Best Practice Guidelines for Approving New Small Water Systems

Setting the Stage for Sustainable Water Service Provision

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1.0 WHAT ARE THESE BEST PRACTICE GUIDELINES FOR?

Why are these best practice guidelines (BPG) needed?

Throughout the province, many existing small water systems struggle to provide safe and reliable drinking water to the communities they serve. These systems face a host of challenges, including:

- inadequate funding
- inability to achieve economies of scale
- inadequate supply
- overly complex system design for the size of the community
- inability to meet drinking water quality guidelines
- remote locations
- lack of qualified operators/managers
- aging infrastructure

These challenges are compounded by the fact that many of these issues are exceedingly difficult to address after a system has been created. For existing systems, decisions that were made 20 or 30 years ago when the system was created, may limit the ability of the system to provide safe and reliable drinking water. These small systems may have been developed to meet the standards of the time, but as standards have evolved and changed over the years, these systems have not had the organizational or financial resources to meet new requirements.

Consequently, there is now a growing desire, particularly in unincorporated areas of the province, to ensure that similar situations do not reoccur. While these best practice guidelines (BPGs) have been prompted primarily by the experiences of regional districts dealing with failing small water systems, this document is just as applicable to municipalities[1].

When approving new small water systems, the focus should be on ensuring sustainable water service provision. This gives new small water systems the best chance of being sustainable – ensuring systems have the capacities (organizational and financial) to meet future challenges such as aging infrastructure or the introduction of new drinking water standards.

These BPGs have been developed to answer the following question:

What can regulatory authorities do before a new small water system is approved to help ensure its sustainability?

The focus here is on the approvals process, a single point in time, as opposed to the on-going monitoring of system operations. To answer this question and identify related best

[1] This document would also be applicable, to some degree, to other entities such as the Island's Trust and Improvement Districts

practices, interviews[2] were conducted with each of the regulatory authorities (i.e., regional districts, health authorities, the Deputy Comptroller of Water Rights, and Provincial approving officers) as well as with a representative from the development community. When asked about the current approvals process for creating a new small water system, interviewees identified a number of key needs:

Coordinated communication of practices and regulations - Interviewees felt a general lack of coordinated communications across agencies and stakeholders around the approvals process.

Complete and consistent local government policies, plans, and regulations - Local governments regulate community development at many levels, from broad regional growth strategies to detailed design standards in Subdivision and Development Servicing Bylaws. To maximize effectiveness, these should all work together to promote sustainable community development; however, it is common for local governments to have only a patchwork of policies, plans, and regulations in place.

Local government organizational capacity – Developing and implementing policies, plans, and regulations to support the creation of sustainable communities requires significant organizational capacity (e.g., a strong leader, financial resources, and human resources). Local government interviewees noted that it can be challenging to garner the necessary organizational capacity to both plan properly for the future, and address immediate problems with existing water systems that are failing.

Regional servicing strategies – In many regions of the province, there are multiple organizations providing water services (i.e., local governments, irrigation/water districts, private water utilities, and water users' communities). Interviewees questioned the overall coordination of water servicing plans across multiple water purveyors. Concerns were also raised over the coordination of water servicing and land use planning, particularly in areas where the water purveyor is not a local government and does not regulate land use. Regional servicing strategies would ensure a more coordinated approach to water resources management.

Clarity around assessing source water sustainability – Assessing the sustainability of a proposed water system requires evaluating the sustainability of the water source. Interviewees reported a need for more clarity around how to assess source sustainability, particularly for groundwater sources. They also noted a need for clarity around who should be responsible for conducting and reviewing the assessment.

Support for strong governance structures – Interviewees routinely identified good governance (i.e., clear decision-making processes and clear lines of accountability) as a key determinant of small water system sustainability. While governance was felt to be a key determinant of a small water system's sustainability, interviewees felt it is unclear which

[2] A total of 16 interviews were conducted with 39 individuals. Interviewees and interview questions were vetted through the Steering Committee.

regulatory agency is responsible for supporting good governance, and which regulatory approaches would make the greatest improvements in small water system governance.

The BPGs in Section 3 have been developed to address the overarching question (i.e., What can regulatory authorities do before a new small water system is approved to help ensure its sustainability?) in light of these needs identified by stakeholders.

What is a "small water system"?

These BPGs have been created to address issues that arise with the approval of a new "small water system", meaning any new, small drinking water system serving more than a single residence.[3] These guidelines apply to any small water system, whether it is publicly or privately owned.

