningful consultation. These submissions maintained that further, continued dialogue is required.

Government Response to Policy Suggestions. A number of submissions suggested or questioned policies for inclusion in the WSA. Many of these were not included or have a lower profile than was suggested. A brief summary and explanation of how they were considered in developing this proposal for the new WSA is provided at the end of the document.

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PART 1

The Current Legislative Framework

1.1 Jurisdiction and Legislation

Water plays a role in almost every facet of our lives, and the complex challenge of governing water use affects most sectors of society. In B.C., the legal framework for managing water includes the provincial *Water Act* along with many other provincial, federal and local government statutes (see Figure 3).

Because of this, not all decisions that affect water will be made under the proposed *Water Sustainability Act* (WSA). Even with the WSA, federal, provincial and local governments would continue to share responsibilities around water. However, the WSA moves B.C. towards better integration of water-related issues into decision-making processes.

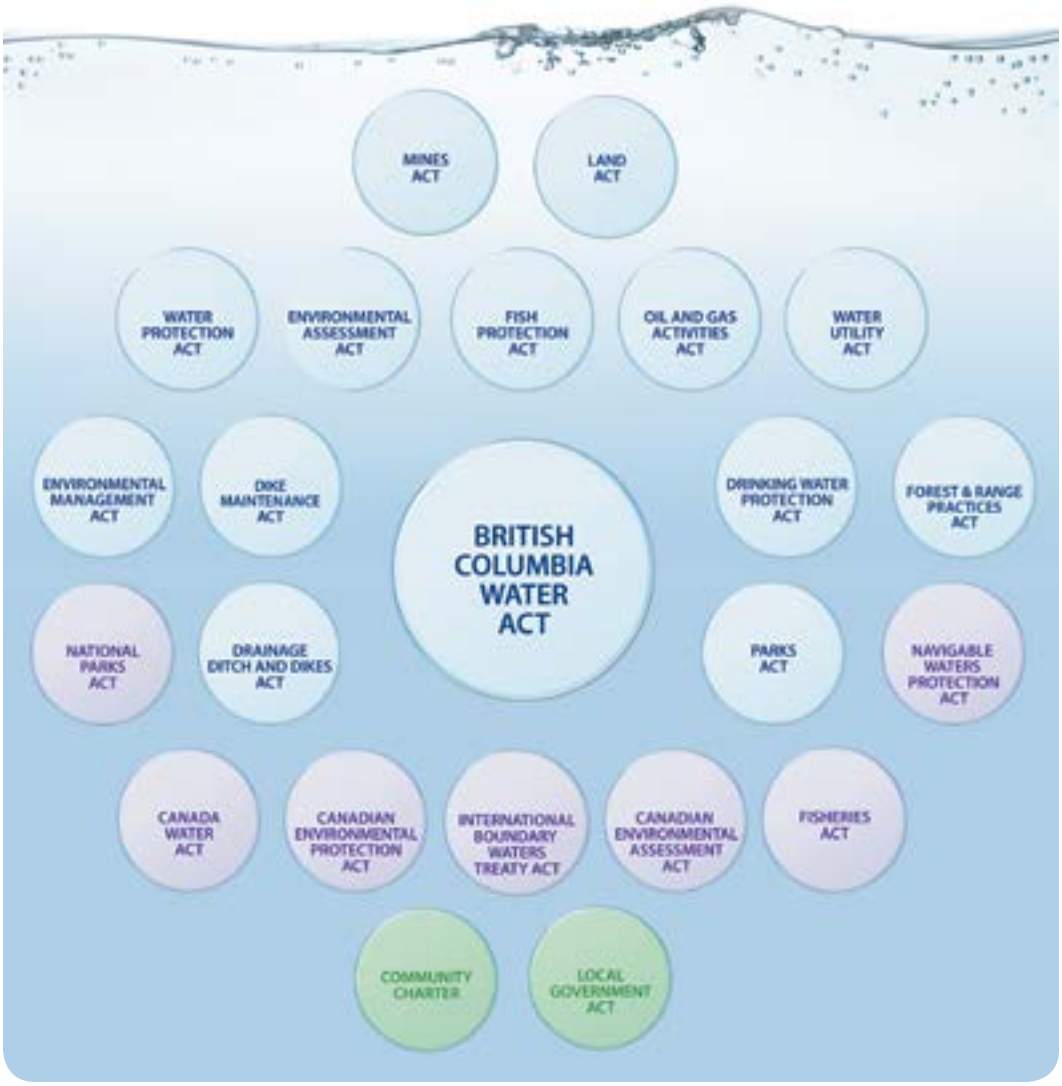


Figure 3 *Current Legislative Framework for Water Management*

Appendix A summarizes the legislation (provincial and federal) now used to manage water in B.C. Given the breadth and diversity of this legislation, it is not intended that the WSA consolidate all water-related provisions. Rather, the WSA would allow for new tools that reflect this legislative diversity and support the government's integrated approach to decision-making.

For example, Water Objectives and Water Sustainability Plans would be applied

consistently across all natural resource sectors. Ground and surface water would have the same management system. The current proposal would see the environmental flow needs policy considered and applied more consistently across B.C., taking into account regional geographic and hydrologic variability. New compliance and enforcement tools would also enable better integration across the natural resource sectors.

1.2 The *Water Act* and its History

Currently, the *Water Act* provides for the allocation and management of surface water through the issuance of water licences, short-term use approvals and approvals to make changes in and about a stream. It authorizes the creation of reserves, development of Water Management Plans and establishment of Water Users' Communities. Groundwater extraction and use are currently not regulated; however a drilling authorization could be required under a Water Management Plan. The current Act also provides protective measures for wells and groundwater, along with provision for offences and penalties.

Water law in B.C. has a long history. Following early water legislation, the *Water Act* was enacted in 1909. Although water rights were recorded prior to 1909, the *Water Act* provided an approach for users to acquire water rights and for the provincial government to administer them. Before its enactment, disputes and litigation over water rights were common.

In 1912, the office of the Comptroller of Water Rights (CWR) was established. In 1914, new provisions specified that anyone intending to divert and use water from a stream, including persons claiming to hold riparian rights for the use and flow of water, was required to obtain a water licence.

The next major changes came in 1939 when a new set of regulations streamlined the Act. Provisions for regulating groundwater extraction were introduced in 1960, but never brought into force.

In 1979, reflecting the trend towards decentralizing provincial government power, the Regional Water Manager (RWM) role was created with the power to issue and administer water licences, similar to those held by the CWR. At this time, the Environmental Appeal Board was also established (under the *Environmental Management Act*) to hear appeals from *Water Act* decisions. Amendments in 1992 improved provisions regarding changes in and about a stream.

Further changes were made over the years, including in 2004, to reflect growing

concern for the protection of drinking water. Those changes included measures to protect groundwater quality and undertake water management planning.

Currently, the regulations under the *Water Act* include:

- The Water Regulation, which covers a number of related issues, including the procedures for the acquisition of a water right, the calculation and payment of fees and rentals and the activities that may be conducted within a stream or a stream channel;
- The Ground Water Protection Regulation, which regulates activities such as well drilling, pump installation, groundwater protection and alteration and closure of wells;
- The British Columbia Dam Safety Regulation, which addresses, in part, the construction, maintenance and operation of dams.

1.3 Other Provincial Water Legislation

There are other statutes that also directly govern water in B.C. today. The *Water Protection Act,* enacted in 1995, prohibits large inter-basin transfers and the bulk removal of water from B.C., as well as confirming the ownership of groundwater in the Crown. Box 1 below provides more information.

The *Fish Protection Act,* enacted in 1997, provides additional mechanisms to strengthen the protection of fish and fish habitat in the consideration of water allocation decisions. These include Section 6, which enables the Designation of Sensitive Streams and Licensing Regulation, which provides special protection measures for designated streams. Section 9**,** brought into force in 2009, allows the Minister, for the purposes of protecting a fish population during drought, to make temporary orders regulating the diversion (including rate and timing), storage (including timing of) and use of water from the stream by licence and approval holders, regardless of priority date, and with due consideration of the needs of agricultural users.

The *Drinking Water Protection Act,* enacted in 2001, added provisions to enhance the protection of B.C.'s drinking water supplies.

It is proposed that with the exception of some minor housekeeping amendments, the *Water Protection Act* and the *Drinking Water Protection Act* would not change with the introduction of the WSA. Some provisions of the *Fish Protection Act* may be brought into the WSA.

B.C.'s *Environmental Management Act* also plays a role in protecting water. It regulates industrial and municipal waste discharge, pollution, hazardous waste and contaminated site remediation. It also enables preparation of environmental plans for flood control, drainage, soil conservation, water resource management, waste management and air quality management.

BOX ONE

The Water Protection Act

The *Water Protection Act* protects B.C.'s water resources by:

- Limiting bulk water removals to those previously existing, within clearly defined limits;
- Preventing unregistered bulk removal of B.C.'s water to locations outside the Province; and
- Prohibiting large-scale diversion between major watersheds of the Province.

In particular, the *Water Protection Act* defines B.C.'s nine major watersheds and prohibits the construction and operation of large-scale projects capable of diverting or transferring more than 10m^3/second of water from one major watershed to another. A comprehensive registration system was established by the Comptroller of Water Rights as required under the *Water Protection Act* to define and limit the quantity of bulk water authorized to be removed from B.C.

Surface water licensees and groundwater users, who had removed water in bulk prior to June 1, 1995, were permitted to continue, provided they registered with the Province. Registered surface water licensees were permitted to remove water to the extent of their existing licences. In the case of groundwater, registered users were permitted to remove water up to the maximum volume they removed in any 12 consecutive months over the three years preceding June 1, 1995.

1.4 First Nations and Water

First Nations in B.C. have expressed strong cultural, ecological and economic interests in water resources. The Province and First Nations share common interests in ensuring that B.C.'s water resources are managed sustainably and that instream flows to maintain ecosystem health are sustained.

The Province received significant input from First Nations during the *Water Act* Modernization engagement process. Members of First Nations communities and organizations participated in all 12 *Water Act* Modernization workshops, including three workshops organized specifically for First Nations. The Province also received 23 written submissions from individual bands, associations and other organizations representing First Nations in B.C.

Potential opportunities to address First Nations interests through the *Water Sustainablity Act* include: establishing Environmental Flow Needs for use in decision-making to protect fish and habitat and maintain stream functions and other ecosystem services; continued mechanisms to reserve water for First Nations; consideration of traditional ecological knowledge; and greater involvement and participation in water management and watershed planning processes. Facilitating knowledge sharing will help governments and communities learn about, respect and uphold what is important to First Nations.

The *Water Sustainablity Act* would focus on improving management and use of B.C.'s water resources to meet current and future needs. It would not address Aboriginal rights and title to water or infringe on existing rights. The existing Aboriginal and treaty rights of Aboriginal peoples are recognized and affirmed by Canada's *Constitution Act,* 1982. The provincial government will continue to respect the Treaty process; the proposed provisions of the *Water Sustainablity Act* would not encumber current or future Treaty negotiations.

The provincial government acknowledges First Nations interests and will continue to meaningfully engage with First Nations through development and implementation of the proposed *Water Sustainablity Act* .

Part 2

Legislative Proposal for a *Water Sustainability Act*[2]

2.1 Context for *Water Act* Modernization

Modernizing the *Water Act* will help to fill a number of key gaps including: the inability to regulate groundwater; the variability in the consideration of environmental flows in decision-making; the need to conserve water and use it efficiently; and the ability to enable a range of governance approaches. New tools are also needed to help water managers respond to existing and emerging challenges such as climate change, urban development and resource development (for additional information on climate change, see Box 2 below). The WSA will also advance key commitments in *Living Water Smart: British Columbia's Water Plan*.

2 Note that all references in this legislative proposal to the Water Sustainability Act are in the context of the *Water Sustainability Act* as proposed legislation

It is proposed that the *Water Sustainability Act* (WSA) would replace the *Water Act* as the primary statute for water resource management in B.C., helping to ensure that:

- Water management is sustainable, efficient and adaptive;
- Rights for water users, communities and industries are secure and transparent; and
- B.C.'s water and aquatic ecosystems are healthy and protected.

Expected benefits of the *Water Sustainablity Act* could include:

- Increased protection of water resources and aquatic ecosystems;
- More flexibility and efficiency to meet the needs of water users;
- Increased certainty, especially in areas of intensive water use and where there are chronic water scarcity problems;
- Clarity around legal access to groundwater for people and businesses who rely on it; and
- Wider participation in decisions and water governance approaches.

The policy discussion on *Water Act* Modernization began with four goals in February 2010, shifting to seven policy directions in December 2010 (see Figure 4). The outcomes and anticipated benefits identified above continue to support and guide the direction and development of *Water Sustainablity Act* policy.

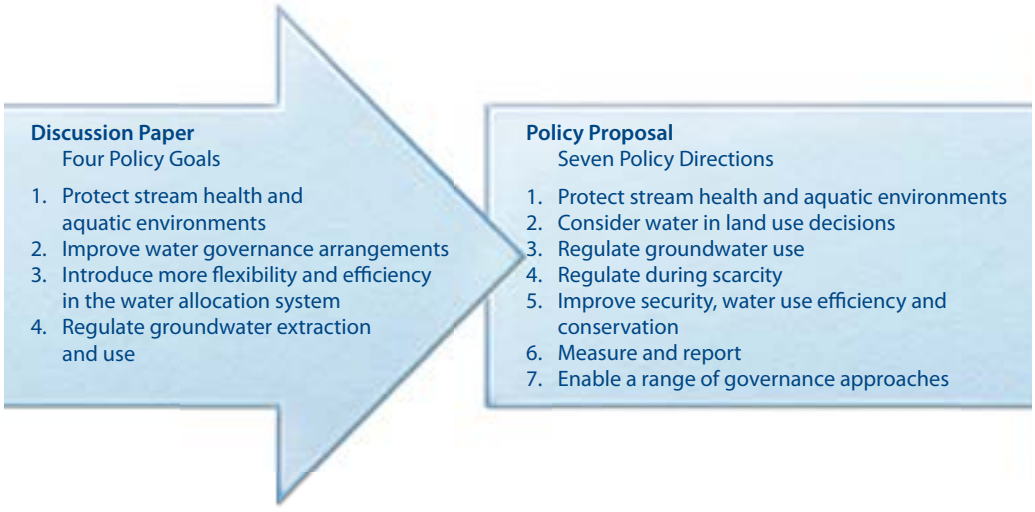


Figure 4. Shift from the Four Key Goals to the Seven Policy Directions

It is expected that all current *Water Act* provisions would be reviewed and modified, as needed, to modernize the legislative language and incorporate new policies into the *Water Sustainabilty Act* . The development of the *Water Sustainablity Act* may also be affected by other legislation. While the sections below outline the policies that are currently recommended and expected to inform *Water Sustainablity Act* development, comments received in respect of this proposal will also be taken into account. The *Water Sustainablity Act* would also propose consequential amendments to other statutes to provide consistency with the *Water Sustainablity Act* .

BOX TWO

The Water Sustainability Act and Climate Change

Preparing for a changing climate is a significant and motivating theme for the *Water Sustainability Act*. *Living Water Smart* commits that *...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.*

B.C.'s mountainous terrain and varied landscapes mean that climate change will impact water supplies and demands differently across the province. Compared to average historical conditions (1961-1990), by the middle of the century (2041-2070), B.C. is expected to become warmer and wetter, with higher annual average temperatures and precipitation. While B.C. will become wetter overall, precipitation will not occur evenly throughout the year. Fall, winter and spring are projected to be warmer and wetter with more rain and less snow, particularly at lower elevations. Summers will be hotter with reduced precipitation in most areas.

Watersheds will respond to these changes in different ways depending on their characteristics. For example, in coastal watersheds (e.g., Campbell River) that are both snow- and rain-fed, declining snowpack is expected to cause the flow regime to shift toward being predominantly rain-fed. This will result in higher stream flow during the fall and winter and lower stream flow during the spring and summer. Interior snow-fed watersheds (e.g., Peace River) will see more rain during fall, winter and spring, resulting in increased fall and winter discharge. Warmer spring temperatures will cause the freshet to begin earlier. Combined with warmer summers, this will result in reduced stream flow in summer and early fall.

Climate change is also expected to cause weather patterns to become more variable. Hydrological extremes such as droughts and heavy rainfall events may become more intense and/or more frequent in the future.

New tools will therefore be needed to manage for both long-term shifts in hydrological regimes and increases in year-to-year variability in the water cycle.

Being prepared for climate change means being able to adapt to changes in the water supply and demand over time. The *Water Sustainability Act* proposes a number of tools to help improve the monitoring and flexibility of water management and respond to the need to adapt to climate change. For example:

- Enabling an adaptive management framework so that new information can be integrated into water management;
- Proposing planning and assessment tools (e.g., Water Sustainability Plans) that would incorporate new information from a variety of sources such as monitoring and research, and identify strategies for responding to changing conditions;
- Increasing flexibility in water allocation to be able to adapt licence and approval decisions to changing conditions (e.g., licence reviews, Environmental Flow Needs considerations);
- Requiring new measuring and reporting conditions for a better understanding of water use and how it is changing; and
- Improving water governance to enable better coordination within watershed boundaries, across all levels of government and between those with interests in the watershed.

There is a range of climate change work ongoing in B.C. Those who manage water will need to connect to this work in order to address the spectrum of climate change related issues. For more information:

- B.C. Ministry of Environment, Climate Action Secretariat
- B.C. Regional Adaptation Collaborative
- Retooling for Climate Change
- Pacific Climate Impacts Consortium
- Living Water Smart

2.2 The Legislative Proposal

The sections that follow provide information about the proposed policies supporting the development of the *Water Sustainablity Act* . The policies are organized by seven themes and each subsection generally provides:

- An overview of the issue;
- An indication of whether the proposed policy is new or an existing *Water Act* provision that will be modified; and
- A summary of the proposed intent of the *Water Sustainablity Act* .

The order of the sections below does not reflect either the priority of the proposals nor their eventual order in the *Water Sustainablity Act*.

Throughout the document, key themes expressed during the public engagement process are highlighted in short sections entitled 'What we heard.' Part 5 of this document provides a more detailed synthesis of comments. For a complete list of submissions received to date, visit the *Water Sustainablity Act* website.

Information boxes are also inserted throughout the document to provide readers with additional detail and background about key aspects of current water management and regulation in B.C.

For the reader's reference, some sections of the text below identify the relevant or related sections of the current *Water Act*. The *Water Act* along with other provincial statutes and regulations can be found on the B.C. Laws website at www.BCLaws.ca.

A number of abbreviations used in the document are listed in Box 3. For a glossary defining technical terms, see Appendix B.

BOX THREE

Commonly Used Abbreviations

B.C.	British Columbia
CEF	Critical Environmental Flow
CWR	Comptroller of Water Rights
EFN	Environmental Flow Needs
FITFIR	First in Time, First in Right
LGIC	Lieutenant Governor in Council
RWM	Regional Water Manager
WSA	*Water Sustainability Act*
WSP	Water Sustainability Plan

2.3 Highlights of the Proposed *Water Sustainability Act*

2.3.1 General

Water Use Purposes

Water is allocated – either through a water licence or short-term use approval – to a user for a specific water use purpose. The water use purpose (e.g., to irrigate crops) informs the definition of a reasonable amount of water to be allocated, as well as the types of works[3] required. Application fees and annual water rental rates also vary by water use purpose. Under the current *Water Act*, a water licence can cover up to three different purposes.

