



Feedback on Watershed Security Strategy Discussion Paper

March 2022

Introduction

The Water Supply Association of BC (WSABC) is an organization of water utilities that represents the interests of BC public, domestic and irrigation water suppliers and their customers. The organization has been in existence since 1923 originally called the Association of BC Irrigation Districts. Our organization and members have worked with the Provincial government to adapt to the continual changes for better water management.

The WSABC contributed to numerous Provincial watershed protection initiatives including the substantial 2002 Okanagan-Shuswap Land Management Plan and the development of the more recent Auditor Generals' review on Drinking Water. This paper provides feedback to the Province about its Watershed Security Strategy from the perspective of the water suppliers. As water suppliers, we are in a unique position to provide this information as any upstream impacts to water quality and quantity directly affect our operations.

There are over 1,900 water suppliers in the Interior Health region of all sizes that are required to provide safe drinking water for their communities and are strictly regulated by the province. These utilities are supplied from lake intakes, creeks and groundwater sources recharged from the watersheds. As a part of our regulatory expectations, utilities look to the Province to manage the watersheds to the extent of their authority. We expect protection for our watersheds when the Province had designated many of them "Community Watersheds".

A community watershed is defined under the *Forest & Range Practices Act (FRPA)* as all or part of the drainage area that is upslope of the lowest point from which water is diverted for human consumption by a licensed waterworks. Community watersheds must also be designated under the Government Actions Regulation.

To protect the water that is diverted for human consumption, such areas require special management to:

1. Conserve the quality, quantity and timing of water flow
2. Prevent cumulative hydrological effects having a material adverse effect on water

(Province of British Columbia, 2022)

Water utilities are noticing decreased source water quality and increased extreme high and low flows. The recent high-volume storms that hit the Coldwater and Tulameen River basins are a warning that we need to change upland management. Climate change creates new environmental patterns and conditions that are unaccounted for within current natural resource management practices. The impact of forestry and other landscape disturbances may have been previously mitigated by the landscape's natural resilience. New extremes caused by climate change exceed the ability of our watersheds to handle these events. Forestry practices must change to increase the landscape's resilience to withstand the new flood, drought and forest fire cycles.

The flooding and damage to Provincial and local infrastructure is staggering and must be a call to action of more than just the Ministry of Environment and Climate Change Strategy. It requires adjusting the approach for all Ministries that control land activities in watersheds. The current initiative will fall short if there is not coordination and change across the Ministries.

General Feedback

The Watershed Security Strategy Discussion Paper states:

Some elements of watershed security may include:

- Safe drinking water for all,
- Healthy and resilient aquatic, riparian, wetland, and watershed ecosystems,
- Sufficient water to support food security, recreation, jobs, and local economies,
- Sufficient water for First Nations, and
- Reduced risks from water related hazards such as flooding and drought.

We agree with the items presented on the list and recommend applying the following details:

- Watershed security means the watershed has sufficient natural ability to withstand natural disturbances such as flood, drought or fire, and the impacts of anthropogenic land-use activities.
- Natural features maintain water quality and anthropogenic activities do not negatively impact water quality.
 - Natural features buffer, absorb, filter, and treat precipitation.
 - Anthropogenic features do not concentrate runoff or cause erosion and sedimentation.
 - Natural filtration processes maintain high natural raw water quality.
 - Natural features such as multi-storied vegetation, soil organic matter, lakes, and wetlands absorb major runoff events.
 - Anthropogenic disturbances and features are managed to retain snowpack and delay and extend snowmelt.
 - Natural water quality should be maintained at as high a level as possible. Water that could still be acceptable if treated through a Water Treatment plant is too low a target for long term watershed health.
 - Sustainability includes affordability achieved by high quality and sufficient quantity of source water.
 - Anthropogenic activities such as forest replanting should occur immediately after harvesting and consider replanting to include fire resistant methods using deciduous trees, thinned stands, and fire barriers.

