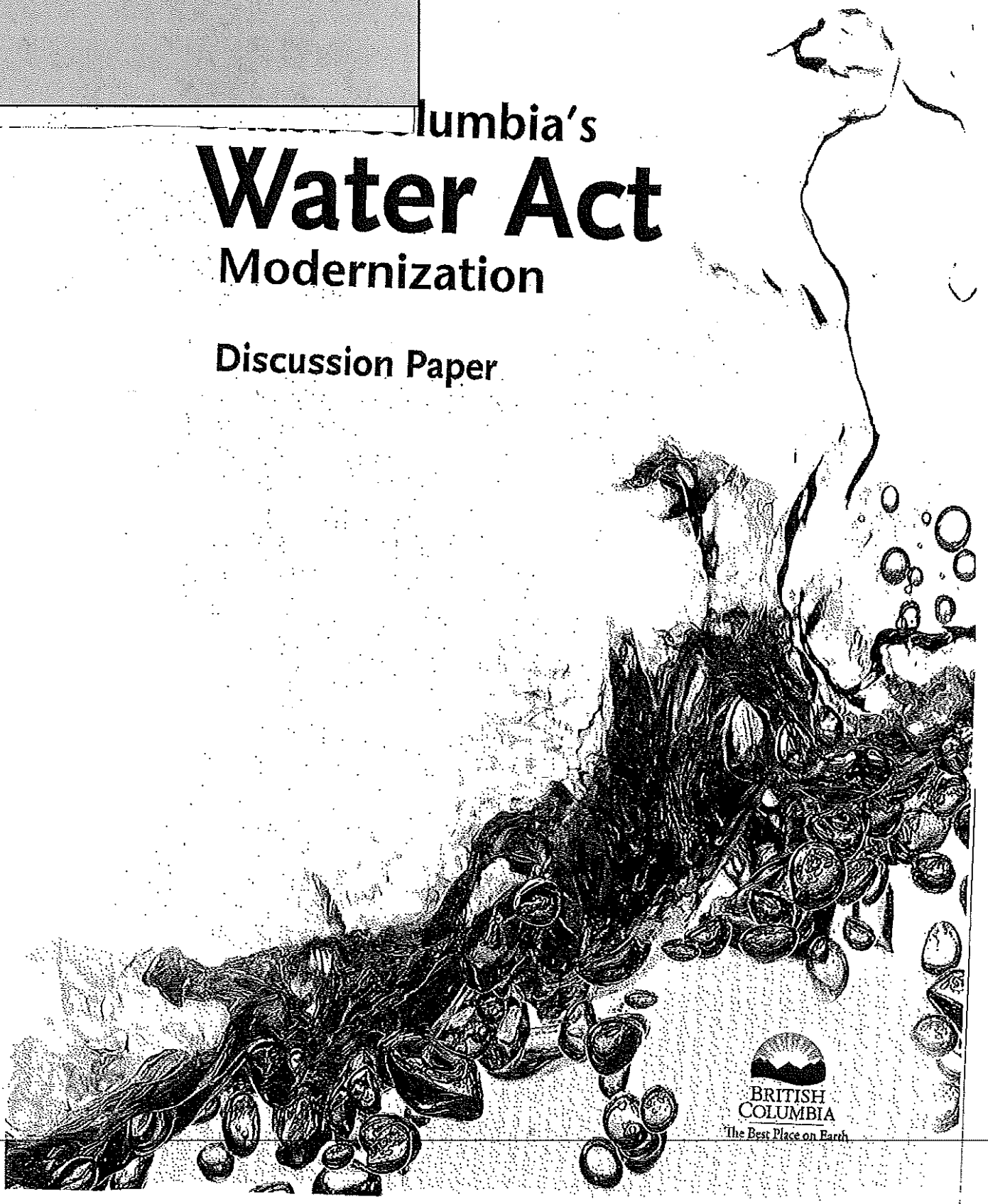
PERSONAL IDENTIFIERS REMOVED

lumbia's Water Act Modernization

Discussion Paper



BRITISH COLUMBIA
The Best Place on Earth

OBJECTIVE THREE

Habitat and riparian area protection provisions are enhanced.

The *Water Act* defines materials that someone may be ordered to stop introducing or not introduce (dumping) into a stream. Stream health and fish habitat would be better protected if the dumping of a wider range of materials into a stream was prohibited, and the authority for responding to dumping and requiring restoration was clear.