Proposal

It is proposed that the *Water Sustainablity Act* would carry forward the current water use purposes; however the purpose currently called the 'mineral trading purpose' would be amended as the 'mineralized water purpose' and the definition would be updated. The limit of three water use purposes per licence would also be removed.

A specific purpose for water use related to oil and gas activities is also proposed, rather than maintaining its inclusion within the broader industrial purpose. An 'oil and gas purpose' would be defined specifically in relation to activities carried out for the development and production of oil and gas wells.

3 Key definitions can be found in Appendix B.

Box 4 below identifies the water use purposes currently specified in the *Water Act*.

BOX FOUR

Water Use Purposes

For the purposes of allocating or licensing water under the *Water Act,* there are 11 water use purposes currently defined:

- **Conservation** – the use and storage of water or the construction of works in and about streams for the purpose of conserving fish or wildlife.
- **Domestic** – the use of water for household requirements, sanitation and fire prevention, the watering of domestic animals and poultry and the irrigation of a garden not exceeding 1,000 m^2 adjoining and occupied with a dwelling house.
- **Industrial** – any use of water in B.C. designated by regulation as a use for industrial purpose, but does not include (a) the use of water for any of the other purposes defined in this section, or (b) the carriage or supply by a person of water to or for use by any other person.
- **Irrigation** – the beneficial use of water on cultivated land and hay meadows to nourish crops.
- **Land improvement** – the diversion or impounding of water to protect property, to facilitate the development of a park or the reclamation, drainage or other improvement of land or to carry out a project of a similar nature.
- **Mineral trading** – means bottling, distributing, using and dealing in water so impregnated with foreign ingredient as to give it medicinal properties, or water of a temperature that gives it a commercial value.
- **Mining** – (a) the use of water, including the use of water under head, for recovering mineral from the ground or from ore, or (b) the use of water under head to move earth, sand, gravel or rock.
- **Power** – means the use of water in the production of electricity or other power.
- **River improvement** – means clearing and improving the bed, channel and banks of a stream to facilitate the driving and booming of timber.
- **Storage** – the collection, impounding and conservation of water.
- **Waterworks** – the carriage or supply of water by a municipality, improvement district, development district or person for the use of the residents of an area in B.C.

Regulation of Surface Water

All surface water diversions are currently regulated under the *Water Act*. Parts 1 (Definitions and application) and 2 (Licensing, diversion and use of water and related matters) of the Act govern, for example, the process of obtaining a water licence, short-term use approval and approval to make changes in and about a stream. In addition to the process of obtaining an authorization, these Parts also address some of the administration elements for authorizations. For example:

- Who may acquire licences, procedure to acquire licences, issue of final licences, amendment and substitution of licence or approval, suspension and cancellation of rights and licences, abandonment of rights under a licence;
- Rights and responsibilities under licence or approval;
- Purpose, precedence and appurtenancy of licences as well as precedence of licences on the same stream;
- Transfer of licence, approval or permit, transfer of appurtenancy, apportionment of rights under licence;
- Record keeping and beneficial use declaration;
- Short-term use of water, changes in and about a stream, Permits over Crown Land;
- Right to use unrecorded water;
- Powers of comptroller or regional water manager respecting applications;
- Who can object to applications;
- Entry on land, right to expropriate land, licensee's rights when owner refuses compensation;
- Notice requirements;
- Appointment of water bailiffs;
- Water reservations;
- Treaty First Nations water reservations and Nisga'a water reservation;
- Issue of new licence.

Proposal

It is proposed that the provisions in the current Parts 1 and 2 of the *Water Act* be incorporated into the *Water Sustainablity Act*. These sections would be reviewed and modified to modernize the language and incorporate any new or modified poli-

cies (e.g., regulation of groundwater use, requirements to consider Environmental Flow Needs and Water Objectives). While most of the requirements in these sections would continue as under the *Water Act*, some changes can be expected.

Box 5 describes the current system of rights allocation for surface water. It is proposed that groundwater users requiring a water licence or short-term use approval be integrated into this system.

BOX FIVE

First in Time, First in Right System of Rights Allocation

Water rights in B.C. may be exercised under a system of priorities according to their respective priority dates. This is commonly referred to as *first in time first in right* or FITFIR. During times of water scarcity, licences with the earlier priority dates are entitled to take their full allocation of water over the junior licences. For example, a water licence with a 1930 priority date would have precedence over a licence with a 1960 priority date, regardless of the purpose for which the water is used.

There are benefits to retaining the FITFIR system:

- It is easy to understand and administer;
- Newer users come into the system knowing they have the lowest priority and that during periods of scarcity may be cutoff first or required to rely on storage; and
- The more senior licensees have the most secure rights.

Under Section 15 of the *Water Act*, in rare cases, where two or more licences on the same stream have the same priority date, a ranking of water uses based on purpose is used to determine who has priority of water use.

The *Water Sustainability Act* would provide decision-makers with the ability to make allowances for essential household use (including domestic animals and poultry), despite the priority of other licences. This would address one of the fundamental complaints about FITFIR which is that it does not always recognize that society generally views human needs as more important than other uses.

2.3.2 Protect Stream Health and Aquatic Environments

Environmental Flow Needs

Stream health is the combined measure of a stream's ecological integrity and function, its ability to provide environmental services and its resilience to disturbance. Environmental Flow Needs (EFNs) refers to the quantity and timing of flows in a stream that are required to sustain freshwater ecosystems, including fish and other aquatic life (i.e., maintain stream health).

Currently, there is no express legal provision requiring decision-makers under the *Water Act* to formally consider EFNs in all cases when making allocation decisions (e.g., when adjudicating water licence or short-term use approval applications). Nevertheless, they do routinely consider EFNs under existing government policy as required. The policy specifies that an application for a licence or short-term use approval may be refused or granted with specific terms and conditions in order to protect environmental or instream flow needs.

There is some variability throughout B.C. in the degree to which EFNs are protected. The increasing demand for water and a changing climate emphasize the need for greater transparency and consistency in determining and considering EFNs, and for greater clarification regarding the amount of water available for other purposes.

What we heard

- There is strong support for the protection of streams.
- There was much debate and discussion around the question of using guidelines or standards.
- It was felt that it would be unreasonably onerous for the government and applicants to consider Environmental Flow Needs for all decisions.
- There should therefore be discretion allowed for low risk (small) applications as well as applications for the use of (deep) saline groundwater.
- The application of broad Environmental Flow Needs could potentially limit development and/or economic opportunities.

Proposal

The *Water Sustainability Act* would support a consistent approach and transparent process across B.C. for considering EFNs in new groundwater and surface water allocation decisions. Considering EFNs in future water allocation decisions and amendments will better protect aquatic ecosystems, increase resilience to climate change, reduce uncertainty and help to protect fish habitat.

It is proposed that under the WSA, decision-makers (e.g., the Comptroller of Water Rights (CWR), or a Regional Water Manager (RWM)) would be required to consider EFNs when adjudicating most new water licence or short-term use approval applications for both ground and surface water, and when deciding whether to approve an application to amend an existing licence or short-term use approval if, for example:

- The application is for a new licence for a small volume and not considered to be low-risk (e.g., as a function of cumulative demand versus supply, natural flow sensitivity and sensitive species or habitats);
- The application is for a groundwater licence where the proposed extraction is reasonably likely to impact stream flow due to direct hydraulic connection (or 'connected' – see Box 11); or
- Amending a licence or short-term use approval may result in additional impacts on fish and fish habitat (e.g., if a change of works puts a point of diversion in a different part of the stream or the amendment would result in changes to the volume or timing of flow).

As part of the process for considering EFNs on an application, the RWM (including RWMs within the Oil and Gas Commission) would complete an initial simplified Environmental Flow Needs Assessment (e.g., desk-top assessment). However, in some instances, applicants may be required to complete a more detailed assessment if more information is needed (e.g., for more complex applications). Under the current *Water Act*, a RWM can request further information in support of the evaluation/adjudication of an application – these provisions would be retained.

Due to the variation in hydrology across B.C., a single approach to determining the EFNs will not be suitable for all streams and aquifers. It is proposed that the WSA will provide flexibility in the approach used to determine the environmental flow needs of a particular stream or aquifer, while still requiring decision-makers to consider EFNs in their decisions.

In some low-risk situations, the consideration of EFNs would continue to be discretionary (e.g., for small domestic licence applications that meet identified criteria[4] such as small and low-risk).

It is anticipated that the WSA would also provide the authority to create regulations that would address, for example:

- Appropriate methods for determining EFNs (e.g., a desk-top method for most projects, or a detailed assessment for larger, more complex projects such as Independent Power Projects or flow-sensitive areas);
- Situations where EFNs do not have to be considered. This could be determined by, for example, the types of applications (e.g., small, low-risk), the purpose of use, volume thresholds, circumstances or time periods, and specific streams, watersheds or aquifers (e.g., those not connected);
- Categories of applications where the consideration of EFNs would be discretionary and the requirement for additional information was unlikely (e.g., lower risk situations where the application is for a small domestic licence not located in a flow-sensitive area or is on a large water source); or
- Application information requirements.

As rights have already been granted to existing licensees, environmental flow need considerations would not be applied retroactively, unless recommended and approved in a Water Sustainability Plan or as part of any required licence review. However, the WSA would enable decision-makers to regulate these licensees to protect the environment during times of drought and scarcity (see Preservation of Critical Environmental Flows, Section 5, page 66).

4 Criteria for 'small' or 'low-risk' applications could include, for example, for (1) domestic purpose if less than 2.2 m^3 per day (500 gallons), (2) irrigation purpose/industrial purpose for agriculture use if less than 11.4 m^3 per day (2500 gallons) or 1,235 m^3 per year (1 acre foot per year), (3) as defined by the Minister, (4) as prescribed in regulation.

There are a number of decisions that are regularly made under the *Water Act* and will be made under the WSA. Box 6 below describes who these decision-makers are.

BOX SIX

Who are the Decision-Makers?

Under the *Water Sustainability Act* there would be a number of different types of decisions made. Decision-makers are defined as people who are specified in the legislation (statute or regulation) as having the power to make a decision or decisions.

- **Lieutenant Governor in Council (LGIC)** – Under the *Water Act* and under the WSA, the LGIC would have the authority to make orders in council and regulations to the extent described in the legislation. More information about the office of the LGIC can be found on the Lieutenant Governor's website.
- **Minister** – The Minister is the Minister responsible for administering the legislation. Decisions made by the Minister include the designation of the CWR and RWM.
- **Comptroller of Water Rights** (CWR) – The CWR is designated in writing by the Minister as the CWR and includes any persons designated in writing by the Minister as acting, deputy or assistant comptrollers. The CWR has broad authority under most of the empowering sections of the current *Water Act*, including all the same powers as a RWM, an engineer and an officer.
- **Regional Water Manager** (RWM) – The RWM is designated in writing by the Minister as the RWM and includes a person designated in writing by the Minister as acting or an assistant RWM. A RWM has many of the same powers as the CWR and may do anything an engineer or an officer is authorized to do. Recently, staff in the Oil and Gas Commission have been designated as RWMs for the adjudication of applications supporting oil and gas activities.
- **Engineer –** An engineer is a professional engineer designated in writing by the CWR as an engineer. The powers of an engineer are significant and primarily identified in Section 88 of the current *Water Act*.

- **Water Bailiff** – Water Bailiffs may be appointed by the CWR or a RWM under Section 35 of the *Water Act* to assist the engineer in regulating the diversion and use of water from a stream. A Water Bailiff has the authority to enter land, regulate and control the diversion and use of water from streams as per his or her appointment, regulate and control all diversion works on these streams and, as necessary, undertake compliance and enforcement.
- **Officer** – An officer is a person or class of persons designated in writing by the CWR as an officer, or a conservation officer defined in Section 1 (1) of the *Environmental Management Act*. In addition, there are other officers under the regulation (e.g., Habitat Officer, Dam Safety Officer).

Under the *Water Sustainability Act*, additional decision-makers would include:

- **Geoscientist** – A geoscientist would be included under the definition of an engineer and have similar powers.
- **Others** – The *Water Sustainability Act* would provide for regulations that would permit the delegation of particular statutory authorities to people and/or agencies outside of the provincial government (e.g., local government, First Nations). The regulation would identify any restrictions on the extent of, and terms and conditions on which, powers are delegated and how they are to be exercised.

Note that in this legislative proposal, the decision-maker is generically referred to in most sections. The appropriate decision-maker will be identified during development of the WSA.

Prohibiting Dumping Debris

Various provisions in the *Water Act* address dumping debris into a stream or aquifer. For example, Section 79 prohibits the introduction of foreign matter (e.g., refuse, pesticides or fertilizers) into a well and enables the remediation of contaminated wells. Section 93 makes it an offence to put into a stream any sawdust, timber, tailings, gravel, refuse, carcass, or other thing or substance after having been ordered not to do so. Additional provisions of the *Fish Protection Act*, currently not in force, would also prohibit dumping additional types of debris into a stream. Box 7 below provides more information about the *Fish Protection Act*.

Note that the *Environmental Management Act*[5] deals with waste discharges to the environment. It provides an authorization framework to manage these discharges (e.g., industrial). Compliance and enforcement options with a number of environmental management tools help to protect human health and B.C.'s water, land and air quality.

Proposal

It is proposed that the WSA would expand the current prohibitions regarding the introduction of debris into streams and aquifers. The WSA would bring some of the debris provisions of the *Fish Protection Act* into force and align them with the current *Water Act* provisions that prohibit injecting materials into an aquifer or putting materials into a stream. Items that would generally be considered as debris would include, for example, refuse, carcasses, human and animal waste and pesticides or fertilizers.

It is also proposed that the WSA would allow a decision-maker (e.g., engineer, geoscientist) to order remediation or mitigation to be undertaken by persons responsible, directly or indirectly, for the introduction of debris. In addition, the current proposal would enable environmental offsets, for example, when remediation or mitigation may be more beneficial at a different location.

5 See www.env.gov.bc.ca/epd/main/ema.htm for more information on the *Environmental Management Act*.

BOX SEVEN

The Fish Protection Act and the Water Sustainability Act

B.C.'s *Fish Protection Act* was introduced in 1997 and includes a number of provisions that protect fish and fish habitat, prohibit dams on certain rivers, designate sensitive streams and limit *Water Act* approvals and licences on sensitive streams. *Water Act* officials can only issue or amend licences or approvals on designated sensitive streams if they are satisfied that:

- There are no significant adverse impacts on the protected fish population;
- Mitigation measures included in the approval or licence will avoid any significant impacts; or
- If mitigation cannot fully address the impacts, measures to fully offset the impacts may be implemented elsewhere.

Section 9 of the *Fish Protection Act* empowers the Minister to make temporary orders to limit rights to divert water under the *Water Act* if a drought lowers water levels to a point where the survival of a fish population in a stream may be threatened.

The *Riparian Areas Regulation* under the *Fish Protection Act* allows streamside protection directives for some local governments to protect riparian areas from residential, commercial, or industrial development within specified areas of B.C. Local governments are required to either:

- Incorporate required riparian area protections into zoning and rural land use bylaws under the *Local Government Act;* or
- Ensure that local zoning and permitting provide a level of protection that is, in the opinion of the local government, at least comparable to that required by the streamside protection directives.

Since the WSA would include similar requirements for the protection of environmental flow needs and aquatic habitat for fish and other species, many of the *Fish Protection Act* provisions may become redundant under the *Water Sustainability Act* while others could align well with the proposed protective provisions. It is proposed that some sections of the *Fish Protection Act* pertaining to water allocation may be brought into the *Water Sustainability Act*.

2.3.3 Consider Water in Land Use Decisions

Water Objectives

Water is essential for healthy watersheds, resilient communities and thriving industries. Most activities on Crown land and many on private land require government authorization through a range of provincial statutes and regulations[6] (see Appendix A). These provide a number of measures to help protect water quality, water quantity and aquatic ecosystem health when making decisions; however, there are also gaps which could, in some cases, limit protection of water resources. While implementation of land use plans has historically played a key role in managing land-based activities and their impacts to water, demand is growing for a coordinated assessment of land and water activities. New tools are needed to help manage the impacts of land-based activities on water.

What we heard

- The impacts of land-based activities on water resources must be considered: decisions about land and water need to be connected and watersheds protected.
- Existing statutes such as the *Forest and Range Practices Act* and *Oil and Gas Activities Act* contain appropriate provisions to protect water. Additional action by natural resource tenure licensees should not be required in those cases.
- Decision-makers working under other statutes need to consider impacts on water in their decisions.

6 *Forest and Range Practices Act, Parks Act, Oil and Gas Activities Act, Mines Act, Environmental Assessment Act, Drinking Water Protection Act, Environmental Management Act, Land Act, Mineral Tenures Act, Private Managed Forest Land Act, Range Act, Transportation Act, Local Government Act, Community Charter*

Proposal

Water Objectives would provide strategic direction for decision-makers – primarily in the natural resource sector and local governments – for understanding, protecting and managing water quality, water quantity and aquatic ecosystem health when making decisions with the potential to impact the water resource. Objectives would help provide clarity and consistency in decision-making, and create a common approach for decision-makers to consider these impacts.

It is proposed that Water Objectives could be established to address water quality, water quantity and aquatic ecosystem health. They could be established for a stream (and its tributaries), an aquifer or an area of land (e.g., the area under a Water Sustainability Plan).

It is proposed that under the WSA, decision-makers (e.g., CWR, RWM), would be required to consider the Water Objectives, to the degree practical, and have the ability to apply appropriate terms and conditions to authorizations to help prevent or mitigate associated impacts. Decision-makers under other natural resource statutes could also be required (by regulation) to consider the Objectives and have the ability to apply terms and conditions for the same purposes.

It is proposed that the WSA would also provide the authority to create regulations that, for example:

- Establish the Objectives and define how they will be measured
- Enable processes to establish and implement the Objectives
- Identify who will be required to consider the Objectives (e.g., which decision-makers under which statutes) and whether the WSA takes precedence over other statutes; and
- Require local governments (e.g., regional districts and municipalities) to consider the Objectives in their planning and decision processes

It is proposed that the Water Objectives would focus on environmental condition rather than on a particular sector. The approach used to define the Objectives would integrate current initiatives (e.g., the developing approach for evaluating cumulative effects[7] and the Environmental Mitigation Policy[8]) and legislative measures that aim to protect water quality, quantity and aquatic ecosystems (e.g., as in the *Forest and Range Practices Act* and the *Oil and Gas Activities Act)*.

7 The Province has a project underway to develop a Cumulative Effects Assessment Framework for B.C..This project is in the early stages of development and testing.

8 See www.env.gov.bc.ca/emop/ for more information on the Environmental Mitigation Policy.

Examples of Water Objectives are provided in Table 1 below. Particular indicators would be used to establish, define and measure the Objectives. Indicators would be evaluated on an area or regional basis.

