



# Policy Brief 1

## *Governance of Drinking Water Systems In Rural Newfoundland and Labrador*

### **SUMMARY**

Governance of drinking water systems in rural Newfoundland and Labrador (NL) needs improvement. Prominent concerns identified through this research include: a lack of appropriate mechanisms to monitor and report on the state of drinking water systems, including drinking water quality measures and improved management of boil water advisories; a need for more integration and coordination of actors; an implementation gap in policies and regulations; and a need for increased incentives and support for regional approaches.

Recommendations include: improving the Drinking Water Quality Index, creating a better ranking system and increasing communication surrounding boil water advisories; and increased capacity building (e.g. human, financial, technical) at the local level for policy implementation, and regional collaboration. All NL drinking water stakeholders (e.g. local, provincial and federal governments as well as academics, non-governmental organizations, industry and the general public) have a role to play in improving drinking water systems to ensure that the right to safe, clean and reliable drinking water is satisfied in rural NL. This web of actors must better align and coordinate their efforts in more integrated, multi-level governance collaborations to achieve sustainable rural drinking water systems in rural NL.

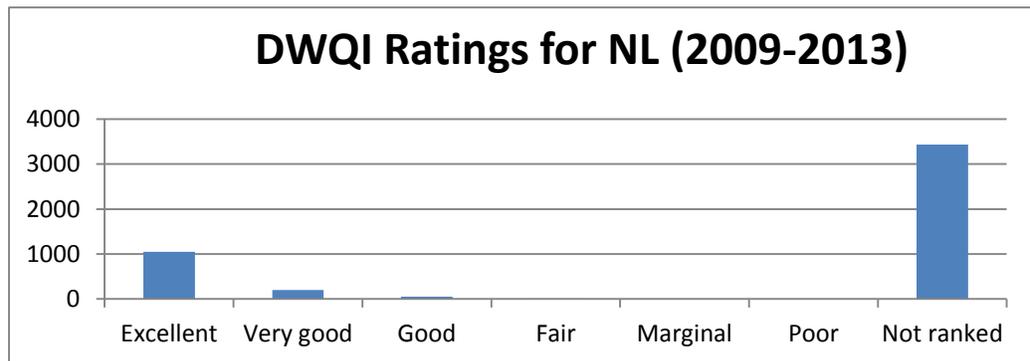
### **BACKGROUND**

Governance refers to the set of actors (government and non-government), structures and processes in place to direct and manage drinking water in rural NL. Researchers and practitioners alike have stated that the issue with the management of drinking water systems is a governance problem. How drinking water systems (including source water supplies, treatment and distribution infrastructure, etc) are governed and subsequently managed makes a great deal of difference to the sustainability of the systems. The following discussion on policy and governance includes legislation, guidelines, programs and decision-making tools that emerged as specific points of interest in the research findings. Suggestions are also made for how governance tools, structures and processes may be improved. The findings in this brief are based on the results of the 2013-2014 research study entitled *Exploring Solutions for Sustainable Rural Drinking Water Systems*.

## AREAS OF CONCERN

### WATER QUALITY MEASURES

The Drinking Water Quality Index (DWQI), which is used as a key way of reporting on water quality excludes approximately 70% of public drinking water systems, as those communities who are on boil water advisories (BWAs) and/or have high THMs or HAAs do not receive a ranking. Given that most communities that have a DWQI ranking are labelled as excellent or very good, the DWQI misrepresents the drinking water reality in many NL communities. The DWQI is a poor communication tool that is inherently biased. Accordingly, communities, researchers, or governments cannot use the DWQI as a baseline metric of drinking water quality or the effectiveness of drinking water systems in NL, and as a result the index has limited utility for policy development, implementation, and evaluation.



### MANAGING BOIL WATER ADVISORIES

The boil water advisory (BWA) system in NL was designed to protect the public. Unfortunately, in some ways, it is being used as a temporary, or worse yet a long-term, solution by communities when the funds or expertise are not available to solve the problem. The BWA rationales are not being adequately communicated to residents, making it difficult to determine whether they are issued for precautionary reasons or as a result of a contamination in the system. Community leaders have noted chronic or long-term BWAs as a public trust issue. Furthermore, when there are long-term (and very long-term) BWAs, communities sometimes stop communicating these advisories to residents. While BWAs alone should not be used to determine water quality, unfortunately, the public often view BWAs as indicating an issue with their water. Improved communication and education about BWAs and implications for water use are needed when there is an issue, as well as mechanisms to lift BWA designations faster.

