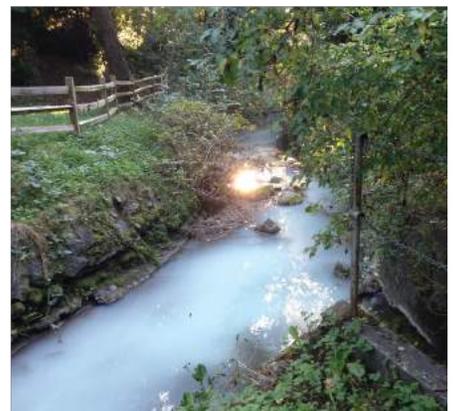
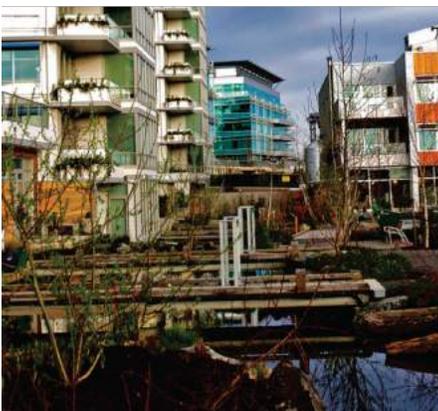




Water Sustainability and the City

Leveraging B.C.'s Water Sustainability Act in Support of Urban Watershed Management

EXECUTIVE SUMMARY



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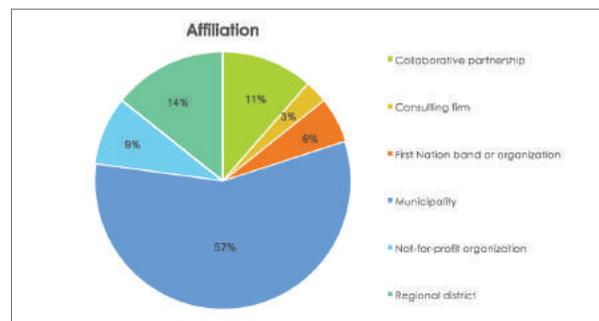
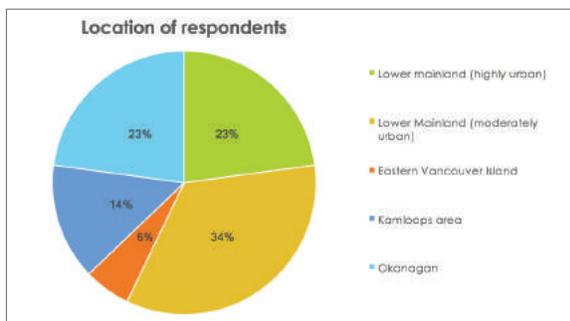
Over three-quarters of the population in British Columbia live in urbanized watersheds. These watersheds provide a variety of ecological, health, social, economic and cultural functions for the people and ecosystems that depend on them. Yet, despite the important role these watersheds play, they are some of the most degraded watersheds. Local governments are well-positioned to influence environmental outcomes in watersheds that fall within their jurisdictions. But many watershed practitioners working in local governments have expressed concern about their ability to mitigate environmental pressures that are resulting in watershed degradation in urban areas. Urban watershed sustainability—keeping watersheds in conditions to sustain the functions that contribute to human and ecological well-being for current and future generations—is a challenge.

B.C.'s new *Water Sustainability Act (WSA)* enables the development of regulatory and policy tools that, if effectively seized, could increase local governments' abilities to more sustainably manage local watersheds. Many of these tools have yet to be developed. This report identifies opportunities for the development and implementation of regulations, policies, and programs under the WSA that could address challenges hampering watershed sustainability in urban areas across B.C.