Table 2. Example Water Objectives

Provincial-Wide – Water Objectives (qualitative statements for water quantity, quality and aquatic ecosystem health)	Regional – General Indicators (used to define and measure the objectives for a particular area)	Area or Site – Target for Management (for each general indicator)
Water quantity is sustainable applicable to ■ Surface water ■ Groundwater	■ Groundwater levels ■ Licensed volume (percent of total natural supply) ■ Frequency of water shortage	■ Groundwater levels are stable ■ Projected increase in demand for water does not result in shortage ■ Licensees are minimally affected by shortage
Water quality is suitable for its designated[9] use – applicable to ■ Surface water ■ Groundwater ■ Drinking water	■ Provincial water quality objectives ■ Aquifer intrusion rate (e.g., indication of saline water intruding into freshwater) ■ Drinking water quality guidelines	■ Water quality objectives are not exceeded ■ No intrusion of saline water into the aquifer ■ Drinking water quality guidelines are not exceeded
Aquatic ecosystems are healthy – applicable to ■ Instream habitat ■ Riparian habitat	■ Area of functioning aquatic ecosystem ■ Conservation framework[10] ratings ■ Presence of invasive species	■ The existing portion of a stream has an adequate buffer ■ Existing threatened or endangered species are maintained ■ The number of invasive species has been limited

9 For the purposes of assessing and managing water quality, in B.C. there are five designated uses: source water (drinking water), recreation, aquatic life, wildlife, and industrial. These are not related to the water use purposes used for allocating water.

10 For information on B.C.'s Conservation Framework see www.env.gov.bc.ca/conservationframework/.

Water Sustainability Plans

Land- and water-based activities (e.g., resource extraction, urban development) can affect water and watershed health. The cumulative effects of these activities can also increase risk to the water supply or cause watersheds to degrade, .resulting in poor drinking water quality, damage to aquatic ecosystems and harm to species at risk.

Part 4 of the *Water Act* (Water Management Plans) currently allows the Minister to designate an area and establish a process for completing a Water Management Plan if the Minister considers that a Plan would help address or prevent conflicts (among users or with the environment) or risks to water quality. Water Management Plans have a rigorous process to assure the integrity of the Plan, its process and its outcomes; however, they often require significant resources. This degree of complexity may not always be needed, depending on the scope and scale of the issues under consideration.

What we heard

- Watershed planning is a tool that can be used to help manage impacts on water.
- There are concerns about where the resources to prepare these plans will come from.

Proposal

It is proposed that the WSA would replace Water Management Plans with Water Sustainability Plans, which would be both proactive and reactive in responding to watershed issues, integrating water and land use considerations and helping to address issues with water supply, water quality and aquatic ecosystem health. Plans could be developed to:

- Respond to conflict (among users or between users and the environment) and increasing risk (to water quality, supply or aquatic ecosystem health);
- Provide a framework for promoting a healthy and functional watershed; and
- Consider land and water use activities with the potential to have an impact on water resources, and guide how they are used and managed.

Both groundwater and surface water could be included and considered in the development of a Water Sustainability Plan.

Because B.C. has great diversity – in its ecosystems, hydrologic regimes, communities and industries – each Water Sustainability Plan and its process would be unique, to respond to the local situation. Water Sustainability Plans could be completed at varying watershed scales and complexities. It is anticipated that Plans would be completed only where use of other area-based tools has not been adequate to prevent or respond to local watershed issues. Box 13 provides an overview of the potential area-based tools available under the WSA.

Plan initiation

It is proposed that a Water Sustainability Plan could be developed under the direction of the decision-maker (e.g., Minister, CWR), if it is considered that a Plan would address or prevent, for example:

- Conflict (e.g., among users or with the environment);
- Risks to water quality, water supply, or aquatic ecosystem health; and/or
- Concerns related to the environment (e.g., fish or fish habitat).

Water Sustainability Plans could be initiated and developed concurrently with other planning processes (i.e., using the same process, such as is the case for Drinking Water Protection Plans). Plans would generally be developed for all or part of a watershed (e.g., for hydrologically similar areas) and they could consider activities on both Crown and private land. The area under the Plan could vary in size (e.g., being greater than or lesser than the area of a watershed) and depend on such factors as administrative boundaries and the extent of aquifers.

Plan development

It is anticipated that certain common process elements would be used to deve-lop Water Sustainability Plans. For example, Plan development would:

- Be collaborative, engaging the public, stakeholders and other levels of government including First Nations;
- Use advisory committees, when appropriate, to support Plan development;
- Include public review and comment periods for draft and final Plans; and
- Be made publicly available once finalized.

Each Water Sustainability Plan would be tailored to the local watershed issues and could include the following (but would not be limited to), for example:

- Water allocation planning information (e.g., water budget)
- Watershed issues (e.g., water scarcity, changes to climate and cumulative effects)
- Identification of the form and function of natural systems and how these might change over time
- Links to the Water Objectives and Environmental Flow Needs
- Assessment of cumulative effects
- Relationship to other agreements, commitments and plans (e.g., relationship to Water Use Plans, Regional Growth Strategies, Official Community Plans)
- Process for conflict resolution
- Water management strategies (e.g., conservation and efficiency measures, including water reuse and recycling)
- Plan recommendations (e.g., for development of area-based regulation or establishing an Agricultural Water Reserve–see below)
- Plan timelines (including for review)
- Responsibility for implementation

Plan completion and implementation

The recommendations in each Plan would vary with size, scale and complexity, and could be implemented in different ways. In some cases, existing policy and regulatory tools could be used. For example, use of voluntary approaches (e.g., water users in a particular area are encouraged to adopt a specific practice) or best management or codes of practice, and development of smaller scale plans such as drought plans or area-based regulations. For other Plans, an implementation regulation may be needed to support its implementation.

Regulations

Further detail on Water Sustainability Plans is being developed. It is proposed that the WSA would enable the development of regulations to support planning requirements and processes, for example:

- Issue identification
- Terms of reference
- Public consultation
- Planning area
- Approval
- Implementation
- Recommendations for addressing the issues
- Collection of information
- Recommendations for addressing the issues
- Performance monitoring
- Documentation
- Review, amendment and cancellation of plans

Transition of existing plans

Water Management Plans developed under the *Water Act* would be considered as Water Sustainability Plans under the WSA.

Plans developed by parties other than the provincial government

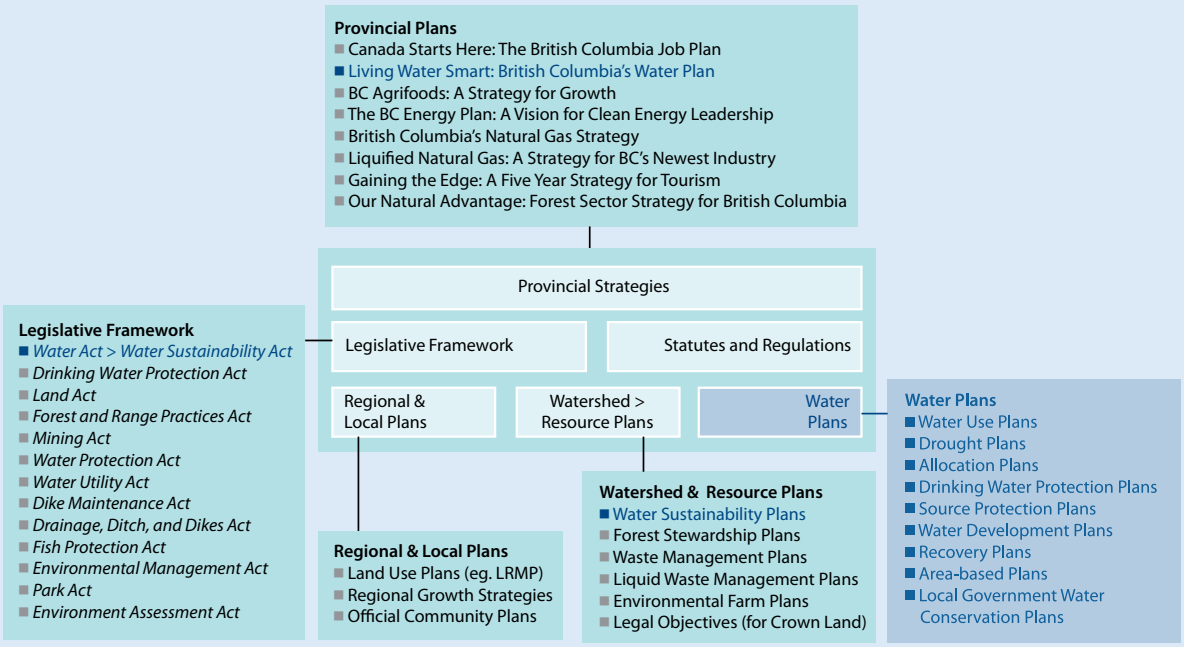
Further detail on the anticipated planning processes is being developed. This would include the development of Water Sustainability Plans by parties outside the provincial government, assuming that certain regulatory requirements would be met (e.g., for process, content and approval).

Box 8 provides an overview of planning and related activities in B.C. today.

BOX EIGHT

Land and Resource Planning in B.C.

Planning in B.C. takes many shapes and forms, from high-level government strategies such as Living Water Smart and Land Use Plans, to area and site specific tools such as Drought Plans and Water Development Plans.



2.3.4 Regulate and Protect Groundwater Use

Regulate Groundwater Extraction and Use

Approximately one in four British Columbians depends on wells for drinking water. Many wells also provide water for commercial and industrial uses. Figure 5 provides an overview of the distribution of the approximately 100,000 known groundwater wells in B.C. today.

Although the extraction and use of groundwater has not generally been regulated under the *Water Act,* the Act does regulate well drilling practices. For example, the Act sets out certain requirements for qualified well drillers and pump installers, requires well owners to protect groundwater, and for the implementation of approved Water Management Plans that could include drilling authorizations.

Well construction is further regulated under the Ground Water Protection Regulation. The use of the groundwater extracted from these wells is largely unregulated unless an environmental assessment is required.

An environmental assessment is required if the well is designed for an extraction rate equal to or greater than 75 litres per second (1,000 gallons/minute or 6,480 m^3/day) and the well(s) are to be operated intermittently or continuously for a year or more. When the volume threshold (design capacity) is exceeded, an environmental assessment certificate under the *Environmental Assessment Act* is required (see the *Environmental Assessment Act,* Reviewable Projects Regulation).

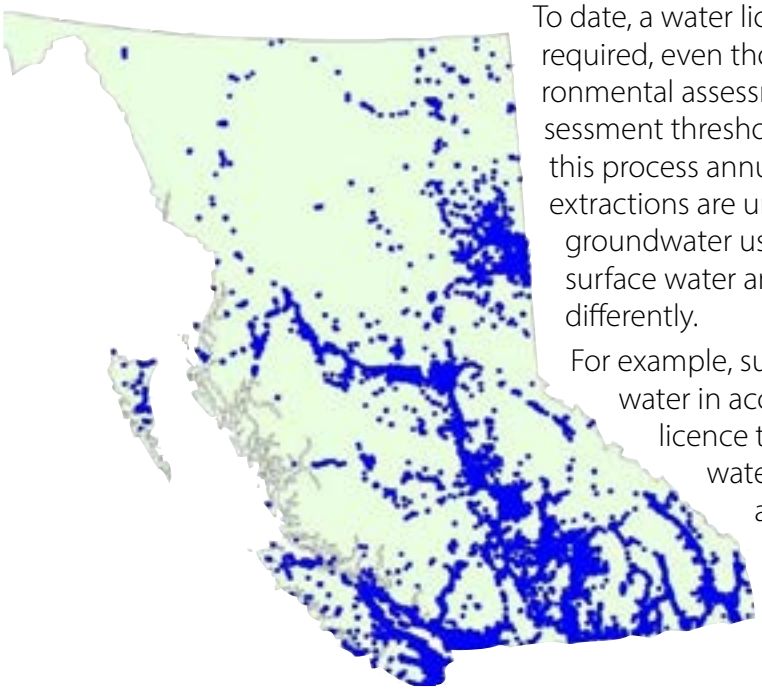


Figure 5. Distribution of known groundwater wells across B.C.

To date, a water licence for groundwater has not been required, even though a project is undergoing an environmental assessment. Because the environmental assessment threshold is high and very few wells undergo this process annually, the vast majority of groundwater extractions are unregulated. The gaps in regulation of groundwater use are significant and have resulted in surface water and groundwater users being treated differently.

For example, surface water licensees are required to use water in accordance with the *Water Act* and their licence terms and conditions, and to pay annual water rentals. None of these requirements apply to groundwater users. That has left

the provincial government unable to fully address many conflicts between well owners, protect the rights of licensed surface water users or prevent the decline of water levels in streams, wetlands and aquifers. Moreover, the absence of regulation makes it difficult to collect information about the use of groundwater, especially by large users.

What we heard

- There is strong support for the regulation of groundwater use.
- The original proposal for regulation of groundwater only in priority areas was seen as not going far enough.
- Surface and groundwater should be managed as one resource.
- Saline groundwater should not be regulated.

Proposal

It is proposed that the *Water Sustainablity Act* would establish a regulatory framework for existing and new groundwater extraction and use, generally parallel to the framework for surface water, with some differences that reflect the distinct nature of the resource. While the existing provisions for protecting groundwater would be modernized (i.e., modernize the legislative language and include new policies), a number of new requirements proposed for groundwater users would be included in the *Water Sustainablity Act* and are further detailed below.

Recognizing that there would be both existing and new groundwater users, two processes would be established (one for transitioning in existing users and one for new users) to ensure efficient authorization and regulation.

It is proposed that large volume users would be required to obtain an authorization and pay application fees and annual water rentals. Groundwater use for domestic purposes (i.e., domestic groundwater users) would generally be exempted from the requirement to obtain an authorization (see Box 9), unless required to do so under an area-based regulation (see this section below).

It is anticipated that new requirements would be developed to protect groundwater and groundwater users as well as enable new requirements for different classes of drillers and pump installers. The Ground Water Protection Regulation would also be expanded to include for example, requirements for submission of well records, well pump installation and reporting and well maintenance.

It is proposed that regulation of groundwater extraction and use would apply FITFIR and the rights for groundwater use would be integrated with the rights for surface water use (i.e., priority dates would be integrated primarily for aquifers connected to streams and tributaries (see Box 11)) to allow conflicts between surface and groundwater uses to be resolved under the same system.

It is also proposed that the provisions in the current Part 1 (Definitions and Application) and Part 2 (Licensing, Diversion and Use of Water and Related Matters) of the *Water Act* be reviewed and modified to ensure their relevancy and applicability to groundwater. New groundwater definitions would be added where required (e.g., closed-loop geoexchange wells) and may include clarifying the types of wells that could be captured under the WSA (e.g., to determine minimum construction standards).

BOX NINE

Groundwater Use for Domestic Purposes

Under the *Water Sustainability Act*, users of groundwater for domestic purposes (i.e., domestic groundwater users) would not be required to obtain a water licence or a short-term use approval. Generally they would be excluded from doing so – they would not be able to obtain a licence or approval, even if one was wanted. However, in particular circumstances that exclusion would be removed if requirements are imposed for all groundwater users to be licensed either through a Water Sustainability Plan or under an area-based regulation.

Because these users are excluded from licensing, they are also exempted from a number of obligations (they are both excluded and exempted), for example the requirement to pay application fees and annual water rentals. **In this document, for ease of reference, all users not required to obtain a licence will be referred to as 'exempted users'.**

Regardless of whether or not domestic groundwater users are required to obtain a licence or approval, their use, if known, would be protected by requirements for applicants to identify potentially impacted users. Domestic groundwater users would also be subject to some forms of

regulation. For example, exempted users would still be required to make beneficial use of the water. These users could also be regulated during times of scarcity to protect critical environmental flows but subject to considerations for essential household use (including domestic animals and poultry). As well, they would be required to construct their works in accordance with any regulations.

More information about domestic groundwater users can be found in the sections that follow.

Regulating Groundwater Extraction and Use

Requirements to obtain an authorization

It is proposed that, province-wide, all owners of new and existing wells would be required to obtain a water licence for ongoing use unless the use is exempted (see below). As with surface water, one licence could cover multiple water use purposes from the same aquifer using the same works. Other authorizations for groundwater users would include short-term use approvals and drilling authorizations (subject to the exemptions below). The types of wells that would require an authorization would include:

- **Water supply wells** for drinking water, irrigation, industry and commercial use (unless exempted, see below);
- **Dewatering wells** such as at construction and mine sites; and
- **Shallow water source wells**[11] extracting shallow (e.g., ≤600 m), non-saline groundwater (the definition of saline would be prescribed in a regulation – see Box 10 for a proposed definition of saline).

Exemptions

Some groundwater users would be exempt from the requirement to obtain a water licence or short-term use approval (i.e., excluded). Exempt uses would generally include:

- Use of groundwater for domestic purposes;
- Use of groundwater from hot temperature geothermal wells and remediation wells for contaminated sites;
- Groundwater extracted for testing and measuring purposes, as long as the extraction was done in compliance with the WSA and its regulations (e.g., as

11 Drilling of water sources wells are regulated under the *Petroleum and Natural Gas Act*.

in Part 8 of the *Water Act* Water Regulation, where the Short Term Diversion or Use of Water for Well Drilling is exempt);

- Saline water source wells and deep saline groundwater. The WSA would include the authority to exempt deep, saline groundwater, and to set depth thresholds and salinity levels. Deep, saline aquifers would be expected to have minimal hydraulic connection with shallower groundwater.

Licensing exemptions may be modified under an area-based regulation or in a Water Sustainability Plan area (e.g., all groundwater users may be required to obtain a licence in these areas). Area-based regulations may also contain requirements that restrict the size of works or identify other criteria for exempted wells. In some cases, an area-based regulation could be used to address a well field (e.g., multiple small wells in a small geographic area such as a subdivision).

BOX TEN

Saline Groundwater

- Groundwater from some deep formations can be very saline (or salty), and can contain naturally occurring hydrocarbons such as gas or petroleum. High salinity is thought to reflect the fact that deep, saline groundwater is disconnected from shallower ground and surface water. Saline groundwater from these deep formations would not be suitable for use as a water supply (e.g., drinking water, irrigation); however, saline groundwater might be a viable source of water for some commercial and industrial development (e.g., oil and gas production, recovery of oil and gas supplies) and thereby take pressure off the demand for the freshwater.
- The assumed disconnection from shallower groundwater and surface water and the viable use of saline groundwater, in particular for oil and gas development, suggests that deep, saline groundwater could be managed separately from shallower groundwater resources.
- It is proposed that saline water could be defined in the WSA as groundwater found under 600 metres below the ground surface that contains either:
  >10,000 mg/L total dissolved solids; or
  > 4,000 mg/L total dissolved solids and contains amounts of hydrocarbons or hydrogen sulfide.

Consideration for exempted groundwater use for domestic purposes

When licensing groundwater users, it is anticipated that the interests of known exempted domestic groundwater users would be considered by the decision-maker (e.g., CWR, RWM) during licence adjudication. Information on these exempted users would generally be found in the provincial water well (WELLS) database[12].