Options for protecting habitat and riparian areas

A. Maintain the requirement for an engineer's order to prohibit dumping of material into streams (reflects current situation).

OR

B. Amend the *Water Act* to include a prohibition against dumping of a wider range of debris and materials into streams, with a requirement for the person responsible for dumping to restore stream health.

Which option do you prefer, and why? Are there others?

B b/c A is too late!

and sustain stream health. Consistency helps applicants and planners understand the expectations for water use and the amount of water available. Flexibility is also needed to improve the ability of users and businesses to adapt to changing climate and economies, water supplies, and public expectations. In future, allocation decisions and water licence conditions should allow for responsiveness to watershed needs or unexpected conditions, encourage the use of up-to-date technology and help focus water management efforts in priority areas.

There are three key ways in which the *Water Act* could be updated to address current water allocation challenges. One is by improving the ability to review licence terms and conditions so they can be adjusted in response to new conditions. The second is to require decision makers to consider the actual and potential impacts on the watershed as a whole when making decisions under the *Water Act*. The third is to encourage water users to maximize the use of their water and encourage the uptake of efficient tools, practices and infrastructure.

7.1 Objectives for introducing more flexibility and efficiency in the water allocation system

In order to introduce more flexibility and efficiency in the water allocation system the following objectives are proposed for a modernized *Water Act*:

1. The water allocation system emphasizes and encourages efficiencies in both water use and the administration of water as a natural resource
2. Water users and decision makers have flexibility to quickly adapt to changing environmental, economic and social conditions
3. The water allocation system integrates the management of groundwater and surface water resources where required in problem areas
4. Water users conserve water during drought or when stream health is threatened

Indicate your level of support for the objectives proposed.

☑ STRONGLY SUPPORT ☐ SUPPORT ☐ NEUTRAL ☐ DISAGREE ☐ STRONGLY DISAGREE

This is well overdue. Awesome to see it being looked into!

7.2 Possible Solutions

All of the options below relate to the allocation of water (where it is, or will be, regulated). For more on groundwater extraction and use see Goal Four. The

proposals contained in this section may not be appropriate for all situations and could be applied differently depending on the issues in the watershed. For example, in areas of high demand, declining stream health or drought prone areas more 'tools' might be enabled and applied.

OBJECTIVE ONE

The water allocation system emphasizes and encourages efficiencies in both water use and the administration of water as a natural resource.

British Columbians are very high water users and in some areas our streams do not have enough water at certain times of the year. It is important to use the water we do have as efficiently as possible. In future, beneficial use could be defined to include efficient use according to best practices. This means that if a user is withdrawing water, but has very leaky infrastructure or uses inefficient practices, then the modernized *Water Act* will provide incentives to conserve water. Actual water use measuring and reporting is recommended for all users.

WHY NOT MANDATORY?

In the future, licensing decisions will be based on the actual needs of the applicant with respect to their proposed use, assuming up-to-date and efficient processes. For example, irrigation licensing would be based on updated crop and soil needs using best practice irrigation, methods and equipment. Manufacturing licences would be based on the expectation that the licensee will use efficient manufacturing methods (recycling and reusing water, leak detection, and efficient equipment). Licences for new subdivisions, large developments or those requiring significant infrastructure would be encouraged to employ new asset management approaches to make best use of resources and reduce waste products (waste water reclamation and re-use).

Options to encourage water use efficiency

A. Government determines actual needs in relation to a proposed undertaking on the basis of efficient practices and works. If water is not being used in a beneficial way as authorized, then the potential for licence cancellation exists. Cancelled water rights may then be reallocated or retained for stream benefit.

OR

B. Codes for efficient infrastructure and practices in different sectors are developed, in partnership with the sector, and the modernized *Water Act* requires compliance with these codes.

AND

C. The use of incentives and economic instruments is enabled in a modernized *Water Act* to encourage water efficiency. For example:

- Penalties and bonuses;
- Water rentals and pricing structures; *and*
- Rebates for water reclamation and non-potable water use.

OR

D. Review rules for the transfer and apportionments of existing water rights.

This includes improving the ability for users to transfer from one appurtenance to another, and for the extension of rights to other purposes. These measures may provide flexibility for users to transfer water from 'lower value' uses to 'higher value' uses for both short term and long term transfers of existing allocations within watersheds. Transfers could be enabled for both consumptive uses and stream health protection purposes. To implement this proposal government would provide guidance and audit transfers to ensure there are no increased impacts on the environment or other users.