In order to identify these regulatory and policy interventions, we first needed to answer the following questions:

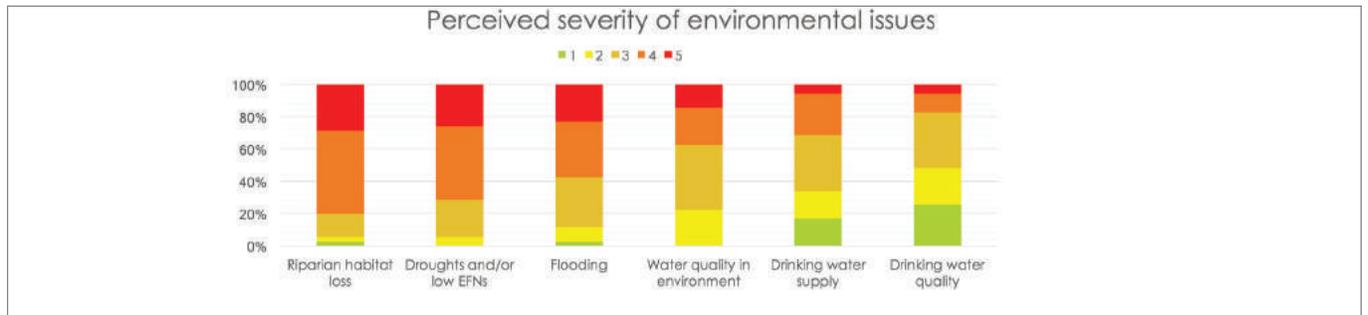
1. What environmental challenges are prevalent in B.C.'s urban watersheds and what activities are causing them?
2. What tools currently exist to address those challenges?
3. Why do local governments, despite the tools that currently exist, continue to experience challenges in addressing watershed degradation?

We sought to answer these questions by reviewing research and literature on urban watersheds, and by asking urban watershed practitioners for their perspectives. Specifically, we sent an online survey to 79 urban watershed practitioners throughout B.C. and conducted follow-up interviews with five survey respondents. Respondents were primarily from municipalities, followed by regional districts, governmental agencies or collaborative partnerships, not-for-profit organizations, First Nations, and consulting firms. They worked in urban watersheds in the Metro Vancouver area, Eastern Vancouver Island, the Okanagan and the Kamloops areas.



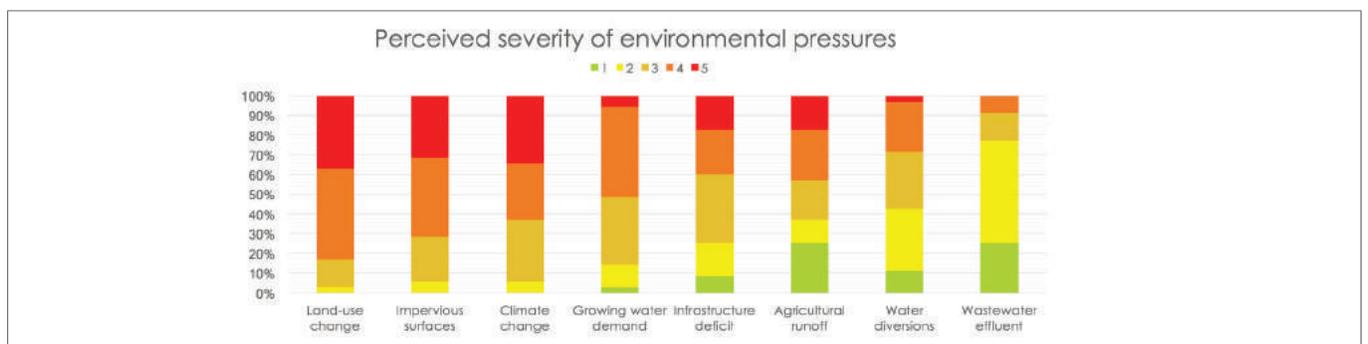
Environmental Challenges

Respondents were particularly concerned about riparian habitat loss and degradation: 80% of respondents said this was either a “notable” (4 out of 5 in severity) or “very significant” (5 out of 5 in severity) concern. Drought and low streamflow (71% of respondents said this was a “notable” or “very significant” concern) was the second largest concern, followed by flooding (57% of respondents said this was a “notable” or “very significant” concern). Generally speaking, respondents in the Metro Vancouver area were most concerned about riparian habitat degradation. Respondents in the Okanagan and Kamloops area were much more concerned about their drinking water quality and quantity than their counterparts from the Metro Vancouver area and Eastern Vancouver Island.