Currently, the submission of well records to the provincial government is voluntary; however, under the WSA the submission of well records would be mandatory for all new wells (including exempted wells). Owners of existing wells would be encouraged to self-identify so their uses could be considered in decision-making. Applicants for new water licences for groundwater extraction would be required to assess the impact of their proposed extraction and use on known exempted users.

Transitioning existing groundwater users

It is proposed that, in general, groundwater users that are required to obtain a licence (i.e., they are not exempted), would have a transition period (e.g., three to five years) during which an existing groundwater user who is required to obtain a licence could apply for a licence authorizing their historic use. It is proposed that the priority date would be determined by the decision-maker (e.g., CWR, RWM) using information about when the well was developed, when the groundwater was first used, the extent of that use and other relevant data (e.g., well record, pumping record). When issuing a licence to an existing groundwater user, the decision-maker:

- May issue one or more licences for the different water use purposes with priority dates based on the history of water use (i.e., different licences may have different priority dates); and
- Would consider whether the existing use of groundwater was both beneficial and efficient, and would apply the terms and conditions he/she deems appropriate. Generally, the volume licensed would be the volume that has been used beneficially (i.e., the appropriate amount of water for the intended purpose and considering efficiency).

It is proposed that the process to transition existing groundwater users would be specified in a regulation that would also identify the process and any requirements. During the transition period, groundwater use could continue while the application is being processed.

It is expected that applications received after the official transition period would be treated like new applications (see below) and not be transitioned.

Where an area-based regulation or a Water Sustainability Plan requires all ground-

12 The WELLS database is the provincial groundwater well database. It can be searched for water well records provided that legal descriptions, well locations, or well construction details of the well are known. More information can be found at www.env.gov.bc.ca/wsd/data_searches/wells/index.html.

water users to obtain a licence (i.e., users are no longer exempt from licensing), it is expected that regulations would also describe the transition period and process for obtaining licences.

New groundwater users

It is proposed that the WSA would require new groundwater users that are not exempted to obtain a water licence or short-term use approval prior to using water. The same system used for determining the priority for surface rights – FITFIR – would be used to integrate the priorities for both groundwater and surface water users. The priority date would generally reflect the date of application for the water licence.

Anyone applying to extract and use groundwater would be required to assess the impact of their proposed extraction and use on known existing groundwater users, including exempted domestic groundwater users (see above). It is anticipated that the process for considering groundwater licence applications would be similar to that used for adjudication of surface water applications (see Box 12 for information on the current process to adjudicate applications for a water licence as well as the obligations of licensees).

BOX ELEVEN

Connecting Surface Water and Groundwater

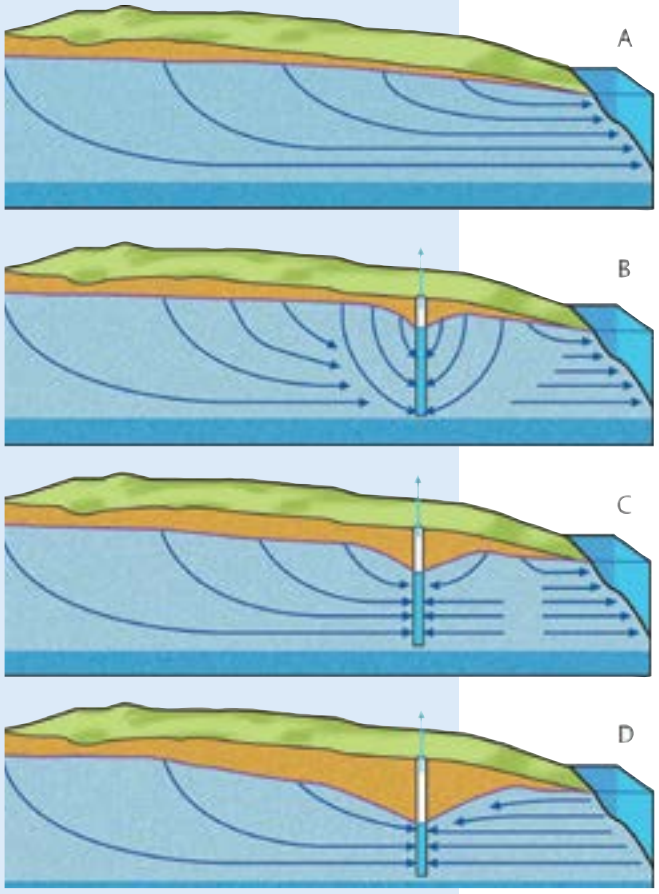
Surface and groundwater interact in three main ways:

- Groundwater discharges into a stream channel when the level of the water table close to the stream is higher than the elevation of the stream's surface;
- Surface water seeps into an aquifer when the level of the water table is lower than the elevation of the stream water surface; or
- Streams can do both, they can receive and lose water in different reaches.

The graphic shows that in the situation pictured (drier times of year), the groundwater normally discharges into the stream (A). When a well drilled into the aquifer adjacent to and connected to the stream begins to pump, it initially pumps water from storage in the aquifer (B and C). However, as the pumping progresses, the zone of influence can (depending on pumping rate and proximity) reach a connected stream and deplete stream flow by inducing infiltration of stream water into the aquifer an towards the pumping well (D).

In general, aquifers receive water through the infiltration of precipitation. During times of low flow, groundwater can contribute significantly to the base-flow of streams. As a result, the extraction and use of groundwater can adversely affect environmental flows (surface water) as well as the quantity of surface water available in a connected stream. Because of their proximity to the surface, shallow aquifers can also be more susceptible to contamination, affecting water quality.

In some cases, the flow between aquifers and streams may persist. In other environments, this varies greatly by stream reach and can also often be affected by storms and flooding. Where streams are not connected to aquifers, pumping of groundwater does not affect stream flow near the well (zone of influence). Where they are connected, stream flow can be disrupted.



More information on groundwater and groundwater issues can be found on the Ministry of Environment website.

Adapted from Natural Processes of Groundwater and Surface Water Interaction. The Hydrologic Cycle and Interactions of Groundwater and Surface Water. US Department of the Interior.

Changes to groundwater use

As with surface water, there are times when changes to groundwater use could require a new licence or approval, or an amendment to an existing licence or approval. For example, if a licensee intends to change the authorized works, the purpose or the period of water use, the licensee would be required to apply for a licence amendment.

A licensee would be required to apply for a new licence if, for example, a licensee proposes to extract more water or alter their well by drilling into a different aquifer. A new licence or approval would also be required if the water use changed from an exempted to a non-exempted use.

Differences between regulation of groundwater and surface water

While the management of groundwater would be integrated as much as possible with the regulation of surface water, there would be some differences. For example:

- Currently, the decision-maker (e.g., CWR, RWM) can request and consider additional information when making decisions regarding adjudication of applications. The type of information requested by the decision-maker (e.g., CWR, RWM) may be different for groundwater licensing. For example, information requested could include information about water availability and well yield, impacts on other users (both surface and groundwater) and on stream flow and/or any issues related to land, works and safety.
- The timing of the construction of works (e.g. the well) may also be different. For surface water, a licence or approval is required prior to the construction of works as stream flows can be measured or estimated and impacts assessed without works being installed. For groundwater, the well may have to be constructed and a pumping test conducted before it is possible to determine the well's yield and assess its potential impacts on other nearby wells and streams.
- For larger wells, it would generally be necessary to use a qualified professional to construct works and prove water supply; however, before the well could be put into production, a water licence would be required.
- If an exempted user has provided information to the provincial WELLS database, this use would be considered in adjudication of licence applications from other groundwater users on that aquifer (see Consideration for exempted groundwater use for domestic purposes).

Protecting Groundwater

Drilling Authorizations

Drilling authorizations are used as a proactive management tool (e.g., to help protect groundwater) intended to regulate drilling and other activities (e.g., altering a well, installing a well pump, conducting a flow test), particularly in areas where

water availability is approaching its limit or where there is conflict. Currently, the authority to require a drilling authorization under the *Water Act* and the *Drinking Water Protection Act* is limited to areas under approved Water Management Plans (*Water Act*, Section 66, Implementing a plan: restrictions on well drilling) or Drinking Water Protection Plans (under the *Drinking Water Protection Act)*.

It is proposed that the WSA would allow drilling authorizations to be required under an area-based regulation (see below) or in an area under a Water Sustainability Plan. This would allow more control over specific activities or situations, where necessary, and allow greater flexibility in selecting where a requirement for a drilling authorization could apply. It is proposed that drilling authorizations would be required, for example, for altering wells and testing and installing pumps (equipping the well). The regulation(s) may include, for example:

- Requirements for drilling authorizations for certain areas, activities, or situations
- The type of information required in a drilling authorization application
- The term of the drilling authorization
- Any associated fees or
- Changes that trigger an amendment of the drilling authorization or application

Well construction, installing well pumps and conducting flow tests

Currently Sections 69 (Restrictions on construction wells, closing wells and related activities) and 70 (Restrictions respecting well pumps and flow tests) of the *Water Act* specify that constructing and closing wells, installing well pumps or conducting flow tests are generally restricted activities that can only be performed by qualified well drillers or qualified pump installers. Although the *Water Act* already has requirements regarding well drilling and the protection of groundwater, it is proposed that the WSA would update these requirements to reflect the evolving industry practices and regulatory experience of the last 10 years.

While well drilling is generally an activity that is restricted to qualified well drillers, there are exceptions; for example, for dug wells that are less than 15 metres (50 ft) deep or drilling a geotechnical hole that does not disturb an aquifer, a qualified well driller would not be required. It is proposed that the WSA would clarify that drilling into or penetrating an aquifer is 'disturbing' the aquifer and requires a qualified well driller.

Closed-loop geoexchange wells are currently classified as a subclass of geotechnical wells; however, the number of these wells is growing and they are generally

deep enough that their construction is not straightforward. It is proposed that the WSA would change the definition of a well to include them. It is also proposed that the WSA would require these wells to be drilled, constructed and closed under the supervision of a qualified well driller or qualified professional to improve the protection of the environment and the aquifers.

It is also proposed that the WSA would provide clearer, more flexible authority to create classes of well drillers and well pump installers corresponding to the proposed industry certification. This would restrict certain classes of well drillers to drilling certain types of wells or pump installers to installing pumps of certain types or sizes. It is proposed that the WSA would provide the authority to remove exemptions for some low-risk wells (e.g., dug wells less than 15 metres deep) in certain areas and situations so that qualified drillers would be required (e.g., all wells require a qualified driller in areas of known artesian flow conditions).

Well operation

Section 78 (Well operation) of the *Water Act* currently prohibits impacts to water quality and requires that the aquifer into which the well is drilled be protected from contaminated or salt water. Protection of adjacent aquifers and connected streams is also needed. It is proposed that the water quality provisions in Section 78 would be extended to adjacent or neighbouring aquifers and/or connected water sources to prevent introduction of contaminated or salt water.

Flowing wells

Section 77 (Controlling artesian flow) of the *Water Act* describes the obligations when flowing artesian conditions are encountered (i.e., pressure in the well is high enough that water naturally flows to the surface). A qualified well driller or other qualified professional must be retained to stop or control the flow. It is proposed that the WSA would further define the requirements for stopping and controlling flow to provide clarity. Records on flowing wells would also have to be submitted to government, so knowledge of areas of flowing artesian conditions is made available to the public.

Ground Water Protection Regulation

The current Ground Water Protection Regulation sets minimum standards required for the construction, identification, reporting, testing, maintenance, alteration and closure of wells. It is proposed that a number of provisions would be added to the Regulation, such as requirements for:

- Developing, testing and disinfecting a water supply well after drilling to reduce risk of contamination and help ensure safe development of water supply wells
- Banning well pits for new water supply wells and regulating older well pits to reduce the sanitary, environmental and safety risks associated with them
- Mandatory submission of well records for new wells, providing information about the well (e.g., lithology, water levels) and the local aquifer, and helping to identify the location of any exempted users
- Well pump installation and reporting. This could include repairing the well's surface seal after pump installation, change to the wellhead, use of non-toxic lubricants and solvents, disinfection and conveyance of water away from the wellhead
- Well maintenance requirements for storage of contaminants away from water supply wells to reduce potential for contamination and ensure proper maintenance of equipment to control artesian flow

Regulations

In addition to the Ground Water Protection Regulation, it is proposed that the WSA will enable the development of regulations for groundwater use, some of which have been described above.

BOX TWELVE

Water Rights, Licences and Obligations under the *Water Act*

Water Rights

Currently, there are three main types of authorizations that can be obtained for the diversion and use of surface water under the *Water Act*:

- A water licence specifies the terms and conditions under which a water right is granted to an individual or organization. A licence is not currently required to extract and use groundwater – this would change with the *Water Sustainability Act*;

- A short-term use approval authorizes the use of water for a period not exceeding 24 months; and
- An approval authorizes the holder to make changes in and about streams (e.g., bank protection works) that are not part of a water licence.

The authority to use water – a water right – is obtained through a licence or a short-term use approval.

Section 42 of the *Water Act* specifies that it is not an offence for a person to use unrecorded water from a surface source for domestic purposes or for prospecting for minerals. Unrecorded water is water which is not currently authorized to be used by others under a licence or approval. Section 42 also allows for the use of water to extinguish a fire but requires that the flow of the stream must be restored once the fire is out. These users are often referred to as 'unrecorded users.'

Obtaining a Water Licence

To obtain a water licence you must be: the owner of the land, mine, or undertaking where the water will be used; or a utility, municipality, or other incorporated district, including water districts. BC Hydro can also acquire licences (see Section 7 (Who may acquire licences) of the *Water Act)*. The steps in the process and the information requirements to obtain a licence are set out in the Water Regulation (Part 2, Acquisition of Water Rights). Applications for these licences are filed with FrontCounter BC, which manages the initial steps of the process.

To understand and better evaluate an application and proposed water use, the CWR or a RWM[13] may request additional information to be supplied by the applicant during the review process. Copies of the application may also be referred to First Nations, and to provincial and federal agencies for comment and input. In some cases the applicant may be required to publish a copy of the application in a local newspaper. As part of the process, notice of an application for a water licence must be given to:

- Prior licensees whose rights will not be protected, as well as existing applicants on that stream;
- Riparian landowners and owners of land physically affected by proposed works; and

13 Applications for water use in the development of oil and gas resources are adjudicated by the Oil and Gas Commission's RWM through a one window approach for that industry. All *Water Act* provisions apply in the consideration of these applications.

- Any other person or provincial government ministry whose input is advisable.
- A formal objection to an application can be made by another applicant, a licensee and/or a riparian owner or landowner whose land is physically affected. Other interested parties may provide comments on an application to the decision-maker.

Once all the information has been considered and the relevant comments or objections (if any) are evaluated, the CWR or a RWM will either approve (in whole or in part) or refuse the application. If the application is approved, a water licence will be issued with the terms and conditions under which water may be used including the quantity of water allowed to be diverted, the purpose for which it can be diverted, the period of the year when it may be used and the land upon which it may be used.

Other terms and conditions, such as the maximum rate of diversion from the stream or the minimum stream flow that must remain in the stream may be included in the licence. Objectors will be provided with a copy of the decision when it is completed. An appeal to the decision can be made by an applicant, a licensee, a riparian owner, or a landowner whose land is physically affected by the decision. An appeal lies with the Environmental Appeal Board and must be filed within 30 days of receiving the decision.

Conditional and Final Licences

The licensing scheme set out in the *Water Act* allows that water rights may be granted based on a proposal to divert, use and store water, and construct, maintain and operate works. After review of the application, the CWR or a RWM may grant a licence on the terms or conditions that are deemed advisable. If a licence is granted, the licensee is provided with a reasonable period of time in which to construct the necessary works and establish the beneficial use of water that is authorized under the conditional licence. Essentially, the licensee is given a certain time to perfect the rights that were granted. After that time passes, the CWR or a RWM may undertake an investigation and issue the licensee with a final licence in substitution for the condition

al licence authorizing the diversion and use of the quantity of water found to have been used beneficially. There is no practical difference in the status or certainty of the rights held under a conditional licence or a final licence. In many cases, a final licence review is not necessary.

Obligations as a Water Licensee under the current *Water Act*

All water licensees (conditional and final) have several obligations, including:

- Payment of an annual water licence rental to the provincial government;
- Payment of assessment fees if they are in a water users community;
- Giving notice in writing to the CWR or a RWM manager if they are selling or otherwise disposing of land, a mine, or an undertaking to which a licence is appurtenant;
- Exercising their right to use water without impact to the rights of licensees whose rights have precedence;
- Exercising reasonable care to avoid damaging land, works, trees, or other property and making full compensation to the owners for damage or loss resulting from construction, maintenance, use, operation, or failure of works;
- Keeping and producing records if directed to by the CWR, a RWM, or an engineer; and
- Complying with the Act, the Regulations, the terms and conditions of their licence and any orders of the CWR, a RWM, or an engineer.

2.3.5 Regulate During Scarcity

Preservation of Critical Environmental Flows during Times of Drought and Scarcity

There are times when the supply of water may be insufficient to meet the environmental flow needs as well as the diversion authorized under water licences and approvals. Both the diversion and use of surface water and the extraction and use of groundwater can adversely impact the health of streams, aquifers, aquatic ecosystems and species, particularly when the water use occurs during natural periods of low flow.

Currently under the *Water Act* the CWR, a RWM or an engineer may regulate the diversion, use and storage of water from a stream. This authority has not yet been extended to the extraction and use of groundwater. These regulatory powers are generally limited to enforcing the specific terms and conditions of water licences and short-term use approvals based on priorities in relation to other licensed rights, and curtailing unauthorized uses.

Authority under the *Water Act* to reduce or curtail water use specifically to prevent serious impacts on ecological values, including fish and fish habitat, focuses on enforcement of specific terms or conditions of the licence. However, Section 9 of the *Fish Protection Act* provides the Minister with the authority to order the temporary reduction of water use to protect the survival of a fish population during a drought, regardless of priority date of licences and after due consideration for the needs of agricultural users.

What we heard

- There was concern that Environmental Flow Need provisions will require licensees to unnaturally augment stream flow.
- Protecting Critical Environmental Flows prevents long-term, irreversible impacts by imposing regulation when it is absolutely necessary.
- There is mixed support for maintaining FITFIR; some want a different approach, some want to keep it.
- Employ a 'priority of use' approach that prioritizes water for human use and agriculture.

Proposal

As noted above, the Environmental Flow Needs referred to previously is a long-term flow threshold to be considered when deciding if sufficient water is available to warrant the granting of new licences.

On the other hand, the critical environmental flow (CEF) is a short-term flow threshold, below which significant or irreversible harm to aquatic ecosystems may occur. This threshold would be used as a short-term regulation threshold during times of scarcity or drought to regulate (i.e., require users to curtail their water use) both surface water and groundwater users.

To protect critical environmental flows, it is proposed that the WSA would allow for the temporary regulation of water use using the FITFIR system of priorities, while authorizing some specific modifications (e.g., to allow for essential household use – see below).