### INTEGRATION AND COORDINATION

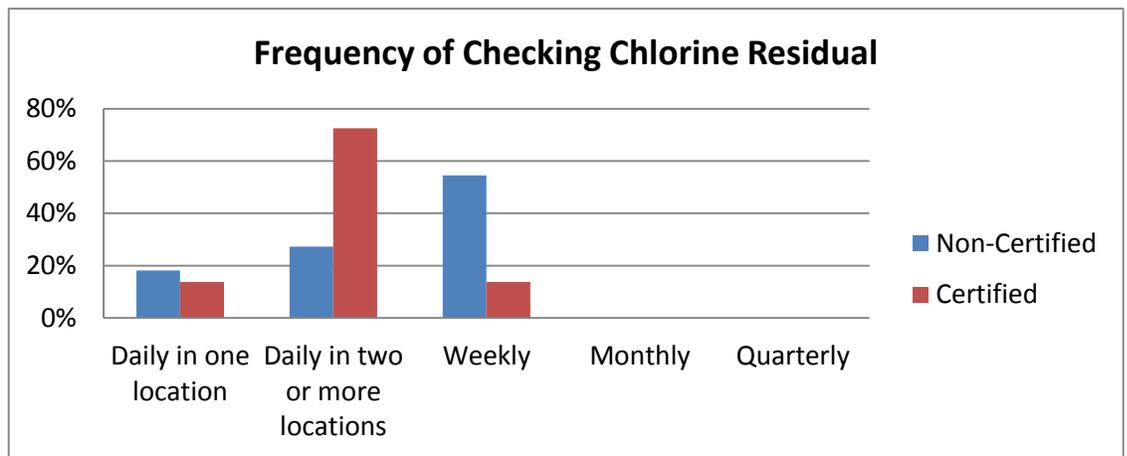
Many local governments believed that the Province could be doing more for local water systems, and likewise research findings and provincial representatives point to the need for improvements at the municipal level. There is also some confusion on the part of local government officials over their role in managing drinking water systems. Inadequate communication between local and provincial actors is also noted as a concern. It seems that when they can and when feasible, the provincial government, especially the Department of Environment and Conservation- Water Resources Management Division, is willing to accommodate communities when requests are

made. However, there are few formal channels for local government to voice their concerns to the provincial government, or to strategically work with provincial actors to devise future directions for drinking water in the province and in their communities and regions in a true multi-level governance arrangement. Also, the provincial government often lacks in human resources to properly manage the very large regions they are responsible for and to meet all requests that are made of them (e.g. getting off BWAs faster).

Data management is an important area where progress has been made but further improvements in integration and coordination are needed. For example, despite its promise as a communications tool, many community representatives are not familiar with the Water Resources Portal. Furthermore, an integrated system where municipalities have electronic access to the as-builts and maps of their infrastructure, available not only in their own town offices but also at provincial regional offices (e.g. regional offices of the Department of Municipal and Intergovernmental Affairs), would facilitate discussions between officials from both levels of government and provide back-up copies of key documents.

**IMPLEMENTATION GAP**

Research findings suggest that implementation of provincial level policies are lacking. Firstly, aspects of the permits to operate are not being followed; most notably the requirement of water operator certification is not being achieved in all communities. Survey results from 199 communities in the province indicated that 35% of local service district operators and 21% of municipalities of 1,000 or less have water operators without certification or even enrolled as an operator in training under the Operator Education, Training and Certification (OETC) program.



Secondly, many communities do not enforce the banning of activities in their Protected Public Water Supply Area (PPWSA). Furthermore, having PPWSA designation does not always foster more outreach or resident knowledge regarding related restrictions, other than signs being posted about the presence of the PPWSA. In relation, there is also insufficient capacity at the provincial and local levels for the creation of watershed management plans, which would aid in the protection of source water supplies. Lastly, insufficient financial resources dedicated to supporting implementation and

enforcement of provincial programs and policies were reported as an issue. For example, the OETC program is an important part of NL’s *Multi-Barrier Strategic Action Plan*. However, attracting and retaining qualified operators can be a problem as there is often inadequate funding to make these positions attractive to qualified candidates. There is also no specific drinking water act for NL, which many other provinces have. Less vagueness surrounding drinking water management and operations in policy and regulation form could also improve implementation issues.

**REGIONAL APPROACHES**

Regional approaches are widely suggested as one type of solution to the issues experienced in rural NL related to limited finances and human resource capacity. Managing rural drinking water systems better without the certainty of sustained funding to meet increasing requirements and demands, will mean rural NL communities will have to be very efficient with limited financial and human resources. Multiple consultations, at both municipal and provincial levels and with experts during a Drinking Water Policy Workshop, revealed that when geographically feasible, regional approaches (e.g. sharing of infrastructure, operators, leak detection equipment, etc) must be employed for drinking water systems in the future. There have been some successful examples with multi-community watershed planning in the Gander Lake shared water supply and with equipment sharing and regional operator programs in other parts of the province. These can be used for education and planning purposes. Research results suggest, however, that a great deal “needs to be in place” before regional activities can occur. This includes arrangements in place to manage regional operations, such as meeting venues, decision-making structures and formal agreements. This will require facilitation, support and incentives.