Which options do you prefer, and why? Are there others?

A + C

The administration of water refers to the time and resources required to plan, make decisions, and to regulate water activities. Low-risk amendments to licences and applications for new licenses (for example, some licence apportionments and most licence applications for domestic use) normally have little impact on the watershed but are process intensive and slow down decision making. These applications are a major part of government workload and are generally approved unless the stream is fully allocated or other conflicts exist. Applicants, water users, and all levels of government would benefit from a simplified and streamlined allocation and transfer process for low-risk applications, some apportionments and transfers.

It is for this reason WAM would consider whether some uses of water could be simply allowed to occur, rather than to licence them in accordance with particular requirements. These uses, which could be called a 'permitted use', could include reasonable domestic uses, stock watering, short-term uses below a threshold, and other small or low risk uses. Permitted uses could be applied to groundwater and surface water. This would then allow efforts and resources to be focused on higher risk decisions and activities in areas of water stress.

Permitted uses could also apply to existing users for domestic purposes without a right (groundwater or unrecorded surface water). Existing licensed users could be encouraged to transition their right to divert and use water to a permitted use, under specific circumstances. Consideration would have to be given to the status of the permitted use in terms of priority, whether based on purpose or dates, or whether such status protection would only be available for licences. To ensure sustainable levels of withdrawals from the resource, self-registration and reporting of the permitted use might be necessary. Any registration and reporting could be streamlined through an online system and would not necessarily require a decision.

Options to encourage administrative efficiency

E. Permitted uses would be defined and allowed under the Act in accordance with regulations applied in a consistent manner throughout the province.

OR

F. Permitted uses would be defined and allowed under the Act in accordance with regulations. Regulations might apply differently throughout the province based on risk or, if considered acceptable, defined and applied through a water allocation plan.

AND

G. Voluntary self-registration of the permitted use withdrawal.

OR

H. Required self-registration of the permitted use withdrawal.

Which options do you prefer, and why? Are there others?

F + H. Self-registration doesn't mean anything will happen, just helps MOE build knowledge.

What considerations would help determine which water uses and extraction rates could qualify as a permitted use (no water licence required)? What controls are needed? How should permitted use status be protected?

Watershed quality + quantity - Percent of watershed allocation + list of permitted types

British Columbians expect water licence holders to use water efficiently and together with government, play a role in keeping our streams healthy. However, without accurate measuring and reporting of actual use it is hard to know the efficiency of water use or whether users comply with licence conditions. If water licence holders or applicants accurately measure and report actual use or well levels when demonstrating compliance, it would be easier to focus water management efforts where they are most needed.

Options to encourage administrative and water use efficiencies

To improve decision making times and enforcement, existing water licence holders and applicants may potentially be responsible for:

I. Providing more detailed information about the proposed use and efficiency measures for licence applications or changes;

J. Documenting potential environmental impacts and effects on other users in licence applications or changes;

K. Seeking consent from, or undertaking consultation with, affected parties for licence applications or changes;

L. Measuring and reporting actual water use when demonstrating compliance with licence conditions;

M. Reporting well levels for regulated groundwater users;

N. Self-registering wells, especially where groundwater is in direct hydraulic connection with surface water or in areas of known quantity concern; or

O. ANY combination of the above.

Which options do you prefer, and why? Are there others?

L + M most important for starters

OBJECTIVE TWO

Flexibility is provided to water users and decision makers to quickly adapt to changing environmental, economic and social conditions.

The water resource needs to be more closely managed where there are pressures on the environment caused by a lack of water, or conflicts between users, or changing conditions in a watershed. The ability to review or revisit licence terms and conditions would be useful where information shows that this is warranted due to changing conditions. Consistent criteria to determine the areas of high priority or increased pressure on water resources would assist the transparency of any reviews undertaken. These reviews could occur on a watershed or aquifer basis rather than on a licence-by-licence basis as is currently allowed. Collaboration between government agencies and licence holders on these reviews could also reduce the consultation burden, processing time and costs. Addressing these issues through collaboration would promote community understanding and result in robust adaption outcomes.