While the current FITFIR system of water licence and short-term use approval priorities would be maintained, the priority dates for groundwater licences and approvals would be integrated with those for surface water. All users (i.e., licensees, short-term use approval holders, users of unrecorded water) could be regulated – whether or not they have a licence or short-term use approval under the FITFIR rule (see Figure 6).

The existing authorities (under Section 88 of the *Water Act*, Powers of engineers and officers) to regulate users and make orders with respect to the diversion, rate of diversion, time of diversion, storage, time of storage, carriage, distribution and use of water would be retained.

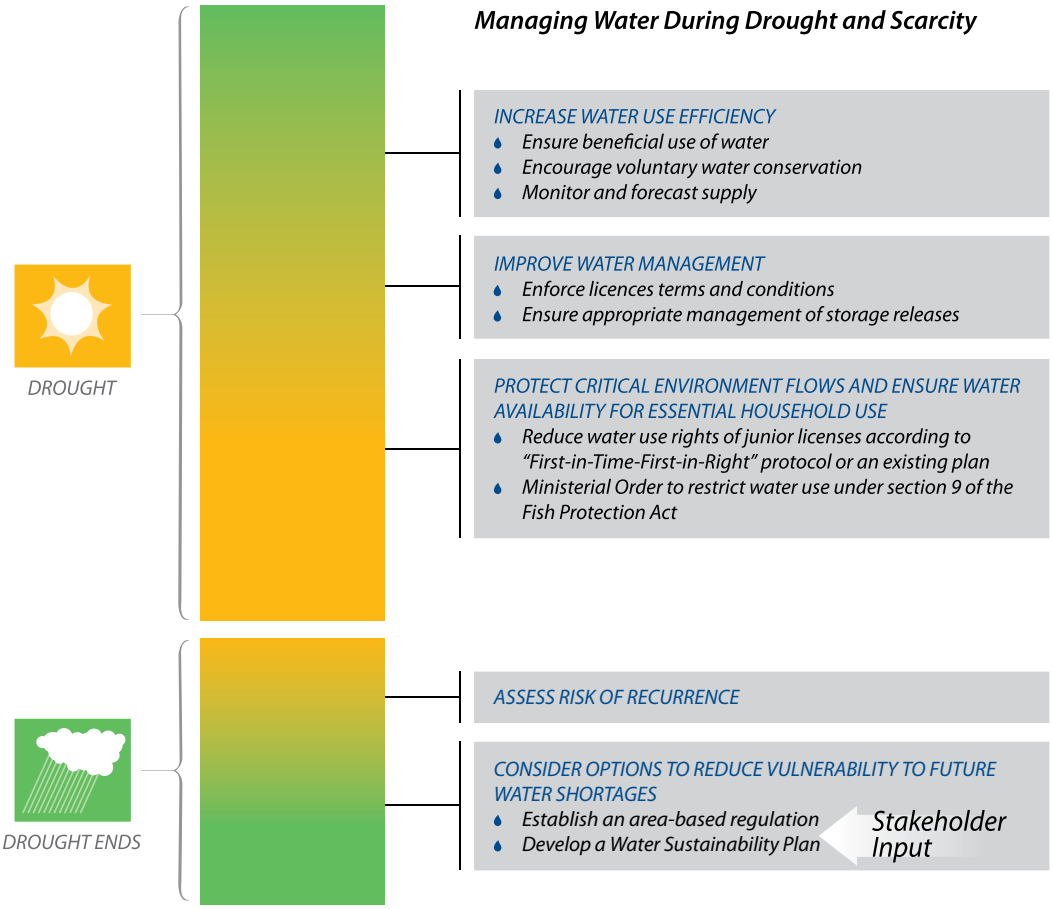


Figure 6. Proposed Process to Manage Water During Drought and Scarcity

It is also proposed that the WSA would retain the Minister's power under Section 9 of the *Fish Protection Act* to be able to order the temporary reduction of water use from a stream, regardless of licence priority date and after due consideration for the needs of agricultural users. Under the WSA, these provisions would be expand-

ed to include the extraction and use of connected groundwater and clarified so that this authority could be applied to a stream reach or tributary.

Allowances for Essential Household Use

There are times when the water supply may be insufficient to meet the demand for all the water licences and approvals on a particular stream. In those situations the CWR, a RWM, or an engineer may regulate the diversion, use and storage of water to ensure that licensees' rights are protected according to FITFIR, and that licence conditions are respected. As groundwater is not yet licensed, this authority does not extend to the extraction and use of groundwater.

At present, the authority to regulate water use is exercised in consideration of the relative priorities of licences and approvals (i.e., FITFIR). While FITFIR is a simple and effective means of organizing water licence and short-term use approval priorities on a stream or within a watershed, and it allows for a logical progression of water use curtailment, in some situations the rules can be inflexible particularly where human use (including for domestic animals and poultry) and the needs of domestic livestock (those kept for personal use) are concerned. In many situations the volume of water required for the basic needs of people and their animals is not significant in relation to the other licensed uses. We have heard that licensees' preference is that some minimal human and domestic livestock uses should be allowed to continue, but that discretionary domestic uses for non-essential needs should be curtailed using FITFIR (e.g. watering of ornamental lawns and gardens, filling of swimming pools, or washing cars).

Proposal

It is proposed that the WSA would allow for the use of water by people and domestic animals or poultry for very basic household needs, during times of shortage or scarcity, and regardless of priority.

Essential household use' could include water for:

- Drinking water, food preparation and sanitation requirements;
- Water for domestic animals or poultry (i.e., those kept as pets or for household use);
- Water for livestock on rangeland, but not intensive industrial operations (e.g., feedlots).

It is also proposed that livestock on rangeland could continue to drink from streams. However, intensive industrial livestock operations would not fall under this use (e.g., feedlots).

A decision to give priority to water use for essential household use would not be appealable under the WSA.

2.3.6 Improve Security, Water Use Efficiency and Conservation

Beneficial Use

'Beneficial use' means using the licensed volume of water for the intended purpose(s) and in compliance with the terms of the water licence. Under the *Water Act* an engineer has broad discretion to determine what constitutes beneficial use of water (Section 88(1)(c), Powers of engineers and officers) and a person who diverts water and does not use it beneficially commits an offence. Licences may also be cancelled, in whole or in part, if the licensee fails to make beneficial use of the water under the licence for three consecutive years. The *Water Act* also requires a licensee to submit a beneficial use declaration if directed by the CWR, a RWM or an engineer (Section 22.01, Beneficial use declaration).

What we heard

- There is support for requirements for users to measure and report their use.
- Support for the measuring requirements was particularly strong where large volumes of water are used.
- There is concern that metering and implementing higher irrigation efficiency will increase costs for the agriculture sector to the extent that they will no longer be able to compete.
- Users would welcome flexible and practical ways of measuring water use.

Proposal

It is proposed that the WSA would include beneficial use requirements for licensees and short-term use approval holders to use water:

- For the authorized purpose, in accordance with the licence or short-term use approval, the Act and its regulations;

- In the way and at the times authorized; and
- Efficiently, to the extent reasonably practicable for the authorized purposes (i.e., water use without waste).

In addition to requiring a licensee or a short-term use approval holder to use water beneficially (and therefore, efficiently), it is also proposed that the WSA would require unrecorded water users to use water beneficially. The WSA would allow the decision-maker (e.g., CWR, RWM, engineer, geoscientist) to request beneficial use information from any water user (e.g., licensees, approval holders, water users under the regulations or unrecorded water users).

It is proposed that the WSA would provide the authority to require licensees to undertake water conservation audits and submit the results to the decision-maker. It is also proposed that the WSA would provide decision-makers with authority to require a licensee and any other water user to take reasonable steps to ensure water will be used efficiently and without waste.

The WSA would provide the authority to prescribe in regulation:

- Criteria for water use efficiency requirements; and
- The criteria and form of a water conservation audit.

Agricultural Water Reserves

The Agricultural Land Reserve was established in 1973 to recognize agriculture as a priority use on designated lands. There are approximately 4.7 million hectares of land within the Agricultural Land Reserve where farming is encouraged and non-agricultural uses are controlled. Land outside the Agricultural Land Reserve can also be zoned for agricultural use.

Not all lands within the Agricultural Land Reserve are currently cultivated. In most parts of B.C., water is required to produce a crop, and not all lands within the Agricultural Land Reserve have identified, developed and licensed water supplies for irrigation. In some areas of the province there is pressure to convert water rights for irrigation and agricultural uses purposes to other non-agricultural use purposes on other lands. Concern around reduced agricultural production and diminished food security is growing in B.C. Securing water for agriculture is a key goal of Living Water Smart and the WSA.

What we heard

- There is support for addressing food security and securing access to water for agriculture.
- There is general support for a dedicated supply of water for agriculture that would be linked to the agricultural land reserve with monitoring and compliance checks in place.
- There is a belief that use-specific reserves should be set aside only as a last resort.

Proposal

It is proposed that the WSA would allow the establishment of Agricultural Water Reserves to help secure water for agricultural use on agricultural lands (e.g., on land within the Agricultural Land Reserve or zoned for agricultural use outside the Reserve). Agricultural Water Reserves would also help preserve currently authorized agricultural water uses and protect future water supply needs for farm use.

To establish an Agricultural Water Reserve, it is proposed that a recommendation would be required in a Water Sustainability Plan that is approved by the LGIC. A Reserve could include unrecorded water along with water already licensed (or recorded) for agricultural uses to be preserved for use on agricultural lands.

An Agricultural Water Reserve could prevent a change in water use purpose or a transfer of appurtenancy from agriculture-related water use purpose (e.g., water for irrigation, water for livestock watering) to non-agricultural purposes and to non-agricultural lands. A Reserve would therefore help reduce the erosion of water rights for agriculture through changes or transfers to other uses (e.g., change of purpose and transfer from irrigation to waterworks or other non-agricultural use). However, this type of reserve could be viewed by some as constraining their rights and flexibility.

An Agricultural Water Reserve could encourage more flexible water use within the agricultural sector, since water saved through efficiency and conservation improvements could be freed up for use on other agricultural lands within a Water Sustainability Plan area.

Review of Licence Terms and Conditions

Currently there is authority under the *Water Act* to limit any licence to a specific term after which the licence either expires or is subject to a renewal. When issuing a licence, the CWR or a RWM has authority to include a number of terms in any licence specifying the conditions of water use under that licence.

In some cases, a licence is granted based on limited information regarding available water or the potential impact of a diversion. In other cases, a proposal for water use is not fully implemented, or the knowledge of water supply and demand improves.

Section 14 (Issue of final licences) of the *Water Act* also allows a final licence to be substituted for a conditional licence, when works have been completed, for the amount of water that has been beneficially used. This can be a useful tool for modifying a licence; however, there are limitations on what can be considered.

Proposal

It is proposed that the WSA would give the decision-maker (e.g., CWR, RWM) a more comprehensive ability to review most water licences after a minimum of 30 years (other than in the case of 40-year term power purpose licences[14]). While a licence review may be desirable for all licences, the authority of the decision-maker to proceed with a licence review would be discretionary as in many cases a licence review may not be warranted.

A 30-year period would balance the need for security and certainty of water rights with the need for flexibility in managing for changing conditions. At 30 years, licence conditions may be subject to review and changes could be made to account for, for example:

- Improved water efficiency, conservation practices and available technology;
- Improved knowledge of water resources (e.g., knowledge about actual stream flow, climate change and hydrologic variability, traditional ecological knowledge);
- The licensees' beneficial use;
- Other factors identified in a regulation.

It is proposed that for a new licence, the 30-year period would commence when the licence is issued. For an existing licence, the 30-year period would commence when

14 Power purpose licences with the mandatory 40-year term would be exempted from this review since they are already subject to a renewal process (*Water Act*, section 12.2, Licences for power purposes). Power purpose licences that have been subject to Water Use Planning or are granted under the *Industrial Development Act* would also be exempted from the 30-year review.

this section of the WSA comes into force. A licence review might also occur during an amendment, an apportionment, or a transfer of appurtenancy of the licence. Completion of a licence review would reset the 30-year period.

A licence review could consider, for instance, new information on water availability, effects of climate change and the need for adaptation and/or beneficial use of the water. A review could result in, for example:

- Adjusting, for efficiency reasons, the maximum rate of diversion or setting instantaneous withdrawal limits;
- Altering the timing of diversion or storage;
- Altering existing works or installing new works;
- Adopting a more efficient practice to improve water efficiency/conservation.

It is proposed that if a review showed that a licensee had failed to meet the licence terms and conditions and any orders issued in respect of the licence, then the existing provisions for enforcement may come into play, including the potential to initiate the suspension and cancellation processes.

The WSA would also enable the development of regulations that could prescribe, for example, additional factors that could be considered in a licence review process.

Power Purpose – 40-Year Term

A water licence granted for a power purpose has a 40-year term and regulates the construction of works and the operation after construction is complete. There is generally a minimum of two to three years between the time a licence is issued and the time the facility commences operations. This is referred to as the development period.

Other tenures (such as under the *Land Act*) and Energy Purchase Agreements are generally set up for a 40-year operating period which does not always align with the 40-year term for the water licence.

Proposal

It is proposed that the WSA would maintain the 40-year maximum term for operations under a power purpose licence, and would include any associated storage purpose. The WSA would also allow for a project development period (e.g., up to five years with the potential to extend for a further five years) prior to the start of the term of operations. This would provide consistency and harmonization across statutes (e.g., *Land Act*) and agencies. There would be some flexibility for decision-makers to consider the variety of circumstances that affect the length of a project development period (e.g., consultation with First Nations about impacts to claimed or proven aboriginal rights (including title) and treaty rights, and accommodation where indicated, negotiating and securing design and engineering contracts or obtaining financing for the project).

The term for the operational period could be up to 40 years. The operational period begins when formal approval to commence operations is granted or the development period expires, whichever occurs first.

More than 50 licences with a 40-year term have been granted since this requirement was enacted. To provide existing licensees with 40 years of operation, it is proposed that licensees be provided with a limited opportunity to apply for an extension to account for the actual development period, up to a maximum of 10 years. Such an extension would not be considered a renewal of the licence (as contemplated in Sections 12.2 of the *Water Act* (Licences for power purposes).

Area-based Regulations

B.C. has a diverse range of climatic and geographic conditions and in some areas water supplies are under stress from urban development, frequent drought or scarcity. Currently under the *Water Act,* the provincial government can only manage and regulate water diversion and use through individual licences or on a stream basis. There are provisions in the *Water Act* for developing Water Management Plans in areas designated by the Minister intended to develop tools to help address or prevent conflict and risk to water resources; however, the development of a Plan is resource intensive and involves an extensive public process.

While these tools are beneficial on an individual licence or stream basis or for large areas (watersheds) that are under a plan, few tools are available that enable water managers to respond to ongoing and emerging issues in a timely manner and at a variety of spatial scales. As a result, additional area-based tools for water use and management are needed.

Proposal

It is proposed that the WSA would allow for the development of area-based regulations that could remove particular exemptions and/or reduce thresholds (e.g., exemptions for small domestic groundwater users) to address ongoing and/or emerging area-specific issues. The change in an exemption or threshold could be applicable to any part of B.C. and/or any subset of water users. For example, an area-based regulation could define a lower threshold of water use at which there would be an obligation for water users to measure and report on their use.

Area-based regulations could also be developed to, for example:

- Close a basin/aquifer to new water uses on either a temporary or permanent basis where water supply is fully committed
- Restrict well drilling (e.g., require a drilling authorization be obtained prior to drilling) or
- Require measuring and reporting by licensees who would normally be exempt and/or in a different method, form, or frequency

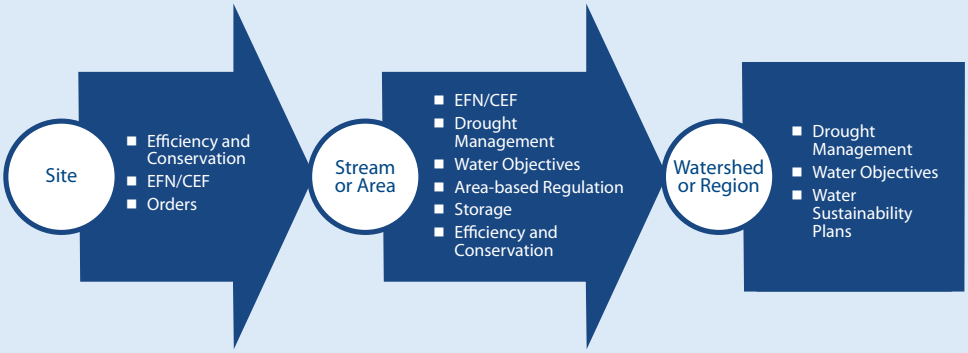
Where an area-based regulation is implemented, it is expected that the regulation would also describe the transition period and process for meeting the new requirements.

Box 13 describes the range of area-based tools that can support water management in B.C.

BOX 13

Water Management through an Area-based Approach

The Policy Proposal on British Columbia's new Water Sustainability Act refers to an area-based approach to support water management in B.C. The WSA would contain a number of tools to help manage water.



Area-based Regulations: Modifications to WSA thresholds and exemptions could be prescribed in an Area-based Regulation. This would be a regulatory tool that would help address emerging issues and support flexible and adaptable water management at a variety of spatial scales:

Critical Environmental Flows (CEF): Protecting Critical Environmental Flows during short-term scarcity means maintaining a short-term flow threshold that helps prevent significant or irreversible harm to aquatic ecosystems. As a result, licensees may be regulated more often.

Drought Management: There can be indicators of upcoming droug ht. B.C.'s River Forecast Centre provides ongoing information to the public through its snow survey and water supply bulletins. In the event of

drought and scarcity, a Provincial Drought Response Plan (policy) is in place to help manage water resources and would complement the WSA.

Efficiency and Conservation Measures: A suite of tools would support more efficient use of and conservation of water, including: improving the concept of Beneficial Use to require efficient use of water (without waste), Agricultural Water Reserves, licence terms and conditions, licence reviews and Water Sustainability Plans .

Environmental Flow Needs (EFN): Protecting Environmental Flow Needs in a stream means maintaining the water – volume and timing – needed to support the life stages of fish populations and aquatic ecosystem function. Considering Environmental Flow Needs in allocation decisions should reduce pressure on aquatic ecosystems, increase resilience to climate change and help avoid potential conflicts with the federal *Fisheries Act*.

Orders: Orders are issued by the Comptroller of Water Rights, a Regional Water Manager, or an engineer/geoscientist when remedial action is required to enforce licences or approvals, prevent or address unauthorized activities with potential to impact the environment, address issues of public safety, or protect property and water rights.

Storage: Storage allows a licensee to mitigate the impacts of low water flows, which could be due to seasonally low stream flows or a relatively junior priority on a highly-used water source. Storage provides a licensee with the ability to augment their water supply during periods of low water flow.

Water Objectives: It is proposed that Water Objectives would qualitatively describe the desired condition for water quality, water quantity and aquatic ecosystem health to support consistency in the consideration of water in decision-making across the natural resource sectors.

Water Sustainability Plans: Watershed-level planning could help address issues such as conflicts between water users, risks to water supply and water quality, as well as risks to aquatic ecosystem health through a collaborative public process.