Environmental Pressures

Land-use change was rated as the most significant pressure causing environmental degradation. 83% of respondents said this was a “notable” or “very significant” threat. Only one respondent said it was a mild threat (2 out of 5 in severity) and no one said it was “not at all” a threat. Impervious surfaces was identified as the second most prevalent pressure (71% of respondents said it was a “notable” or “very significant” threat), followed by climate change (63% said this was a “notable” or “very significant” threat). Respondents from urban areas with high population densities (i.e. with an average population density of over 1,000 people per square kilometer) thought impervious surfaces were a bigger challenge than land-use change. Respondents from “moderately urban” (250-999 inhabitants per square kilometer) municipalities in Metro Vancouver were the most concerned about land-use change, with 100% of respondents identifying land-use change as either a “notable” or “very significant” threat.

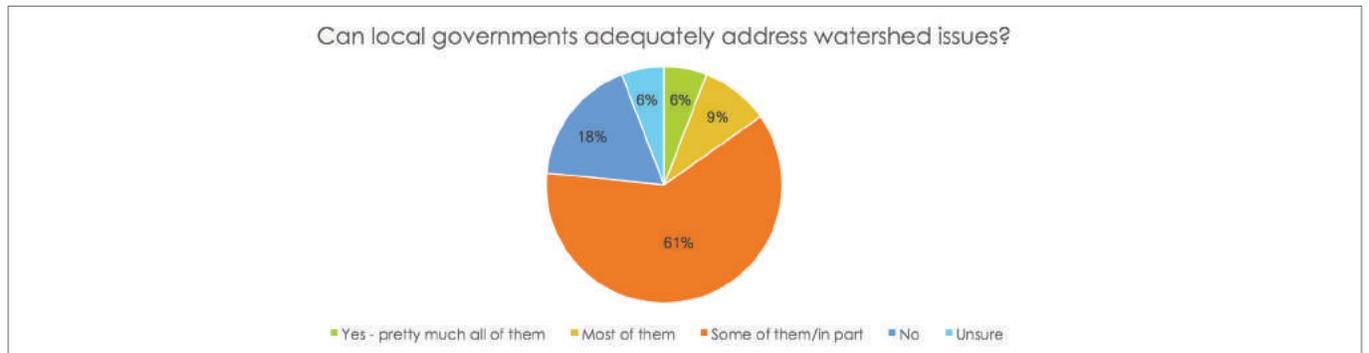


Existing Tools

Local governments have a number of tools at their disposal to address the environmental issues—and pressures that give rise to them—identified above. Although not an exhaustive list, this report identified three categories of tools that are commonly deployed by local governments. These tools are not necessarily exclusive from one another and may be used in combination.

- 1. Bylaws and Development Permit Areas.** Provincial legislation gives local governments authority to regulate in a number of areas such as land-use change, drainage, and in some matters related to the natural environment. In the vast majority of the cases, while provincial legislation does give authority to local governments to regulate, it does not require regulation to protect environmental values (with some exceptions, e.g. local governments must comply with the federal Fisheries Act). When and if local governments do create regulations intended to improve watershed outcomes, it cannot violate provincial legislation (e.g. the Right to Farm Act).
- 2. Water demand management programs.** Local governments may use a combination of bylaws and other measures—such as economic and financial measures—to encourage water conservation. For example, they may establish bylaws that require efficient plumbing and fixtures in new developments or bylaws to minimize run-off volumes generated by developments. Economic and financial levers include establishing conservation-oriented pricing for water delivery services or requiring water meters for commercial and/or domestic users.
- 3. Infrastructure funding.** Governments across Canada are reinvigorating their commitment to infrastructure investment, after several decades of underinvestment has led to a large “infrastructure gap.” In addition to traditional “grey” infrastructure (e.g. engineered works such as pipes, sewers, and detention ponds), there is an increasing recognition of the role that “green” infrastructure (e.g. natural and constructed features, such as urban forests, park space, wetlands and riparian zones, green roofs, rain gardens, bioswales, and retention ponds) can play in improving urban watershed health—for example by minimizing run-off from precipitation events. Local governments may apply to federal or provincial grants to help with these infrastructure investments. Despite this financial aid, local governments pay a much larger share for funding infrastructure today than they did several years ago. To fund these investments, some have opted to institute cost-recovery programs such as stormwater or drainage fees.