The Province requires a lead water agency or long-term knowledgeable staff to maintain the institutional knowledge otherwise a cycle of new initiatives that ignores previous work is created. An enormous amount of work on watershed security under the broader definitions has already been done in the past including many studies and data collections. For example, the Interior Health Authority has required many of the larger water purveyors to produce Source Water Protection Plans. Kaleden's encompasses Skaha Lake in its entirety, which benefits OK Falls, Skaha Estates, Lakeshore Highlands, and Heritage Hills. We hope that all the work many water purveyors have already done will be used to accelerate this project's objective.

We recommend specifically reaching out to Improvement Districts and small water systems because they have different perspectives than those of local governments.

Outcome One: Support and enable watershed governance.

What could the Province provide to better enable watershed governance initiatives?

How can the Province facilitate and support government-to-government arrangements that help improve watershed health and security and advance reconciliation?

How can watershed governance protect provincial, regional, Indigenous, and local values?

Governance means setting standards, authorizing land use decisions, and monitoring for compliance. Under current law, the Province sets standards, authorizes land use decisions, and nominally monitors and enforces those standards. For governance to be effective and manageable, not everyone can be at the table making the decisions. Finding the appropriate level of engagement by the watershed stakeholders will be the key to success. The International Association for Public Participation (IAP2) developed a spectrum showing five different levels of public participation in decision making. The Province must define their desired level of external participation prior to determining how to enable watershed governance because different levels need different governance structures.

The level of external participation determines the level of resources and authority provided by the Province to the other groups involved in watershed governance. In the absence of a specific level of participation, we see a few options involving internal Provincial staff and watershed stakeholders. Without a provincial lead authority, water providers are acting as facilitators in the watershed management process. In most watersheds, there is a key stakeholder or principal operator who may be the largest licensing for the watershed. Whoever is most involved could be a central coordinating force within the watershed.

Because current legislation is fragmented and distributed across various ministries, the Province should implement a lead position for source water protection. This position would engage the multitude of authorities on the land base and coordinate the protection of our source water. Other ministries would be required to refer proposals through this agency and in turn they would consult agencies charged with watershed security such as local governments and improvement districts. They could provide expertise to help understand governance, clarify the roles and responsibilities for all stakeholders in reconciliation and provide expertise in conflict resolution/facilitation process. Regardless of the establishment of such a coordinating position, the Province should adjust its legislation so that it can be easily determined when water legislation supersedes other legislation. This is not a simple task.

There are basin-wide approaches such as the Okanagan Basin Water Board that has been successful in many initiatives by being inclusive and science-based. It operates on a basin-wide scale and brings local governments and stakeholders to the table. In that context, its establishment was authorized by Provincial legislation that also enabled taxation to fund its operations. *Although local taxation can work to support local initiatives, we do not support the wholesale devolution of provincial authority without direct financial support.*

Outcome Two: Enhance our understanding of watersheds and the risks they face.

What does your organization, government or community need to be successful to access, collect, and share water data?

Do you use watershed characterizations to help understand the status, drivers, and stressors in your watershed? If so, what do you use watershed characterizations to understand (e.g., land use pressures, climate and climate change, status of fish and aquatic health, etc.)?

What is preventing you from characterizing the status and risks to water in your local watershed and what can be done to fix this?

To enhance data collection and make use of the data, we recommend that the Province:

- Set standard datum to collect across the province to allow for trending and understanding of changes over time.
- Share climate modelling data to better understand the new extreme weather events.
- Coordinate data collection and sharing to enable stakeholder collaboration.
- Provide a technical resource with the human resources and funding to help small stakeholders to understand water monitoring and to undertake community-based monitoring projects.
- Complete watershed assessments for each land use permitted that are compatible with the Source Protection Plans created by water suppliers.
- Account for the cumulative effects of natural and anthropogenic landscape disturbances.
- Decision-makers and Stakeholders must spend sufficient time in the watersheds to understand the features, sensitivities and risks that are present, i.e. *“To understand the landscape, we must get out from behind our desks”*

Outcome Three: Progress reconciliation with Indigenous peoples using new and improved mechanisms for collaboration on provincial water priorities.