2.3.7 Measure and Report

Measuring and Reporting

Understanding water use and availability in a watershed is critical for the sustainable management of water and the goods and services it provides. Under Section 88 (Powers of engineers and officers) of the *Water Act*, individual licensees can be ordered to measure, record and report actual water diversion or extraction. The Act allows the CWR, a RWM or an engineer to require the keeping of specific records and can require that the records be produced for inspection when requested. More often, these decision-makers use Section 22.01 (Beneficial use declaration) to require that a licensee submit a Beneficial Use Declaration containing information about water use.

Short-term approval holders under Section 8 of the *Water Act* (Short-term use of water) are generally not required to measure and report their actual water use, except for short-term use approvals issued by the Oil and Gas Commission or as required to by the CWR, a RWM or an engineer.

Without the information about water use obtained through regular measuring and reporting by users, it is difficult to assess the impact of water use on local water sources or to measure compliance with the quantity of water authorized in a licence or short-term use approval.

What we heard

- There is support for requirements for users to measure and report their use.
- Support for the measuring requirements was particularly strong where large volumes of water are used.
- There is concern that metering and implementing higher irrigation efficiency will increase costs for the agriculture sector to the extent that they will no longer be able to compete.
- Users would welcome flexible and practical ways of measuring water use.

Proposal

It is proposed that the WSA would enable the development of a regulation requiring larger water users (e.g., 250m^3 or more per day) to measure, record and report actual water use and related information on a more comprehensive and consistent basis. This would support compliance verification with licensed water volumes and promote water use efficiency. Obtaining information about actual water use would help in assessing sustainability and in determining whether a Water Sustainability Plan may be warranted (if the circumstances are serious enough).

It is proposed that a measuring and reporting regulation could, for example:

- Identify who (e.g., classes or groups of licences) would be required to install and operate measuring or testing devices and report measurements of or test ground or surface water that is diverted, extracted, stored or used
- Prescribe what would be required to be measured, acceptable measuring methods and accuracy of measurement
- Establish measuring, recording and reporting requirements for water use (quantity diverted or extracted, used or stored) and in some cases, related parameters like water level, flow rate, reservoir storage, basic water quality (e.g., total dissolved solids or salinity) or water temperature
- Specify the frequency and period of reporting (e.g., monthly readings reported annually, for each calendar year), timeframe for reporting (e.g., annually, within 90 days), content of the report (e.g., quantity, volume and/or format of reporting
- Require that a qualified person be retained to take measurements from a well
- Define the transition period for water users to begin measuring and reporting

It is also proposed that measuring and reporting requirements may be modified under an area-based regulation, for example, to include licensees who would normally be exempt. Area-based regulation could also require users to measure and report in a different method, form or frequency.

2.3.8 Enable a Range of Governance Approaches

Governance

Water governance includes the laws and regulations, agencies and institutions as well as the policies and procedures used to make decisions and manage water. Governance also includes the way science, community and traditional knowledge and other sources of information inform laws, policies and decisions. Watershed governance would build on water governance to potentially include activities (and sectors) within a watershed and their impacts on watershed function (i.e., both land and water).

B.C.'s current water governance model is primarily centralized within the provincial government with limited powers to distribute roles and responsibilities to others. At the same time, interest in exploring alternative approaches to water and watershed governance is growing in B.C. A number of groups have a wide range of interests in participating in activities such as watershed planning, community water quality monitoring and watershed restoration.

While there are a number of governance tools within the current *Water Act*, there are also gaps. For example, under Section 82 of the *Water Act* (Ground water advisory board), advisory groups can only be created for groundwater – with no equivalent provision for surface water boards. New mechanisms and tools would help support a wider range of governance approaches in B.C.

What we heard

- There is mixed response regarding the preferred approach and whether governance should be centralized, shared, or delegated.
- One size doesn't fit all of B.C.
- A range of tools is needed to respond to the variety of local needs.
- There should be strong provincial oversight and a clear and consistent regulatory framework.

Proposal

While the WSA is only one part of B.C.'s water governance framework, it is expected to influence and change many aspects of the framework (see Box 14). For example, there would be new decisions, new considerations in decision-making as well as shifts in the role of decision-makers within the framework to focus more on helping ensure water sustainability for the future for all users.

It is proposed that the WSA would enable new water management decisions to be made (e.g., regulation of groundwater use) and require that new considerations be taken into account when making decisions (e.g., Water Objectives and Environmental Flow Needs). The WSA would also enable shifts in the way planning could be undertaken.

In some cases there could be interest in re-evaluating who the decision-makers are and who might be best able to support the decision-making processes. It is proposed that the WSA would enable a framework that would support a range of approaches (e.g., different roles, responsibilities, accountabilities) for participation by other levels of government, individuals and organizations in water and watershed governance in B.C., and including, for example:

- The potential to enable the delegation and/or sharing of responsibility and accountability for decisions (e.g., allow for delegation of some water management activities or decisions to people or agencies outside the provincial government or more than one person or agency with the authority to exercise the same powers); and
- The opportunity to create advisory groups to advise on a range of topics related to both surface water and groundwater (e.g., expand the current provisions in Section 82 (Ground water advisory board) of the *Water Act*).

Water Sustainability Plans could also support better governance. These Plans could build on the existing Water Management Plans with additional options to improve governance incorporated.

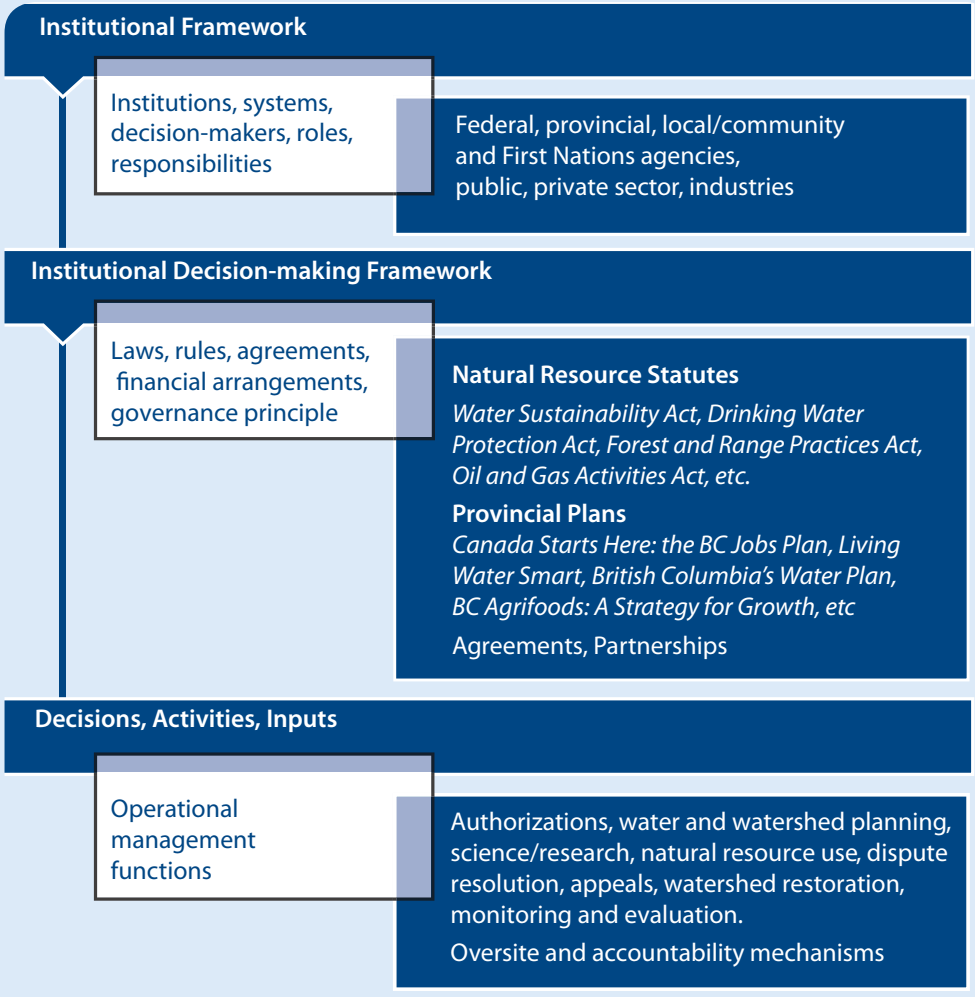
Ultimate accountability for environmental protection would remain with the provincial government. It would continue to establish and coordinate laws, rules, agreements and financial arrangements, including setting provincial objectives and outcomes. It would also be responsible for deciding the institutions, systems and roles for any delegated responsibilities.

BOX FOURTEEN

Water and Watershed Governance

The *Water Sustainability Act* would be one element of water and watershed governance in B.C. The governance framework for water and watersheds in B.C. includes a number of statutory and non-statutory elements that must work together. The *Water Sustainability Act* would be part of the tool-box which could help create and implement a governance model for B.C., as well as help respond to the range of regional needs in B.C.

The governance framework is comprised of the following:



Work on a water governance framework for B.C. is needed and continues. Extensive research and work has already been undertaken on water governance and ideas and expectations vary across the province. The Province would look to strengthen governance while the new legislation was coming into force by:

- Ensuring that the fundamental conditions around decision-making would help meet the key outcomes associated with the WSA; and
- Developing a provincial water governance framework (including the roles, responsibilities, activities and accountabilities) that can accommodate the range of expectations across the province (without further fragmenting governance) and testing different approaches.

The provincial government understands that expectations for alternative governance approaches are rising. Before adopting an alternative approach to governance, roles, responsibilities, activities and accountabilities would need to be defined, a sustainable funding model identified and a pathway set for continuous improvement. Box 14 provides some additional information on governance.

2.3.9 Implementing the Water Sustainability Act

New Enforcement Tools

Currently under the *Water Act*, enforcement tools include regulatory orders, prosecutions (through the court system) and ticketable offences. Alternative enforcement approaches are also available that could be more appropriate for managing non-compliance. These could be expanded to include, for example, Administrative Monetary Penalties (similar to fines but imposed through an administrative process) and compliance agreements. Restorative justice programs could also be used to deal with non-compliance.

Proposal

It is proposed that the WSA would enable a broader range of compliance and enforcement tools than are currently available under the *Water Act,* for example, Administrative Monetary Penalties and compliance agreements. These approaches would offer alternatives to ticketing and a full prosecution. It is also proposed that the WSA would allow regulations that would set out the specifics of the Administrative Monetary Penalty process.

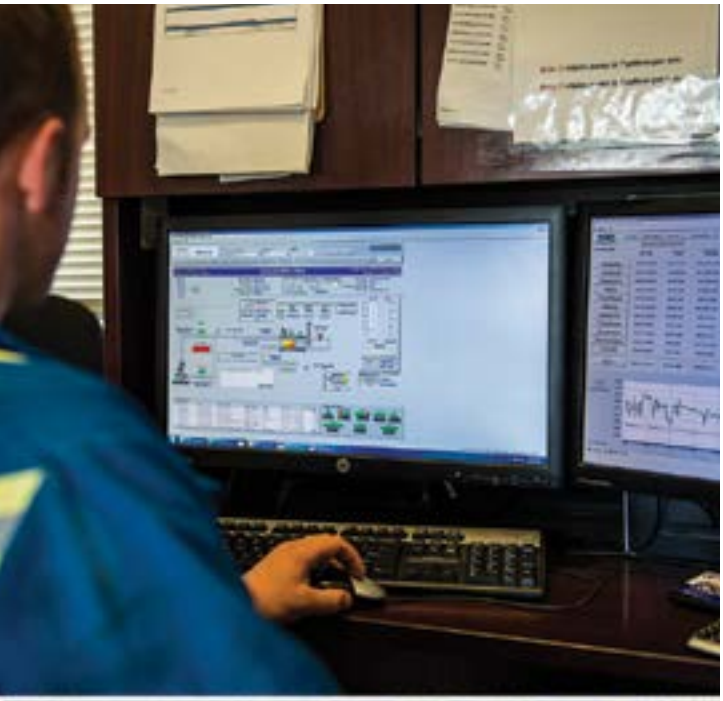
As well, it is proposed that the WSA would provide that, upon conviction for an offence under the WSA, the court could increase the amount of a fine by the amount estimated as equal to the amount acquired by or accrued to the person as a result of the offence.

Regulations

In general, most legislation provides for the development of general and specific powers of regulation. While a number of regulation-making powers are identified in the sections above, the need for this type of authority is generally identified during the legislative drafting process.

Proposal

It is proposed that the WSA would provide for both general and specific regulation making powers. A number of regulations would need to be developed in order to fully implement the WSA. Some key regulations would be brought into force earlier than others. These could include regulations for managing and regulating groundwater use and requirements for measuring and reporting. Other regulations would be delayed in their development and implementation and brought into force at a later date. Overall, it is proposed that implementation of different provisions of the WSA would be phased in over time.



Part 3

Water Fees and Rentals

While most Canadian jurisdictions price water differently, the prices are not generally high enough to encourage users to reduce water consumption and to use it efficiently. Effective water pricing can have a number of benefits, including improving conservation and efficiency, and encouraging innovation. It can also help regulate water demand and defray costs[15].

15 Rivers, N. (2013), Economic modeling of water pricing strategies, GWF Discussion Paper 1335, Global Water Forum, Canberra, Australia, found at www.globalwaterforum.org/2013/09/09/economic---modeling---of---water---pricing---strategies/; Sustainability Prosperity (2011), Economic Instruments for Water Management in Canada: Case Studies and Barriers to Implementation, found at www.blue-economy.ca/sites/default/files/reports/resource/2460_SP_Water_web.pdf.

3.1 The Current Approach to Water Pricing in B.C.

In B.C., water licensees and short-term use approval holders receive two key benefits:

- An individual benefit from access to water through their licence or approval; and
- A general benefit from overall water management programs (e.g., licensing system and the protection of rights, water planning).

The costs associated with these benefits include both administrative and management costs in areas such as water allocation, dam safety and regulation of water use (e.g., during drought and scarcity). *The Water Act* establishes that application fees and annual water rentals will be applied to all water use authorizations. However, current pricing structures and levels (described in Part 3 of the Water Regulation) do not fully account for these costs.

Application fees are required for an application for a new water licence, an application to amend an existing licence, a short-term use approval and an approval to make changes in and about a stream. Fees are typically based on the quantity of water applied for and the purpose of its use. For short-term water use approvals, the application fee also includes a water use purpose charge. Fees are not generally applied to provincial or federal ministries, or First Nations use on Reserve land (annual water rentals are the same). Short-term water use approvals processed by the BC Oil and Gas Commission are also exempt from paying fees.

Licensees also pay an annual water rental, typically based on their allocated volume (rather than their actual water use).

Local governments are billed on actual water use as many of them have an allocated volume greater than the volume actually used to allow for future community growth. For power purpose licences, the amount of energy produced is also factored into the water rental calculation and may be adjusted annually based on the consumer price index. A penalty charge (a percentage of the overdue water rental) is applied when the annual water licence rent is not paid. A water licence may also be cancelled if outstanding charges are not paid.

Currently Section 23 of the *Water Act* (Suspension and cancellation of rights and licences) allows the CWR or a RWM to suspend or cancel a water licence for failure by the licensee, for three successive years, to pay the annual rent. The *Fish Protection Act* allows cancellation due to non-payment after one year; however, this provision is not in force. The decision to suspend or cancel the licence for non-payment under this provision would not be appealable. It is proposed that the pro-

visions of the *Fish Protection Act* that are not in force would be brought into force through the WSA so that the decision-maker (e.g., CWR, RWM) would have the discretion to suspend and cancel a licence if the licensee failed to pay rental within one year of being billed.

The current fees and rentals for surface water are summarized in Table 3.

Table 3. Current Water Fees and Rentals

Sector	Application Fee ($)	Minimum Annual Rental ($)	Rental ($/1000m^3)
Agriculture – ponds	150	25	-
Agriculture – all other activities	100-400 (depending on area irrigated and associated industrial purposes)	25	0.60
Aquaculture – fish hatcheries	150	100	0.08
Conservation and Land Improvement – use of water	150	25	0.01
Conservation and Land Improvement – all other activities		25	-
Domestic – swimming pools	150	25	-
Domestic – all other activities	100 (household) 150 (associated industrial purposes)	25	0.60
Industrial/Commercial – dewatering, fire protection, overburden disposal, river improvement, sediment control	500-10,000 (depending on activity)	100	-
Industrial/Commercial – all other activities		100	0.85

Table 3. Current Water Fees and Rentals *CONTINUED*

Sector	Application Fee ($)	Minimum Annual Rental ($)	Rental ($/1000m³)
Mining and Petroleum – placer mining	500-5,000 (depending on activity)	100	0.45
Mining and Petroleum – hydraulic mining, hydraulicking		100	0.065
Mining and Petroleum – all other activities		100	1.10
Storage	150-2,000 (depending on volume stored)	25	0.01
Waterworks	500-10,000 (depending on conveyer)	100	1.10
Residential Power	100	100	0.01
Commercial Power (2013 rates, adjusted annually) ■ Construction capacity for each kilowatt ■ Authorized capacity for each kilowatt (other than construction capacity) ■ Output, each megawatt-hour ■ Minimum annual rental, each licence	5,000	 0.344 2.146 1.289 104.87	-

Table 3. Current Water Fees and Rentals *CONTINUED*

Sector	Application Fee ($)	Minimum Annual Rental ($)	Rental ($/1000m³)
General Power	5,000 (<20MW)		-
■ Construction capacity for each kilowatt	10,000 (>20MW)	0.429	
■ Authorized capacity for each kilowatt (other than construction capacity)		4.295	
■ Output, for each megawatt-hour/year, up to a total of 160,000 megawatt-hours, from all power developments operated by the same licensee		1.289	
■ Output, for each megawatt-hour/year, exceeding 160,000 megawatt-hours up to a total of 3,000,000 megawatt-hours		6.012	
■ Output for each additional mega-watt-hour/year exceeding 3,000,000 megawatt-hours		7.233	
■ Minimum annual rental, each licence		209.74	
Permits to Occupy Crown Land – occupied by a dam	100-2,000 (depending on area occupied)	50	120.00/hectare
Permits to Occupy Crown Land – flooded or occupied by other works		50.00	7.50/hectare
Approvals, Stream Changes and Short Term Use	Changes in/about a stream - 130 Short-term Use Approval - as set out in Part 1 of the Water Tariff, (as shown above) and the annual rent for the proposed use - as set out in Part 2 of the Water Tariff	-	-

3.2 Water Pricing and Implementation of the *Water Sustainability Act*

The implementation of the WSA will entail new costs for both government and users. While some users have already implemented some of the new requirements (e.g., detailed Environmental Flow Need assessments) to be included in the WSA, the requirements will be new for other users, possibly resulting in new costs. It is proposed that the WSA would be phased in over time. Implementation approaches would focus initially on filling the gaps in the *Water Act* and meeting Living Water Smart commitments.

The provincial government is contemplating changes to the structure and rates for water fees and rentals. It is likely that rates will be increased so as to help improve services to water users, better support sustainable water management, improve program cost recovery and enable implementation of the WSA. Currently annual water rentals do not cover the costs for government to administer and manage the non water power water licences and short-term use approvals. Changes to water power pricing are not contemplated at this time.