Management Challenges



Despite the tools that local governments have to address the environmental challenges and pressures that give rise to them, many watershed practitioners working in—or closely with—local government have expressed that there remain significant barriers to protecting watershed health in B.C.'s urban areas. When asked “Can local governments adequately address watershed issues,” the vast majority said “some of them/in part”, while just under one fifth of respondents said “no.”

Using data collected in the survey and through one-on-one interviews, we identified seven barriers that impede the ability of local governments to plan for and manage watersheds sustainably.

- 1. Voluntary vs. mandated protections.** Provincial legislation has enabled local governments to make regulations to protect environmental and watershed health, but, by-in-large, has not required local governments to do this (with some exceptions). Survey and interview respondents expressed concern that this has resulted in a large discrepancy between local governments with regard to policies and actions that protect urban watersheds. Some noted how, without provincial standards, local decision-makers may resist enacting protections, or there is an increased likelihood of special interests influencing decision-making. The notion that many local governments lacked “political will” was brought up by several participants.
- 2. Long-term watershed planning vs. short term political cycles.** Restoring healthy watershed processes can take a long time. The beneficial impacts of a restoration project might not reveal themselves for as little as a few months to a year, to as many as over a hundred years. However, local governments are under pressure to show their constituencies how public funds are benefitting the community on a much shorter term, or risk losing elections. Survey and interview respondents noted that this sometimes results in other priorities—where benefits manifest themselves on a much shorter term—taking precedence over sustainable watershed management.
- 3. Piecemeal approach.** Many of the tools that exist for local governments to influence activities that impact watershed health are tools intended to prevent future degradation (i.e. they are aimed at mitigating harm caused by new developments) and are site specific (i.e. they are enacted on a lot-by-lot basis). Although these interventions may help to stop or slow harm, they are typically not enough to restore the impacts of past degradation. This lead some participants to express that it is hard to make gains on overall watershed health— in some cases necessary for watersheds to function sustainably.

4. **Lack of resources to support on-the-ground work.** Survey participants identified a lack of financial resources as the largest challenge to being able to sustainably manage watersheds, with 71% of respondents saying this was either a “large” or “very large” barrier. Survey and interview participants indicated that constrained resources inhibited their ability to perform activities such as implementing and enforcing rules and policies, monitor watershed health, conduct education and outreach, and ensure the continuity of watershed programs in general. Participants noted that constrained resources not only affects local governments, but that it also hampers provincial government staff from fulfilling its duties with regard to watershed management and protection (e.g. conducting water monitoring and science, issuing and reviewing licenses, enforcing rules). This in turn can make put more of a burden on local governments.
5. **Accountability of provincial government.** Several interview and survey participants noted, without prompting, that they perceived an accountability gap among higher levels of government with regard to fulfilling their duties and enforcing their own rules. Participants identified this barrier as most salient with regard to the provincial government, although some participants did identify the federal government as well. This was noted in particular with regard to enforcement, especially in regards to oversubscription of water, illegal water withdrawals, unmonitored discharges into water bodies, and activities on crownland that compromise watershed health. Some participants shared a concern that this undermined local governments’ abilities to protect or restore watersheds within their jurisdictions.
6. **(Un)collaborative decision-making.** Participants identified a need for collaborative watershed decision-making between different levels of governments, but many noted that current mechanisms and supports were not adequate. There is no overarching policy for collaborative or delegated decision-making in B.C., and consequently there is a large variation across the province with regard to what kind of mechanisms exist and who is involved in decision-making. Some regions have formal watershed entities with legal status and funding, others have informal groups with some funding but little capacity, others have *ad hoc* committees with little funding and capacity for collaborative watershed decision-making. In some regions, representatives from multiple levels of government are at the table. In other regions, local governments make decisions largely without conferring with provincial and federal governments or First Nations. Some participants relayed that First Nations are often excluded from local watershed decision-making altogether, and that when they are included, it is in a consultative, not collaborative, manner.
7. **Fragmented water framework.** In B.C., there are a number of laws and regulations that pertain to or have impacts on urban watershed management (e.g. the Drinking Water Protection Act, the Forest Range Practices Act, the B.C. Building Code, etc.). Some participants expressed concern that requirements under other laws or regulations inhibit their ability to protect urban watershed health due to conflicting indications. Other participants noted how the current framework is difficult to navigate, and hard to know which statute takes legal precedence when making decisions. Several participants relayed the need for the Water Sustainability Act to consider and build upon previous watershed planning work done at the local level.