Option to provide water users and decision makers the flexibility to adapt:

A. Provide decision makers and licence holders with the ability to seek amendments of water licences' terms and conditions based on:

- New information about watershed issues, priorities or changes in supply (watershed, aquifer based) including addressing over-allocation and climate change impacts;
- The ability to use water differently e.g. bring more land into productivity, change land appurtenance or use, or to use water for a higher economic purpose;
- Incentives to consolidate licences within a community/watershed to inspire collaborative or shared management of the resource;
- Adverse impacts on aquifers or groundwater recharge zones; *or*
- Monitoring information that shows stream health is deteriorating because of lack of water.

OBJECTIVE THREE

The water allocation system integrates the management of groundwater and surface water resources where required in problem areas.

Water managers will be enabled to regulate surface and groundwater as one resource in areas where groundwater is to be regulated and hydraulic connections exist between them. If thought necessary to address conflicts, this could include groundwater licensing, see Goal Four. Considering the differences between surface water in streams and groundwater, different information could be required from applicants and different rental rates may also apply.

Through the licensing and approval process, water managers protect existing users from the short and long term impacts of increased withdrawals. Water Managers can already investigate and review surface water licences but in future they may need the ability to investigate groundwater specific issues or wells that are causing problems and require mitigation. 'Problem wells' could be causing adverse effects on the environment, human health, property or public safety, as well as other impacts. Impact assessments that demonstrate the connectivity between ground and surface waters may be needed.

Feedback is welcome on how groundwater and surface waters could be managed in an integrated manner. Groundwater regulation could be integrated into the *first-in-time first-in-right* FITFIR approach for surface water licences, depending on the length of use and age of well, or another approach could be used.

Options for the water allocation system

A. First-in-time first-in-right – FITFIR

- New surface water and groundwater, where it is regulated, are allocated based on a modified FITFIR approach.

B. Priority of use

- New surface water in streams and groundwater, where it is regulated, is allocated based on priority of use determined either in the *Water Act* or with community involvement in the water allocation plan process.

If water licences have the same priority date on the same stream, the *Water Act* currently sets the following precedence (ordered highest to lowest): domestic, waterworks, mineral trading, irrigation, mining, industrial, power, hydraulicking, storage, conservation, conveying and land improvement purposes. Many jurisdictions have modified their FITFIR arrangements (during times of low flow). Manitoba, for example, gives priority to domestic then municipal, agricultural, industrial, irrigation, and other uses.

Which option do you prefer, and why? Are there others?

Same as Manitoba

OBJECTIVE FOUR

Water users will be required to conserve water during drought or when stream health is threatened.

Sometimes there is not enough water to satisfy the total demand of all users and the needs of the environment. When these water shortages occur, tough decisions have to be made including under which circumstances, and how water should be shared. Transparent, simple and fair processes are required to address both temporary and long term scarcity. The options to address water scarcity are most effective when integrated with measuring and reporting of actual use, and an effective communication and response plan such as a drought management plan. Any groundwater user may also be required to conserve water in times of drought or where stream health is threatened.

Options to address temporary water scarcity

A. Discretional

- The decision-maker determines the approach on a case-by-case basis, balancing the effects on water users with the required environmental outcome (similar to section 9 of the *Fish Protection Act*).

B. Sharing

- All water users would reduce use on a proportional basis depending on the water supply forecast, for example, if the supply forecast shows less water than normal, then allocations would be reduced on a *pro rata* basis. This approach could be influenced by water use efficiency, creating an incentive to employ efficient practices.

C. Hierarchy of uses

- A hierarchy of uses guides how water use is reduced, for example, human and stock watering needs would be satisfied before landscape irrigation.

D. Priority date

- This approach follows FITFIR, as contemplated by the current requirements of sections 15 and 88 of the *Water Act* but could be expanded to include the protection of ecosystem values.

Which options do you prefer, and why? Are there others?

Discretional

Addressing long term water scarcity will build on other changes proposed throughout this document. To be successful, solutions need to be guided by clear objectives and developed with full involvement of water users and responsible government agencies. Any reductions in water availability (whether by reduction of stream flows or water rights) may be perceived as a risk to property values, businesses or a way of life.