There are two key issues to consider when pricing water for users (i.e., developing a pricing structure and defining the levels or rates):

- The types of costs to be included, for example, the costs to administer a water licence; and
- What the fees are based on, for example, the purpose or impact of water use (e.g., consumptive versus non-consumptive use).

When selecting the pricing approach, there are a number of principles to consider:

- Simplicity, fairness and equity: Is the approach easy to understand and is it fair to users?
- Impact: What will be the impact to users and the differences across sectors? Is the impact reasonable? How do the structure and the rates influence competitiveness?
- Adaptability: How responsive will the approach be to any future changes that may need to be made?
- Resource management: How will the approach influence the way the resource is managed? Will the new revenue be available for managing the resource? Will there be a change in the users' behaviour that will cause them to better value and therefore manage the resource?

- Perpetuation of current problems: Are there problems needing fixing which warrant changes to structure and/or the rates?
- Cost/revenue: What will government costs and revenues be? What will the financial impact to users be?

While no specific approach is currently proposed by government, options could be considered that either:

- Keep the current pricing structure but changes the rates; or
- Change both the pricing structure and the rates.

Further work is required to determine how to move forward on the water pricing structure and rates for B.C. Any changes to the water fee and rental structure and rates will require a change to the Water Regulation. Regardless of the approach chosen for water fees and rentals, the level of cost recovery as well as the identified principles must be key considerations.

Part 4

Implications – Costs and Benefits

Water is critical to every part of daily life – for household and recreational uses, for a healthy and diverse environment, and for strong and growing communities. It is fundamental to B.C.'s natural resource industry and key to the future of forestry, mining, natural gas, agriculture and tourism sectors, and the jobs and communities they support. Because of this, it is anticipated that the implementation of new water legislation will entail both benefits and costs.

4.1 Benefits of Implementing the WSA

As currently proposed, the WSA would improve the protection of water resources and aquatic ecosystems while balancing the needs of water users. It would also address a number of issues related to the current *Water Act*, such as the need to regulate groundwater and protect water for environmental needs.

Many of the new requirements could be scaled to reflect the type or volume of use. For example, many domestic groundwater users would not be required to obtain a licence in all circumstances. Many smaller surface and groundwater users would not be required to measure and report, unless required to do so under an area-based regulation.

Implementing the WSA could help increase certainty about future water supplies for individuals and businesses, especially in areas of intensive water use and where there are chronic water scarcity problems. The WSA would also clarify the rules for groundwater access and help level the playing field for businesses relying on it.

4.2 Costs to Users

It is expected that implementation of the WSA would result in a number of new or modified costs for the provincial government and for both groundwater and surface water users. For example, there would be new costs to large volume groundwater users to obtain a water licence and for water fees and rentals. Groundwater users could potentially see increased costs for the development of the supply and to assess impacts on other users. Both groundwater and surface water users may incur costs associated with new requirements for measuring and reporting water use and to implement water use efficiency measures.

4.3 The Cost of Inaction

The cost of inaction – that is, of not proceeding with the WSA – could be significantly greater over the long-term than the cost of taking action. For example, failure to protect the health of streams in times of scarcity could result in irreversible harm to the environment; failure to regulate groundwater extraction and use could threaten aquifers; and failure to encourage efficiency and conservation could lead to increased conflict as users compete for limited resources. In the longer term, not proceeding with the WSA could leave the province unprepared for future challenges, such as the impacts of climate change.

Failure to act could also have significant economic impacts. Access to a secure supply of water has become a key factor in business decisions, including new investments and the expansion of existing operations. Communities are already looking for secure access to surface and groundwater sources to support future growth opportunities. Similarly, industries such as the oil and gas sector are seeking secure long-term access to water to plan for future development.

Table 4 summarizes the potential benefits and costs of implementing the WSA.

Table 4. Summary of Potential Benefits and Potential Costs of WSA Implementation

Potential Benefits	Potential Costs
Protect Stream Health and Aquatic Environment	
■ Improved long-term protection of aquatic ecosystem health and other environmental values ■ Recognition of water requirements for aquatic ecosystems and species ■ Improved consistency and transparency around how Enivronmental Flow Needs are considered in allocation decisions across B.C. ■ Greater clarity on how much water is available for other social and commercial purposes and to inform future water allocation decisions	■ Increased application costs to users (in particular for large projects) resulting from the requirement to provide additional information and where necessary, complete detailed assessments ■ Increased costs to government to process applications ■ Possibly fewer water licences or approvals issued ■ More stringent terms and conditions associated with authorizations, including requirements for development of storage ■ Increased costs to government for additional review and compliance and enforcement
Consider Water in Land-Use Decisions	
Water Objectives ■ Provides common water objectives for use across all natural resource sectors and supports streamlining and integration ■ Provides decision-makers and proponents with clarity and guidance regarding water quality, water quantity, and aquatic ecosystem health ■ Improves consistency and transparency in decision-making (e.g., identifies the water sustainability factors that are considered in decision-making) ■ Integration with the cumulative effects and environmental mitigation policies will streamline approach for both proponents and government	■ Increased costs to users (in particular for large projects) to provide additional information to support the assessment of their application against objectives ■ Increased costs for project development (e.g., mitigation may be required to meet objectives) ■ Increased costs to government to develop and implement (including training) the objectives framework

Table 4. Summary of Potential Benefits and Potential Costs of WSA Implementation *CONTINUED*

Potential Benefits	Potential Costs
Water Sustainability Plans ■ Gives the ability to consider all land and water activities within the plan area (e.g., oil and gas, forestry, agriculture, municipal use) ■ Enables adaptation to a changing water cycle, increased drought risk, and cumulative pressures on water resources ■ Provides opportunities for public involvement and fosters local, broadly supported, community-driven solutions ■ Improves certainty and clarification of the rules, roles, and responsibilities within the plan area ■ Helps address chronic water scarcity and conflict areas among competing water uses and users ■ Improves knowledge about water potentially resulting in improved access to water (e.g., more secure) and social licence to operate (e.g., industries)	■ Participation could be time and resource-intensive ■ Plan implementation may increase costs for users ■ May delay water licensing decisions pending the outcome of the planning process ■ May affect existing rights (e.g., plan may propose changes in existing allocations and/or the need for mitigation measures and compensation measures related to impacts) ■ Costs to government to support plan development and implementation ■ Ongoing program management to ensure plans are completed will be necessary to ensure their success
Regulate Groundwater Use ■ Greater security of access to groundwater supply and certainty about long-term use ■ More effective management and allocation of water resources in areas of connectivity between ground and surface water ■ Improved aquatic ecosystem health on groundwater fed streams ■ Improved protection for groundwater users through the licensing process and subsequent management of water rights ■ More consistent management of ground and surface water resulting in reduced conflict between, and improved equity among users ■ Improved ability to address changes to water quantity, water quality and aquatic ecosystems	■ Groundwater licensees will be required to pay application fees and rentals equivalent to surface water licensees ■ Costs to government to review and adjudicate groundwater applications and administer licences ■ Cost to government for compliance and enforcement activities ■ New and expanded requirements (e.g., drilling authorizations) may delay work and increase costs. ■ Cost (time) to obtain a drilling authorization

Table 4. Summary of Potential Benefits and Potential Costs of WSA Implementation *CONTINUED*

Potential Benefits	Potential Costs
Regulate During Scarcity	
■ Improved effectiveness and transparency in the protection of stream health (e.g., regulate to protect Critical Environmental Flows) ■ Protection of essential household use for drinking water, food preparation, and sanitation ■ Improved certainty and security resulting from clearer processes when managing water rights during drought and scarcity	■ Regulation of water use may be more frequent and longer in duration to protect Critical Environmental Flows and may increase costs and/or reduce revenues for users ■ Costs to government to regulate more frequently ■ May affect existing rights during periods of regulation (e.g., if licensees are regulated more frequently to protect critical environmental flows)
Improve Security, Water Use Efficiency, and Conservation	
■ Incentives and disincentives could be developed to influence the adoption of more efficient technologies and demand management practices ■ Provides flexibility and adaptability in how conservation and efficiency targets are achieved ■ Water conservation is enhanced ■ Revenue for financing water management programs is generated ■ Long-term costs for users may be reduced with more efficient water use	■ Future financial implications (costs or rebates) to users would depend on the nature of regulations and any program developed
Agricultural Water Reserves ■ Secures access to water for agricultural use on agricultural lands ■ Helps improve food security and the viability of the agricultural industry ■ Improves the preservation of existing licensed agricultural water uses ■ Approval through a Water Sustainability Plan gives social support for Reserves	■ May restrict opportunities for future water uses unrelated to agriculture, as well as their economic development opportunities

Part 5

Overview of Previous Engagement Response

An overview of comments submitted to the Ministry of Environment in 2010 and 2011 during the first two stages of the *Water Act* modernization engagement process is provided below. The overview summarizes the key themes expressed by the public, First Nations organizations and stakeholder groups; specific comments have not all been captured. A detailed Report on Engagement and complete list of submissions received to date are available on the *Water Sustainability Act* website.

5.1 Overview of Engagement Comments

Thousands of individuals, First Nations and stakeholders provided comments on *Water Act* modernization during 2010 and 2011. Major themes included the following:

- **Develop clear standards, processes, responsibilities and expectations for managing B.C.'s water.** There is strong support for ensuring that the WSA is clear in its requirements and provides certainty and security for users. There is mixed support for the continued use of FITFIR
- **Regulate groundwater extraction and use.** There is strong support for the regulation of groundwater in B.C. Recognition of the important connection between surface and groundwater is a recurring theme in many submissions
- **Improve current water governance arrangements.** While there is strong support for improving water governance in B.C., there is no clear preference for a particular approach. Most respondents support collaboration and participation in decision processes. Many submissions acknowledge that the specific approach adopted will need to reflect the local conditions, interests, water management issues and capacity
- **Proactively protect drinking water, food production, clean energy and ecological health.** Respondents support a water allocation system that prioritizes drinking water protection, aquatic ecosystem health, food production and clean energy production. There was strong support for environmental flow and stream health standards while promoting efficiencies and recognizing non-consumptive water use in industry
- **Recognize the land-water connection.** Respondents highlighted the importance of the land-water interrelationship and how land use practices can affect water quality, water quantity and timing of flow. There is substantial support for improving the protection of watershed health in land use and resource development decisions and practices
- **Balance ecological protection with economic priorities.** Many respondents call for a balance between ecological protection and economic development. In some cases, respondents call for more protection of water from the impacts of economic development. Clarity and certainty for all water users should be supported by adaptive management standards and effective and enforceable rules, integrated with legislation and fee equity

- **First Nations interests must be respected.** Water is of utmost importance and of high cultural and economic value to First Nations. First Nations maintain that the *Water Act* Modernization process does not meet the standards set in the New Relationship nor constitute meaningful consultation. These submissions maintained that further, continued dialogue is required

5.2 Summary of Comments from the Public, Stakeholders and First Nations

Academia and Education

- Government must protect B.C.'s water resources at an ecosystem level. A modernized *Water Act* must require all parties to work together to establish clear environmental flow requirements and protect aquatic environments. Once standards are set, legislation to protect them must be enforced without exception
- Groundwater legislation is required, but should occur within a framework that provides for appropriate thresholds with respect to the larger ecosystem. Submissions called for clear, well-defined standards that are collaboratively designed to reduce impacts across the ecosystem and mirror the standards for surface water
- A watershed governance framework should permit those who are affected at a local scale to participate in decision-making. A framework that indicates which decisions and authorities the provincial government may share or delegate and what will remain with the government should be part of the WSA
- Legislation should establish new Watershed Agencies as legal entities. Watershed Agencies must have a clear mandate, be transparent and be accountable

Agriculture

- Water is an essential element for agriculture and food production. Access to water for agriculture and food security must be a priority. Security of water rights for agriculture and FITFIR must be maintained
- Water should not be treated as a commodity

- Metering and water efficient irrigation will increase costs for the agriculture sector to the extent that they will no longer be able to compete
- The creation of agricultural water reserves, similar to agricultural land reserves, is supported where water use monitoring, clear provisions for water use and effective compliance are practiced in close collaboration with industry
- Incentives should be made available for implementing new technology,stewardship and conservation measures
- Provincially-owned or managed water storage infrastructure could help mitigate water supply shortages for all water users, without relying on agriculture to provide Critical Environmental Flows when necessary. Government support is needed to develop storage, recognize the ecosystem and amenity values that need protection, and invest in efficient irrigation
- Clarity is required around how the province intends to regulate livestock watering practices. Historical water use patterns for in-stream watering need to be recognized and, if off-stream watering is required, incentives should be provided
- More opportunities for input and flexibility to determine how water is managed during times of drought or low flow are needed

Business Organizations

- Businesses and investors require regulatory certainty and predictability to ensure competitiveness. Water is a competitive advantage in B.C. and additional regulation could begin to impinge upon this advantage
- There is support for financial measures to increase efficiencies. Efficiency measures that protect current resources are preferred over new regulation
- Ecosystem-level protection is key to ensuring access to clean water for all purposes
- Standards should be enforceable but allow for collaborative and innovative improvements
- Ensuring certainty for all water users without compromising stream health should be a priority for *Water Act* Modernization
- Water for food production, drinking and ecosystems protection must be the top priorities of any allocation system
- A centralized approach for governance is preferred, one that features strong provincial oversight and policy direction for water management decisions

Environmental Non-Government Organizations

- There is strong support for key *Water Act* Modernization components, including ecosystem management, maintaining instream flows and regulation of groundwater extraction and use
- There is support for managing water from a watershed perspective (streams, wetlands and groundwater)
- Environmental Flow Needs must be legislated and defined by standards, applicable provincially and be prioritized above all non-essential human uses during times of shortage
- NGOs support science-based decision-making and adhering to the precautionary principle where data is unavailable or unreliable
- The regulation of groundwater is strongly supported. Respondents suggested that the methods used for assessing and regulating the cumulative effects of multiple (including small) wells should be improved
- Conservation and efficiency measures are supported for all areas of B.C., as are incentives and rewards for such measures
- There is support for a shared or delegated approach to water governance guided by provincial standards. The current approach is fragmented, resulting in a need to consolidate legislation into a single over-arching *Water Act*.
- There is mixed support for delegating authority for resource decisions to local governments, partner groups or other regional agencies due to the lack of oversight and the potential for fragmentation

Forestry

- There is support for modernizing the *Water Act* and protecting ecosystems.
- The *Forest and Range Practices Act* provides sufficient protection for water. Any changes to the *Water Act* must be consistent with the *Forest and Range Practices Act* and should not impose any additional requirements on the industry
- The professional-reliance and results-based framework of the *Forest and Range Practices Act* is a good legislative model
- Avoid duplication with existing legislation and ensure that provisions are complementary
- A strong central governance structure is preferred. There is concern about a lack of clarity and certainty with shared and delegated approaches

Water Power

- The *Water Act* Modernization process must continue to support the government's goal of achieving energy self-sufficiency
- Hydropower developments require significant amounts of water to operate Developers need security for investment and a clear, transparent licensing process
- Non-consumptive use should be distinguished from consumptive use activities
- Water allocation plans are often expensive and time-consuming. Rigidity in requiring such plans does not allow any flexibility for decisions based on site-specific conditions, changing circumstances or scientifically-justified rationale
- It is important to align tenures and processes to support efficient project development
- While there are benefits to sharing and delegating roles for water stewardship there are also potential conflicts on issues or projects that face opposition but could serve the greater public good

Local Government

- It is very important to be proactive before there is any decline in watershed health
- There is support for more involvement in planning, decision-making and collaborative approaches. In some regions, greater responsibility for some water management and planning decisions is necessary. In others, an advisory role supporting a centralized approach to decision-making is preferred
- Without new resources and capacity building, there is concern that downloading could result from alternative governance approaches. There is also concern for a potential increase in costs. These should be mitigated or funded by the province as much as possible
- There is concern that all levels of government are insufficiently resourced to enforce the laws that are already in place. It was stressed that sufficient support is crucial to implementing a modernized *Water Act*
- Watersheds, in particular those that are the source of drinking water, need to be protected
- Watershed-level assessment of available water resources should be completed prior to the approval of any new licences. Environmental Flow Needs

should be determined, and elements of human consumption should be considered. Climate change and adaptation should also be considered

- Stream health, ecosystems and groundwater must be protected, as they add to a community's well-being and resilience
- There is support for the regulation of groundwater extraction and use. Most, if not all, users should be licensed and existing users should be transitioned into the new system
- There is mixed opinion on FITFIR: there is interest in both priority of use and FITFIR. Regardless of rights allocation, water serving communities must be a priority in times of scarcity
- Northern communities in particular expressed concern about the impacts of industry and resource extraction, especially regarding the amount of water required. Southern and Island communities focused on domestic and agricultural conservation, impacts of climate change on ecosystems and responding to droughts

Partnership Organizations

- Current issues including scarcity, new trends in governance, climate change, cumulative effects and watershed management, need to be considered within a modernized *Water Act*
- There is support for the inclusion of the Public Trust in the WSA.
- Water for food production, drinking and ecosystems must be the top priority for any allocation system
- Environmental Flow Needs standards are supported more than guidelines.
- More stringent thresholds for the regulation of groundwater extraction and use are preferred. The regulation of hydrofracturing (for groundwater extraction) is also preferred
- There is support for the development of storage by the province
- Efficiency measures that protect current resources are strongly preferred.
- Wetlands are a vital component of B.C.'s water resources and require urgent protection
- Collaborative, precautionary approaches to ecosystem management are required
- Collaborative processes are supported, as are alternative governance arrangements; however, these must be accompanied by resources and capacity building

- Effective communication is needed from all who manage water. The alignment of water policies is also critical

Professional Associations

- Government investment in water management, monitoring, regulation, data and information, compliance and enforcement will help reduce adverse impacts to water in the future
- Stringent limits should be placed on land use and resource extraction activities, in particular in watersheds that are a source of drinking water
- Surface and groundwater should be managed as one resource
- All groundwater withdrawals must be licensed, especially the commercial and industrial uses of groundwater
- First Nations social and cultural practices should be included in decision-making
- Any increases in fees and rentals should not become a tax
- The modernized *Water Act* should take precedence over other legislation that addresses water

Oil, Gas and Mining

- Ongoing access to clean and plentiful water is essential for future growth. Without sustainable water management, development may be limited in the future because geothermal, mining and oil and gas developments each require significant amounts of water for their operations
- A clear and transparent licensing process is required to ensure a positive investment climate and support for substantial infrastructure investments. This process, in which government maintains a final say, should allow for stakeholder input and balance among environmental and economic concerns
- Saline groundwater use must be addressed differently than freshwater groundwater use under the modernized *Water Act*
- There was concern that costs would unnecessarily be downloaded to industry; increasing costs could erode competitive advantages
- Use place-based approaches for stream health assessments and planning in particular. One size doesn't fit all
- The mining sector would like to see groundwater regulated in problem areas only. Wells (e.g., geotechnical wells) currently regulated under the *Mines*

Act should not be regulated under the WSA. The sector also has concerns about the use of economic instruments, in particular the use of fees and other tools that increase costs

- The oil and gas sector stated that fees/pricing are acceptable if applied consistently across all sectors, and that licences should be reviewed more frequently
- FITFIR should be maintained (although one respondent supported proportional sharing)
- A modernized *Water Act* must work cooperatively with and align with other agencies and other legislation. There was concern about over-regulation where there are already sufficient provisions in place
- There is support for collaborative and inclusive processes. However, these industries support maintaining a centralized approach to governance. Any governance model should be supported with resources. The oil and gas industry would like to see the Oil and Gas Commission as the single regulator for water
- Government is responsible for the governance of provincial resources and allocating appropriate funds to manage water resources. Funding solutions must be equitable for all resource users and not unduly penalize specific water users or specific uses, nor create a competitive disadvantage for investment in B.C.