Towards Solutions: Leveraging the Water Sustainability Act

Although the above are not insignificant challenges, there are interventions that can help to address them. The new *Water Sustainability Act* (WSA) presents a timely opportunity to do this. As provincial staff continue to develop regulations, policies, and programs to support implementation of the Act, local governments would do well to seize this opportunity. This report suggests that watershed practitioners working in or with local governments would be much better positioned to sustainably manage urban watersheds if the Province were to develop regulatory and policy tools that:

1. Connect land and water through Water Objectives
2. Improve coordination and transparency in decision-making
3. Secure adequate funds for watershed management
4. Ensure water is protected for nature
5. Facilitate monitoring and reporting on watershed health

Specifically, the report outlines 14 recommendations (and several sub-recommendations) in these areas that, if effectively implemented, will increase the capacity of local governments to address and reverse urban watershed degradation. We suggest that local governments advocate to the Province to take action on those recommendations.

These recommendations are:

1. Develop regulations that use performance-based criteria to establish objectives for water quality, quantity and ecosystem health.
2. Develop Water Objectives to apply to urbanized watersheds.
3. Monitor and review implementation of Water Objectives.
4. Develop guidance and processes for local governments on how watershed decision-making will be affected by implementation of the Water Sustainability Act.
5. Develop watershed governance pilots in priority areas, which could form the basis for 'watershed entities.'
6. Establish a third-party, capacity-building entity to coordinate and facilitate knowledge transfer within and between watershed entities and different levels of government.
7. When Water Sustainability Plans are designated, ensure plans consider and incorporate the efforts of previous watershed planning efforts (e.g. Watershed Assessment & Response Plans, Water Use Plans, etc.) and local government Community Plans and bylaws.
8. Review the current fees and rates structure set out in the Water Sustainability Fees, Charges and Rentals Regulation to determine whether current structure is high enough to procure necessary funds to fully implement the Act.
9. Work with a Sustainable Funding Taskforce to explore and test implementation of other sustainable funding mechanisms for watershed management at the provincial and watershed

- level, such as increasing revenue from local tax bases, Crown resource rentals, etc.
10. Establish legally enforceable regulations to protect environmental flows.
 11. Develop an Environmental Flows Taskforce with participation of local government, First Nations, and the federal government to establish whether existing water allocations are sustainable.
 12. Identify opportunities to coordinate and streamline water data from different monitoring operations to enhance knowledge-sharing and reduce duplication of efforts.
 13. Require all water users to monitor water withdrawals and report their use to government.
 14. Compile a summary of water data into a State of Our Waters report, a publicly accessible report issued every five years.

The recommendations were presented to over 50 watershed practitioners at a one-day forum in October 2017 for input. This feedback, while valuable, does not constitute official consultation. There was general agreement that the recommendations above would be helpful. Those present reiterated that a need for resources, collaboration and sharing of responsibility, clarity and direction and continuing education as key elements to support the successful implementation of the Act.