Long term scarcity can also be dealt with using non-regulatory tools as well as supply and demand management options, see Figure 3. Options should also build on drought management plans that individual licensees and communities may develop. Full or partial cancellation of water licences may occur if other options were applied and were unsuccessful. Planning tools such as the *Soft Path for Water* (Brandes and Brooks, 2007), *Water Balance Model and Irrigation Demand Modelling* provide opportunities to bring stakeholders together to find sustainable solutions.

Options to address long-term water scarcity

E. Through a mandatory Water Management Planning process

- In some cases the province may require a planning initiative to address long term water scarcity, such as a Water Management Plan provided for in Part 4 of the *Water Act*.

F. At the request of water users or communities

- Water licensees and other interested parties may develop a plan that addresses long term scarcity on a watershed basis and provides recommendations for supply and demand side changes to be made. Approved processes that include the wider community would need to be developed and followed.

Which option do you prefer, and why? Are there others?

Mandatory, so not dependent on politics of the day.

Figure 3

Supply Side Options
- Increased storage
- Reservoir management
- Water rights transfers

Demand Side Options
- Improved infrastructure
- Water use efficiency improvements
- Water reclamation and reuse

between well owners and surface water licence holders as well as between humans and the environment. Recent conflicts among water users coupled with declining groundwater levels are resulting in increasing support for the regulation of groundwater use.

Regulating large groundwater extractions province-wide (e.g., water bottling plants, municipal users, large irrigators, and large industrial users) and introducing requirements for monitoring and reporting are Living Water Smart commitments. In critical areas or aquifers under stress, government is proposing to regulate the extraction and use of most groundwater withdrawals, not just large withdrawals. Individual domestic uses will be allowed in most situations.

The overall objective is that groundwater resources in BC are sustained in perpetuity. The Council of Canadian Academies' Expert Panel on Groundwater (2009), outline the goals for groundwater sustainability as the: protection of ecosystem health, protection of groundwater supplies from depletion, protection of groundwater quality from contamination, achievement of economic and social well-being, and application of good governance.

8.1 Objective for regulating groundwater extraction and use

In addition to the objectives outlined in Goal Three the following groundwater specific objective is proposed for a modernized *Water Act*:

1. Groundwater extraction and use is regulated in priority (critical) areas and for all large withdrawals.

Indicate your level of support for the objective proposed.

☑ STRONGLY SUPPORT ☐ SUPPORT ☐ NEUTRAL ☐ DISAGREE ☐ STRONGLY DISAGREE

8.2 Possible Solutions

Water, whether in a stream or in the ground, will be considered the same resource under the modernized *Water Act*. In addition to the possible solutions outlined Goal Three, any groundwater regulation would be designed so impacts on other water users and watershed health is considered before additional diversion and extraction of groundwater is approved.

GOAL FOUR
Regulate Groundwater Extraction and Use

BC's groundwater characteristics are unique. Many of our most productive sand and gravel aquifers are small and shallow. These aquifers are often adjacent to, and are in direct connection with rivers and streams. Aside from the important economic benefits gained from using groundwater, it is also important to the habitat of fish and aquatic species as it provides a stable flow of cool and clean water. This is particularly important when stream flows are low and at certain times in the fish rearing cycle. In such cases, the ability to manage surface water and groundwater together is important.

This section considers how to improve the regulation of groundwater extraction and use through a modernized *Water Act*. Regulation may mean placing terms and conditions on groundwater extraction and use through a licensing or permitting process. Changes would aim to provide clarity on the extraction and use of groundwater for the million people in BC who depend on it for drinking water, and an improved investment climate for the businesses that rely on it. Feedback is welcome on the kind of regulation or controls that should be applied to groundwater extraction and use.

Wetlands in early spring
Kevin Ronneseth

Wetlands?

Groundwater extraction and use in BC is not regulated and government's ability to control its use is limited. As a result, all levels of government and citizens are challenged to find methods that can manage conflicts among water users and deal with reductions in groundwater quantity or quality concerns. This situation was partially addressed by the *Drinking Water Protection Act* and *Water Act* amendments in 2001 and the *Groundwater Protection Regulation* (GWPR) in 2004. In addition, certain large scale groundwater extractions (greater than 75 litres per second) are subject to an environmental assessment to secure a certificate under the *Environmental Assessment Act*. Other legislation or regulations affecting groundwater include the federal *Fisheries Act* and BC's *Environmental Management Act, Oil and Gas Activities Act, Environmental Assessment Act, Water Protection Act* and regulations applicable to water utilities.