Water Industry

- The industry supports the use of environmental flow guidelines, which are more flexible than standards
- Sector-specific codes of practice should be developed to encourage efficient infrastructure and practices. The use of incentives and economic instruments should be used to encourage water efficiency
- Water quality is a concern. Stronger dumping prohibitions are supported
- Groundwater withdrawal maximums should be based on site-specific conditions. All commercial, industrial, agricultural and municipal extractions should require a hydrogeological study to support the volume extraction requested
- Annual rentals should be a single flat rate and should support water management activities

- Use-specific reserves should be set aside only as a last resort
- Water governance should remain the responsibility of the Ministry of Environment

Individuals

- There is no support for water markets or for the commercialization or privatization of water
- The provincial government must protect B.C.'s water resources at an ecosystem level. Where science has yet to determine impacts on water resources, the precautionary principle should be employed
- Ecosystem-level protections are key to ensuring access to clean water for all purposes. Standards must be enforceable, but allow for collaborative and innovative improvements
- Water for basic human use must be protected. Water for food production, drinking and ecosystems protection must be the top priority of any allocation system
- All groundwater use must be regulated
- Water must be priced based on its value
- The ownership of water must be entrenched with the public
- A mix of governance approaches should be enabled. Public participation in decisions should be encouraged. We need a strong provincial framework to guide governance models

First Nations

- First Nations have concerns around constitutionally protected rights and title and question provincial ownership of water
- Water has the utmost importance and is of high spiritual and economic value to First Nations. As Indigenous Peoples, First Nations are intimately connected to their waters and water resources and believe they have an inherent and sacred stewardship obligation to responsibly manage and protect this resource. First Nations values must be reflected in the legislation
- First Nations maintain that the *Water Act* Modernization engagement process is not consultation and state a risk of legal action if the province does not fulfill its legal obligations. They consider the *Water Act* modernization process to be far too compressed, not allowing enough time to understand the proposals, prepare and participate

- First Nations assert that the Province has a duty to consult directly with the Nations on proposed decisions, including strategic level decisions
- Some First Nations have expressed a desire to co-manage water resources, including strategic engagement in planning and decision-making in the context of the New Relationship
- The current policy directions do not incorporate First Nations input. Policies must be developed with this input and must reflect that there are constitutionally protected Aboriginal title and rights, and treaty rights, in B.C. which give rise to First Nations governance and decision-making with regard to the lands and resources in their asserted traditional territories, based on their traditional knowledge
- Use of Traditional Ecological Knowledge should be put into legislation
- First Nations continue to seek a more inclusive government-to-government process
- The general intent of updating water governance is a necessary step – it provides an opportunity to ensure water governance is more appropriately contextualized and reflective of the changing legal and political landscape
- All existing licences should be subject to meeting Environmental Flow Needs

5.3 Government Response to Policy Suggestions

During the public engagement process, a number of the comments received suggested policies for inclusion in the *Water Sustainablity Act* or questioned policies that have been proposed. Many of these policies either were not included or have a lower profile in the *Water Sustainablity Act* than was suggested. A brief rationale follows:

Water Markets: Are they included?

No, water markets are not included in the *Water Sustainablity Act* . The public expressed a high level of concern about water markets early in 2011, when tradable permits were contemplated as a conservation measure only. The idea was to allow the short-term trading of water rights, not to privatize or deregulate water. Although water markets are emerging in a number of jurisdictions, government has no intention of enabling water markets in the *Water Sustainablity Act* .

Bulk Water Exports: Why are bulk water exports not in the *Water Sustainablity Act*?

A number of comments received during the engagement process expressed the desire to prohibit the removal of water in bulk out of the province. The *Water Protection Act*, in place since 1995, already prohibits bulk water exports from B.C. As this is a distinct piece of legislation addressing a key issue, the *Water Protection Act* would be retained and would work with the WSA to protect and manage water in B.C.

First in Time, First in Right

Why continue to use FITFIR and not an alternative approach like priority of use or proportionate reductions?

The costs of any new system or approach to regulation must be weighed against the benefits, and every system has its challenges. There are many benefits to retaining FITFIR:

- It is easy to understand and administer and does not require a ranking of uses which would change with time and could be highly subjective;
- Newer users come into the system knowing they have the lowest priority and may be cut off or required to rely on storage;
- The reliability of existing users' supply is not diminished when new uses are considered or added to the demands from a stream; and
- Senior licensees have the most secure access to water.

Analysis shows that when water is short, there are few differences across the different approaches (e.g., FITFIR, priority of use, proportionate reductions) in how users are regulated. The modifications to FITFIR under the *Water Sustainablity Act* (to allow for essential household use) should address many of its perceived shortcomings.

Environmental Flow Needs: Why are standards for EFNs not included in the *Water Sustainablity Act*?

The *Water Act* Modernization process considered standards (e.g., 10% of flow) and guidelines for Environmental Flow Needs. However, such a standard is not scientifically defensible, considering B.C.'s diverse hydrology and the lack of flow data, along with the coarseness of the EFN methodologies. A standardized process, developed in collaboration with federal and provincial fisheries and water allocation

staff, has also been informed through engagement with environmental NGOs and industries. The resulting EFN Policy provides a transparent process incorporating tools that suit the application's level of the risk: higher the risk, the more rigorous the information and analysis requirements. The process also includes an adaptive management approach whereby updated information and data are considered in each new decision.

Livestock Watering: How would the WSA address the security of livestock watering needs?

The WSA would provide for the security of the water supply for livestock watering in a number of ways. Water licences, which provide for the best security and certainty, may be acquired, either through new applications or amendment to existing licences. The authority to authorize livestock watering use such as under a Regulation will be carried forward from the *Water Act*. Additionally, the decision-maker (e.g., CWR, RWM) would be empowered to make allowances for livestock watering needs during times when water is scarce, regardless of priority date.

Sector Specific Measures: Why are there no measures to address water use in specific sectors (e.g., hydraulic fracturing, power production)?

In B.C. there are a number of statutes that govern operations in the natural resource sector (e.g., the *Forest and Range Practices Act* governs forest practices; the *Oil and Gas Activities Act* governs oil and gas development, etc). Some of these statutes have provisions that address water management. The focus of the WSA is to allocate water and help ensure its sustainability for all users. In many sectors, operators require either a water licence or short-term use approval to operate. The rules for water allocation and management must be fair, equitable and apply to all users regardless of sector. The rules to obtain a water licence or short-term use approval and the resulting obligations (e.g., report on beneficial use, measure and report) must be equally applied.

Food Security: Why does food security not have specific mention in the WSA?

Food security was highlighted as an important issue for many respondents. The WSA must provide balance for the range of issues and sectors operating in B.C. now, with flexibility to respond to new issues and potential new industries in the

future. There are a number of tools for consideration under the WSA that may support food security. For example:

- Agriculture Water Reserves would dedicate water for agriculture, in particular for land in the Agricultural Land Reserve.
- Water Sustainability Plans would help communities and regions plan for their watersheds and plan for water use around community and regional needs and priorities, including food security.

Public Trust Doctrine: Why not explicitly include the public trust doctrine in the *Water Sustainablity Act* ?

The public trust doctrine is not included in the proposed *Water Sustainablity Act*. The public trust doctrine is a legal principle from the United States that has not been consistently applied within the US. The duty created by the concept has been the subject of extensive academic debate in both the US and Canada. To date, there has been very limited testing of the public trust doctrine in Canada (e.g., aspects of the public trust doctrine have been used in Canada in the context of wildlife management in the Northwest Territories and the Yukon) and so its application under Canadian law remains unclear. Providing for the public trust doctrine in the *Water Sustainablity Act* at this time could create uncertainty and could also have implications beyond decisions involving water. Further work is needed before the public trust doctrine can be considered for application in B.C.

Watershed Agencies: Why are watershed agencies not formally recognized under the WSA?

Many respondents recommended that watershed agencies should be enabled under the WSA to implement alternative governance approaches. The *Water Sustainablity Act* would allow a range of governance approaches to be considered and might include:

- More than one person or agency with the same powers (e.g., both government and non-government organizations, including watershed agencies)
- The ability to establish advisory groups
- Public participation processes supporting Water Sustainability Plans

This approach allows a diverse range of people and groups – including watershed agencies – to be involved in water and watershed management while providing flexibility to respond to regional needs.

Discussion Paper Principles: Where are they and how were they used?

The Discussion Paper from the first stage of engagement identified eight principles (see page 5) focusing on sustainability, First Nations social and cultural practice, science informing policy and decision, integration, clarity, flexibility, incentives and roles and responsibilities. While a substantive number of comments were received about the principles – both on wording changes to the identified principles and new principles that should be considered – it was not intended that the principles be included in legislation. They were a tool to guide policy development. Discussions around them have played an important role in identifying and evaluating policy options.

Oversight: Why is third party oversight accountability not included in the WSA?

Some respondents called for new third party oversight of water management decisions and activities in B.C. Oversight and accountability are key principles of good governance. With the number of existing tools, another oversight body could add unnecessary bureaucracy. The existing tools that support good governance in B.C. include:

- The B.C. Ombudsperson
- The Auditor General of British Columbia;
- The CWR or RWM may hold a public inquiry (see Section 89 of the *Water Act*)
- The Environmental Appeal Board and to a lesser extent for water, the Forest Practices Board
- The Auditor General for Local Government

B.C.'s open government policy will increasingly give citizens access to government's information. For example, see the government's open information website.

Precautionary Principle: How is the precautionary principle addressed?

The precautionary principle states that if an action or policy may cause harm to the public or to the environment, the absence of evidence that the action or policy is harmful, is no reason not to prevent harm. A number of respondents identified that the precautionary principle should be a key component of new legislation.

Additionally, respondents identified the importance of being proactive in preventing harm or damage to watersheds. While the *Water Sustainablity Act* does not directly include the precautionary principle, a number of tools within the *Water Sustainablity Act* are intended to help water managers be proactive. These include:

- Orders (which already exist in the *Water Act*)
- Environmental Flow Needs and Critical Environmental Flows
- Water Objectives; and
- Area-based regulations

Appendix A: Jurisdiction and Legislation

Table A1. Legal Framework for Water in B.C.

Provincial	General Scope
Water Act	The Act provides for the allocation and management of surface water by authorizing issuance of water licences and approvals, creation of reserves, development of water management plans, and establishment of water user communities, and stream / stream channel protection from changes. In a planning area, groundwater development may be regulated by requiring drilling authorizations. The Act also sets out protective measures for wells and groundwater, and identifies offences and penalties.
Water Protection Act	The Act prohibits removal of water in bulk from the province and large-scale water transfers between watersheds.
Water Utility Act	The Act provides for regulating privately operated water systems servicing five or more persons or a corporation. Operators are subject to the same duties, responsibilities and restraints that are imposed on a public utility under the *Utilities Commission Act*.
Dike Maintenance Act	The Act establishes the inspector of dikes to supervise the construction and maintenance of dikes and operation of diking authorities.
Drainage, Ditch and Dikes Act	This Act establishes a scheme for diking districts, including their regulation in relation to dikes, ditches, and drainages throughout the province.
Fish Protection Act	The Act protects fish and fish habitat by prohibiting bank-to-bank dams on 17 protected rivers, authorizing designation of sensitive streams for fish sustainability, provincial directives for riparian area protection, and reduction in water use during periods of drought (temporary) or in accordance with a water management plan.
Drinking Water Protection Act	Administered by Local Health Authorities, the Act requires that domestic water supply systems must provide potable water (i.e., drinking water) and must have construction and operating permits. It also establishes qualification standards for operators and requirements for emergency response, water monitoring, water source and system assessments, a process for preparing a drinking water protection plan, and other protective measures for drinking water supplies.
Environmental Management Act	The Act regulates industrial and municipal waste discharge, pollution, hazardous waste, and contaminated site remediation. It also enables preparation of environmental plans for flood control, drainage, soil conservation, water resource management, waste management, and air quality management.

Table A1. Legal Framework for Water in B.C.

Park Act	The Act provides for the establishment, classification and management of provincial parks and recreation areas dedicated to preserving the natural environment.
Forest and Range Practices Act	The Act governs how forest and range activities occur on Crown land; and authorizes regulations that set objectives for water that must be addressed through results and strategies identified and undertaken by forest and range agreement holders. It also provides for designation and protection of Community Watersheds and for watersheds with significant downstream fisheries values and significant watershed sensitivity.
Oil and Gas Activities Act	The Act provides for administration of oil and gas development in the province by the Oil and Gas Commission (OGC); the OGC has authority under the *Water Act* to issue water approvals associated with oil and gas activity..
Environmental Assessment Act	The Act establishes an environmental assessment process for the province and requires an environmental assessment certificate before a major project can be constructed. Hydroelectric power projects with the capacity to produce 50 megawatts or more are subject to review under this legislation as are certain major project relating to dams, dykes, water diversion, ground water extraction and shoreline modification.
Land Act	The Land Act is the primary article of legislation that is used by the provincial government to convey land to the public for community, industrial, and business use. The Act allows the granting of land, and the issuance of Crown land tenure in the form of leases, licences, permits, and rights-of-way.
Mines Act	The Mines Act authorizes mining or exploration work that involves mechanized surface disturbance. The Act applies to all mines during exploration, development, construction, production, closure, reclamation and abandonment.
Fisheries Act	The federal government has ultimate authority over fish and fish habitat through the F*isheries Act*. Water quality is protected through provisions providing for the prevention of the pollution of waters inhabited by fish.
Navigation Protection Act (2013)	The Act protects the public right to marine navigation and protects the safety of mariners and the marine environment (includes freshwater) on actively used portions of waterways that support heavy commercial and/or industrial navigation, and in close proximity to heavily populated areas.
International Boundary Waters Treaty Act	The Act provides for the protection of international waterways by requiring a licence to obstruct or divert boundary waters and by prohibiting bulk water removals from boundary waters (as of 2012).

Canadian Environmental Assessment Act	The Act provides for environmental assessment of projects where the proposed project triggers a federal environmental assessment under the Regulations Designating Physical Activities. Water projects triggering a federal environmental assessment could include, for example, groundwater users using ≥ 200,000m^3/ year or ≥ 10million m^3/year or more of water from a natural water body flowing into another natural water body.
Canadian Environmental Protection Act	The Act is aimed at protecting the environment and human health by managing toxic substances, marine pollution, disposal at sea and other sources of pollution. There are also provisions regarding international water pollution and the ability of the federal government to take action if the province is not addressing the issue. In the case of environmental emergencies, the provisions in the Act govern if no other federal or provincial regulations exist.
Canada Water Act	The Act provides for the cooperative management of water resources and water quality. If an agreement cannot be reached with a province, the Act provides for unilateral action by the federal government. The provisions for unilateral action are limited to federal waters and interjurisdictional waters of "significant national interest" or where the water quality has become a matter of "urgent national concern."
Oceans Act	The Act provides a framework for ocean management. Canada's Oceans Strategy was developed under the Act through the coordination of policies and programs across governments. It provides a national integrated ocean management strategy for protection of estuarine and marine ecosystems.
National Parks Act	The Act provides for creating and managing national parks on federal land.

Local Government	**General Scope**
Community Charter	The Act provides a legal framework for municipalities to identify and meet community needs. Of particular significance in relation to water management is the authority to establish bylaws in "spheres of concurrent authority" such as protection of the natural environment and protection of public health.
Local Government Act	The Act sets out the corporate authority of various types of local governments (municipalities, regional districts, improvement districts, etc.). From the perspective of water management, of greatest significance are powers and responsibilities relating to land use, growth, infrastructure (e.g. storm water management), works, and similar matters.

Appendix B: Glossary

Appurtenant means that the water right is attached to a parcel of land. If the land is sold, the water right remains attached to the appurtenant land.

Dewatering wells are a type of well that is used to divert or convey ground water by pumping for the purpose of (a) facilitating construction of an excavation, (b) stabilizing an area of land, buildings or other improvements, or (c) reducing water pressures in geologic formations (Ground Water Protection Regulation).

Energy Purchase Agreement means an agreement for an energy distributor to purchase energy from an energy producer. For example in BC, BC Hydro would have an energy purchase agreement with a small independent power producer.

Instantaneous Withdrawal Limit means the amount of water a licence or approval holder can remove from the source at any one time. **m³** or **cubic metre** – Is the equivalent of 1,000 litres.

Restorative Justice seeks to create just outcomes by repairing the harm caused by crime and violence, typically through facilitating a process that addresses victims' needs and holds offenders meaningfully accountable for their actions.

Unrecorded, as defined in the *Water Act*, means water the right to the use of which is not held under a licence or under a special or private Act. Section 42 of the *Water Act* specifies that it is not an offence for a person to use unrecorded water for domestic purposes or for prospecting for minerals. Section 42 also allows for the use of water to extinguish a fire but requires that the flow of the stream must be restored once the fire is out. These users are often referred to as 'unrecorded users.'

Water source wells are a type of well drilled to obtain water for the purpose of injecting water into an underground formation in connection with the production of petroleum or natural gas.

Water supply wells are a type of well for extracting and using groundwater for a water supply (e.g., for irrigation, for waterworks).

Works, as defined in the *Water Act*, means

(a) anything capable of or used for

(i) diverting, storing, measuring, conserving, conveying, retarding, confining or using water,

(ii) producing, measuring, transmitting or using electricity,

(iii) collecting, conveying or disposing of sewage or garbage, or

(iv) preventing or extinguishing fires,

(b) booms and piles placed in a stream,

(c) obstructions placed in or removed from streams or the banks or beds of streams,

(d) changes in and about a stream,

(e) access roads to any of the works referred to in paragraphs (a) to (d), and

(f) except in Parts 2 and 3 [of the *Water Act*], unless made applicable by a regulation under section 1.1,

(i) wells,

(ii) wellheads,

(iii) anything that can be or is used for injecting or otherwise adding water or any other substance to a well,

(iv) anything that can be or is used to construct a well, deactivate a well or close a well,

(v) anything that can be or is used for exploring for, testing, extracting or monitoring ground water,

(vi) anything that can be or is used for disinfecting a well,

(vii) an injection system attached to a work that is used for conveying, from a well, ground water that will be used for applying fertilizers or pesticides,

(viii) anything that can be or is used in relation to a monitoring well or a well made for the purpose of ground water remediation, and

(ix) access roads to wells.

BRITISH
COLUMBIA