What would be helpful for your organization to better understand the Province’s obligations to Indigenous peoples for water policy development (e.g., written materials, webinars, videos)?

We support the Province’s efforts towards reconciliation with Indigenous peoples and see opportunities to engage directly at a local level. As water suppliers, we could incorporate indigenous knowledge into our management. We would need further information for better understanding of the science and indigenous knowledge base mix. We see an opportunity for data collection and sharing, remediation and / or water storage projects with local First Nations. The key here is to understand the most important issues and ensure that there is alignment in principles and that collaboration is possible on those issues. Through this, the shared values in protecting the water can be realized on both sides.

Water suppliers want a clearly defined process for consultation with First Nations tailored to their operating area. Recognizing that capacity limitations within First Nation’s administration does not always permit effective consultation, we recommend the Province to allocate funds to First Nations for capacity building in this regard.

Outcome Four: Achieve healthy water for everyone.

Which principles do you think should underlie source water protection?

How can communities, all levels of government (local, provincial, federal and First Nation), as well as industrial water users work together better to protect drinking water for human health and well-being, for now and in the future?

Principle One: Watershed protection trumps other land use.

Water is the most important resource.

A few decades ago, the Province designated many of the watersheds in the Province as Community Watersheds. The idea of designations to protect drinking water is not new. That didn't effectively create Watershed Security as other Ministries may have noted the "Community Watershed Designation" but didn't significantly adjust their practices.

Any initiative on watershed governance will fall short unless the health and security of the water in the watershed is held in highest value and watershed protection trumps other legislation. Risk analysis in watersheds regardless of the activity need to be calculated as 'Risk to Water' instead of risk to the loss of resource extraction potential. Cumulative impacts from natural resource management have shown us how changes in drainage coupled with the recent climate change events can have catastrophic impacts on both quality and quantity of water. Water quality and quantity must be priority one and other resource management planned around this.

Principle Two: Enhance the natural ability of watersheds to create Watershed Security.

There are watershed adjustments that can be made to enhance the natural ability of the watershed to filter the water and produce or maintain the highest possible natural water quality. Soft changes such as increased wetland areas, through very minor earthworks adjustments is now possible with the LIDAR mapping that is available through much of the watershed. Holding even 200mm more depth in the spring in the meadow areas can provide shallow storage and more ground filtration for significant areas of the watershed. Maintaining tree cover and having greater riparian area setbacks for the forest industry would ensure that the slopes along the creeks have a better chance of remaining stable. Having stable riparian areas naturally manages the nutrient loading towards the creeks and lakes.

Outcome Five: Integrate water more efficiently and effectively into Land Use Planning.

What do you value most about your watershed (e.g., water for drinking, water for aquatic species, water for recreation, water for business, wild food harvesting, etc.)? Are any of these values threatened by development in your watershed? If so, how could the Watershed Security Strategy help people in your watershed protect those values?

What is the best way to communicate information about WSA tools with you (e.g., written materials, webinars, videos, etc.)?

How do you think that water should be considered in land use planning?

Mandate water providers to develop source water assessments and implementation plans with strategies for sustainable management. These plans include high risk areas, vulnerability, and protection zones that highlight areas above water system intakes. Then, transfer this information to the provincial modernized land use planning and related mapping systems for use in all crown land and water planning applications. There is a tangible benefit from inter-agency information-sharing through multi-layered digital mapping of jurisdictions, resources, etc.

Determine if the Environmental Flow Need is to be achieved, or if the objective is to maintain the normal naturalized flow in the stream throughout the year. The former will take significant investment in upper watershed storage by the Province, while the latter means replicating the flow that would be there if there were no upper watershed storage reservoirs or diversions to downstream licenses.