Phase Two of the *Ground Water Protection Regulation* (GWPR), which is under development, addresses the management of groundwater by minimizing conflicts between well owners and protecting stream health. It includes provisions for siting new wells and controlling artesian flows from wells. In addition, Phase Two will provide protection to wells and aquifers by requiring additional construction and pump installation measures. Phase Two also proposes the mandatory submission of well drilling reports. Well construction and maintenance activities will continue to be regulated under the GWPR or oil and gas legislation.

Regulating the extraction and use of groundwater can provide the necessary controls to resolve conflicts over well drilling activities and the impacts of groundwater use. In some areas of the province, wells are being drilled without consideration of the well's location or its impact on streams or other users. As a result, conflicts are increasing

groundwater is not abundant it may be designated as a priority area and be regulated from a lower threshold.

Which thresholds do you prefer, and why? Are there others?

A to start with provision to change to B if A doesn't capture enough communities. Is this per owner/well/area or what?

Options for determining priority areas to regulate groundwater extraction and use

All groundwater users will be regulated in priority areas except for small scale extraction and use of groundwater for domestic purposes (for example 2-3m³/day).

A. **Heavy groundwater extraction and use** (rely on BC Aquifer Classification System);

B. **Area of known quantity concern** e.g., declining groundwater level, conflicts with other groundwater users, aquifers or water resources impacted by salt water intrusion;

C. **Groundwater in direct hydraulic connection** with surface water in areas of known quantity concern;

D. **Significant population that is reliant on groundwater** for drinking water;

E. **Trans-boundary aquifers;**

F. **Basins where surface water is at or near the allocation limit;** *or*

G. ANY combination of the above.

Priority areas may include the Okanagan Basin, the Lower Mainland, the Gulf Islands and the East Coast of Vancouver Island. The above criteria would allow for the identification of other basins such as in the southern interior of BC, where the availability of surface water is limited and tighter controls on the extraction and use of groundwater may be desirable to protect the security of existing licences and environmental flows.

Which options do you prefer, and why? Are there others?

G

OBJECTIVE ONE

Groundwater extraction and use is regulated in priority (critical) areas and for all large withdrawals.

It is proposed to regulate extraction and use of groundwater above the applicable thresholds for large withdrawals, or within priority areas for all new and existing wells. The overall objective is resource protection. The possible solution includes the regulation of the extraction and use of fresh water for all purposes, including the injection of groundwater for oil and gas production. The construction of water source wells associated with oil and gas activities will continue to be regulated under oil and gas legislation.

The possible solution contemplates that if licensing of groundwater or other forms of regulation are considered necessary, existing groundwater users would be provided with transitional time to apply for their existing extraction and use to obtain protection similar to a water licence. Incentives for applying might include:

- increased security of the existing use;
- protection of the use from impacts (e.g., regulation of new well drilling on adjacent property); *and*
- an application deadline after which increased requirements to prove historic water extraction and use could apply.

Options for determining the thresholds for large groundwater withdrawals

91USgpm

A. The threshold for large could be:

- ~~500m³~~/day for wells drilled in unconsolidated, sand and gravel aquifers or if otherwise determined to be large by a Water Management Plan.
- ~~100m³~~/day for wells drilled into consolidated bedrock aquifers or if otherwise determined to be large by a Water Management Plan.

18 USgpm

OR

B. The threshold for large could be:

- 250 m³/day for wells drilled in unconsolidated, sand and gravel aquifers or if otherwise determined to be large by a Water Management Plan.
- 100 m³/day for wells drilled into consolidated bedrock aquifers or if otherwise determined by a Water Management Plan.

The 500 m³/day threshold would capture mid to large sized water supply systems for small towns and larger communities, larger farms, resorts and golf courses. The 250 m³/day threshold would provide greater extraction control and would capture all of the above as well as some smaller enterprises. There would be a corresponding increase in regulatory costs.

The proposed thresholds are the highest in Canada due to the relative abundance of groundwater in some parts of BC. A lower threshold is appropriate for bedrock aquifers as they are less productive and their levels are more impacted ~~more~~ by extractions due to their confined nature and reduced recharge potential. Where

How much water is that?

500 m³/day would supply 200-250 single residential homes or 0.4 acre/foot of water per day.

250 m³/day would supply 100-120 single residential homes or 0.2 acre/foot of water per day.

45USgpm