**Wayne Bennett, Regional Operator**

**POLICY RECOMMENDATIONS**

**WATER QUALITY MEASURES**

1. Develop more functional and user-friendly tools for assessing the state and vulnerability of drinking water systems (e.g. water quality, infrastructure and operations).

**MANAGING BOIL WATER ADVISORIES**

2. Create a more effective advisory system for managing and communicating risks than the current BWA approach.
  - 2.1. Develop more descriptive advisories (e.g. a ranking system to differentiate between different types of advisories).
  - 2.2. Develop strategies to remove BWAs in a more timely manner once the issue of

concern has been addressed, including considering allowing communities to bring in at least one of the two samples required themselves to a NL Services lab, and only requiring one clean sample for those communities who put a BWA on due to low risk preventative mechanical reasons (e.g. flushing lines, small repairs, etc.).

3. Develop and implement a strategy to address remaining long term and very long term boil water advisories.

**INTEGRATION  
AND  
COORDINATION**

4. Increase opportunities for multi-level governance and dialogue at the local, regional and provincial scale, bringing together all levels of government as well as representation from other stakeholders such as non-governmental and industry groups. This would involve creating venues for integration, coordination and sharing information concerning water related matters.

**IMPLEMENTATION  
GAP**

5. Foster enhanced compliance with provincial drinking water policies and regulations. For example:
  - 5.1. Expand the Permit to Operate Drinking Water Inspection Program and make Permits to Operate publicly available on the Water Resources Portal.
  - 5.2. Provide more capacity (financial, human and technical) and opportunities for capacity building at all levels specific to enhancing compliance with water policies and regulations.
  - 5.3. Make self-reporting mandatory for public water system operators, so requirements under policies and regulations are clear.
6. Enhance stewardship of PPWSAs by local governments.
  - 6.1. Include PPWSA monitoring requirements and efforts taken to protect drinking water supplies in local level self-reporting.
  - 6.2. Encourage towns with supplies that are not designated as a PPWSA to do so.
  - 6.3. Provide outreach and education on the importance of, and measures for, protecting PPWSAs. Towns should explore potentials for partnerships with non-governmental groups to undertake these activities.
7. Implement Maintenance Assurance Manuals across the province with manuals that consider the particular challenges faced in small drinking water systems.

**REGIONAL  
APPROACHES**

8. Provide further incentives and sustained support for regional operators and other regional service sharing and drinking water management initiatives.

## FUTURE RESEARCH NEEDED

1. Feasibility of and options for water conservation programs and related outreach activities.
2. Feasibility of regional water operators and other regional approaches.
3. New governance options for source water protection and watershed planning.
4. Improved indicators for drinking water sustainability (e.g. how to improve the DWQI).
5. Accurate full cost accounting for drinking water service provision.
6. Feasibility of a specific drinking water act for NL.

## SOURCES FOR FURTHER READINGS

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## ABOUT THIS POLICY BRIEF

This policy brief is part of a two-year research project entitled *Exploring Solutions for Sustainable Rural Drinking Water Systems*. This project focused on communities of 1,000 residents or less in rural Newfoundland and Labrador (NL) and the unique challenges these communities face concerning their drinking water systems. The project also explored appropriate solutions to identified challenges. The scope of this interdisciplinary project was large, exploring four main components of drinking water systems: 1) source water quality and quantity; 2) infrastructure and operations; 3) public perceptions, awareness and demand; and 4) policy and governance. It is important to acknowledge that these aspects of the drinking water system are interrelated.

This research was led by Dr. Kelly Vodden (Memorial University, Grenfell Campus) in collaboration with Municipalities Newfoundland and Labrador (MNL) and Professional Municipal Administrators (PMA). Funding support from the *Harris Centre – RBC Water Research and Outreach Fund* and the *Mitacs-Accelerate* internship program is gratefully acknowledged. Please see the project website for the full list of partners as well as associated reports and resources: <http://nlwater.ruralresilience.ca>

For the full final report for this project that includes more information on all topics discussed in this brief, please see: [http://www.mun.ca/harriscentre/Rural\\_Water\\_Report.pdf](http://www.mun.ca/harriscentre/Rural_Water_Report.pdf)

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