Assess and use cumulative impacts. Watershed assessments are not completed for each stakeholder nor applied at a landscape level so there are unknown cumulative impacts occurring in our community watersheds. The recent exceedingly high storm events in the Tulameen and Coldwater Rivers were greater than ever seen, and are likely to have been made worse by any combination of unmeasured disturbance drivers as identified by the Province:

Forestry: equivalent clearcut area, location of harvest, vegetation replacement, roads, stream crossings, altered drainage, soil disturbance

Range: water extraction/diversions

Agriculture: roads, water extraction/irrigation/diversions, vegetation alteration, dikes

Urban: stormwater systems, roads, water extraction, percentage of impervious surfaces, dikes/dams, regulated systems, vegetation alteration

Oil/gas extraction: roads, borrow pits, water extraction, vegetation alteration, drilling requirements, drainage diversions

Mining: roads, drainage alterations, borrow pits, water extraction, vegetation alteration, tailing ponds (including seepage), open pit / underground workings drainage, channel diversions associated with works

(Wilford, 2013)

Cumulative effects must be assessed and included in land use planning.

Outcome Six: Reset the water supply and demand relationship.

What can water users in your watershed do to reduce the amount of water they use?

Conservation through metering and pricing may be necessary in water poor areas of the province, but most water utilities are not in that condition. Water supply by utilities is a service to the community. Universal metering and higher pricing controls has the potential to treat water like a commodity and can lead to conflict between water utility and the public. A better question to ask is *“How can we encourage our culture to value water?”*. The root of inefficient water use comes from a devaluation of water rather than a question of affordability. Asking the public to choose between financial burden and clean drinking water misses the point of using a fair share of a community service to meet the basic needs for all customers.

The well-known tenet that you cannot manage what you cannot measure applies to the current water balance. An accounting exercise is needed for all watersheds to document the average available runoff, the drought and flood frequency numbers, the instream flows that need to be protected, and how those flows might reduce in a drought scenario. Awareness of a watershed's water balance will increase the public's ability to see the impact of high-water consumption.

Ideally, the ability to train the public to be knowledgeable and adaptable is much higher if there is a strong and trusting relationship between the public and the water utility.

How could the Watershed Security Strategy help implement these solutions?

A reconciliation of available water is required to inform land use decisions. The Province historically had two components of the water use in their licensing structure, IRRIG (irrigation) and WWLA (domestic). The recognition of water for in-stream needs (Environmental flow needs) or CONSERVATION has increased over time. Unfortunately, the desired CONSERVATION flow is not always licensed or well-known for many watersheds. A reconciliation of licensing in watersheds is needed so that the flow allocations for CONSERV, IRRIG, and WWLA are apportioned based on what is available from the resource.

Another critical issue related to water is the provincial Agricultural Land Reserve. The Province locked in the land use as ALR in 1973. The allocation of sufficient water for irrigation of those ALR lands was not done at the time. Yet, in the Okanagan, many water utilities hold significant IRRIGATION licenses based on the available land area for farming that was set up between 1900 and 1920. Typically, local government has insufficient understanding of available water when making decisions on land use.

By understanding watershed needs and capacities through the lens of climate change and other pressures on the resource, water managers may adjust operations and allocations. Successful conservation efforts may be realized through resource management expertise, regulation, education and enforcement in simple terms. This could come from a lead provincial agency or from a local governance model. The water supply and demand relationship, coupled with climate change and reduced snowpack, is driving us to require more upper watershed reservoir storage in the near future.

Outcome Seven: Improve habitats for aquatic ecosystems.

In your opinion, what actions would best support the restoration, rehabilitation and improvement of water and aquatic habitats in your local watershed? Please provide more details on your answers and include examples where possible (e.g., if you included “provide training”, please discuss what support for this would look like and the types of training or subject areas that would be most useful.)

Senior Government must decide the level of in-stream flow required in creeks to support fish habitat. The natural rate of flow in most mid to smaller creeks in the BC southern interior can dry up during a drought such as the one in 2021. The majority of flow for many creeks in 2021 was maintained through the release of stored water from upper watershed reservoirs. Environmental Flow Need targets have been determined for many creeks, but the next step of identifying the water storage volumes and costs to construct storage have not yet been taken. As a result, there will be false expectations about the amount of water available for the uses of conservation, irrigation and domestic purposes. Because all of this is tied to local storage, investment must occur in storage with costs covered from a broader source of funding.

Other actionable items include:

- Protection from invasive species: inspect all boats entering the province for known invasive species like Zebra Mussels and Quagga Mussels.
- Enact legislation setting stream setbacks and riparian areas sufficient to maintain natural filtration and habitat for amphibious and aquatic species.
- Manage community watersheds by funding wildfire reduction and implementation plans.
- Protect all streams and water courses appropriately. All stream orders, including non-classified drainages, should be treated similar to fish bearing streams standardizing the requirement for additional riparian buffer on all drainages in the high vulnerability zones of our community watersheds.
- Re-orient legislation like the Forest and Range Practices Act to prioritize water quality and quantity.

Outcome Eight: Integrate Indigenous Knowledge into decision-making and management.

What do you or your organization need to foster respectful sharing and consideration of science and Indigenous Knowledge within your organization?

Does your organization practice the respectful sharing of knowledge? If so, do you have any lessons you may share?

Capacity and training: we need training on how to share and use Indigenous Knowledge.

The Provincial government could fund First Nations to develop local training courses or programs on indigenous knowledge of water management that is appropriate to share and use.

Outcome Nine: Strengthen education and outreach about managing water in B.C.

What is the best method for you, your community or organization to receive and share information?

Please list what additional watershed knowledge and/or tools would be most useful to you.

Create a regional or province wide platform for hosting watershed data. Include spatial information to indicate the scope of a dataset.

Coordinate the population of the watershed data platform by reaching out to water managers. See the success of the Integrated Cadastral Information Society and their approach to data sharing and management.

Don't create new tools, expand existing ones – the water management community has varying levels of data gathering and sharing. The tools we need are stuck in community silos. Seek out the best tools already in use and train other communities in how to use them.

Take the lead in capacity building and coordination. Empower existing water managers by offering training in tools already in use by their neighbours. Scale existing tools and methodologies across the province.

Outcome Ten: Create a Watershed Security Fund.

How would you prioritize investments in watershed security if more funding is directed toward supporting a Watershed Security Strategy?

What do you see as the main benefit(s) British Columbians would obtain through government investment in watershed security?

What opportunities and priorities do you think a Watershed Security Fund could focus on?

Fund more than just studies. A watershed security fund may be useful, however if it is only used for studies, it will disappear with the projects shelved due to high project costs and no one contributing.

Consider using the Security fund as seed-money like the Small Water Projects grants issued each year by the Okanagan Basin Water Board. Their list of successful, but small projects over the past 10 years is impressive and has raised the level of monitoring and knowledge throughout the Okanagan.

Create bridges between First Nations initiatives and water managers through project partnerships, increased knowledge sharing, and joint monitoring.

Ensure a non-token financial commitment of at least \$100M per year to fund appropriately scaled improvements such as expanding upper watershed storage.

A key area that the fund should be directed to is in securing the natural baseline flows in streams through storage expansion, particularly having water available for Environmental Flow Needs during drought scenarios.

Use the already developed Source Water Protection Plans and Master Water Plans to identify community priorities.

References

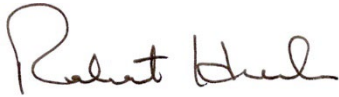
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Closing remarks

We thank the Provincial Government for the opportunity to comment on this initiative. We agree with the need for watershed security. The challenge we have will be our ability to influence all stakeholders in our watersheds to adjust their activities to protect our water. Watershed Security will require the support of other Provincial ministries, the engagement of watershed stakeholders, and the empowerment of First Nations.

Water Supply Association of BC
Watershed Security Strategy Committee



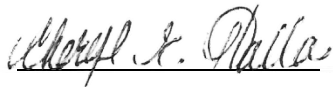
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