While these BPGs have not been developed explicitly to address concerns associated with the creation of independent, individual water systems (i.e., individual lake intakes or wells – these are not regulated by the *Drinking Water Protection Act*, but are regulated as part of the land development approvals process) or larger community water systems, they are nonetheless relevant to the extent that they address broad sustainability issues.

How do these BPGs fit with other best practices?

Substantial work has already been done to establish best practices or guidance documents for various elements of water system approval. Most of these documents address the technical aspects of water treatment as well as system design and construction.

Regulatory authorities in BC currently reference and follow a number of guidance documents:

Technical (treatment, design and construction)

- Guidelines for Canadian Drinking Water Quality
- Drinking Water Treatment Objectives (Microbiological) for Surface Water Supplies in British Columbia (2012)
- Drinking Water Officers' Guide (2007)
- Design Guidelines for Rural Residential Community Water Systems (2012)
- Guidelines for Groundwater Reports and Well Testing in Support of a CPCN
- Guidance Document for Determining Ground Water at Risk of Containing Pathogens Including Ground Water under Direct Influence of Surface Water (2012)

Land development

- Guide to Rural Subdivision Approvals (2012)

Financial sustainability

- Financial Guidelines for CPCN Applications (2010)
- Financial Best Management Practice Guide (2012)

[3] The Drinking Water Protection Regulation defines a small system as "a water supply system that serves up to 500 individuals during any 24 hour period". There is currently consideration being given to changes to this definition.

These BPGs will help ensure a broader set of questions, beyond those dealing with system design and treatment, are considered when approving a new small water system:

- What kind of governance system will be in place? (Who will make what decisions, and how?)
- Is this pattern of land development sustainable? (How will this development affect existing water services? How will it affect the ability to provide water to future development?)
- Will the system be financially viable over the long-term?

To a large extent, these questions are already being asked. This guide consolidates, shares, and rounds out good practices that are already in use in various areas of the province.

2.0 USING THESE BEST PRACTICE GUIDELINES (BPG)

Who should use these BPGs?

These BPGs are for regulatory authorities involved in: 1) directly approving new water systems; and, 2) regulating development (which will be served by a community water system). More specifically, these BPGs are for:

- health authorities
- local governments[4]
- the Comptroller of Water Rights, and
- Provincial Approving Officers

While these BPGs are not intended to be directly implemented by developers or water purveyors, these guidelines provide useful information for these groups regarding factors that should be considered when proposing the creation of a small water system.

How are these regulatory authorities involved?

The predominant piece of legislation related to drinking water in BC is the *Drinking Water Protection Act* – this is where most reviews of drinking water issues typically focus. However, because the goal of this work is to define BPGs that help establish pre-conditions for system sustainability, it is necessary to look more broadly, not only at legislation that pertains to designing, constructing, and operating water systems, but also to legislation pertaining to land development.

Consequently, the relevant regulatory authorities here are not only health authorities and the Comptroller of Water Rights, but also local governments and Provincial approving officers (see Appendix A for further details).

Regulatory Authority	Role in Supporting Small Water System Sustainability
Local governments	• Regulating land development and community growth (zoning, OCPs, growth strategies, development permits, building permits) • Establishing design and construction standards • Establishing levels of service
Health authorities	• Issuance of construction permits • Issuance and oversight of operating permits
Comptroller of Water Rights	• Approval of the creation of new water utilities and water users' communities • Ongoing regulation of private water utilities, including approval of water user rates • Establishing design and construction standards

[4]Where applicable and appropriate, this includes entities such as the Island's Trust and Improvement Districts.

Provincial Approving Officers	• Approval of subdivision in unincorporated areas (approval is contingent on proving out a water supply)

When should the BPGs be used?

These BPGs are to be implemented *before* a new small water system is created. Therefore, regulatory authorities have a number of opportunities to influence the sustainability of a proposed system as part of the development approvals process. These opportunities arise at:

- re-zoning
- OCP amendment
- subdivision approval
- building permit issuance
- construction permit issuance
- operating permit issuance
- Certificate of Public Convenience and Necessity (CPCN) approval
- Issuance of a Certificate of Incorporation of a Water Users' Community

At each of these points, regulatory authorities have the ability to withhold approval if certain conditions are not met. Local governments have an additional and much broader influence on water system sustainability through both long range and current planning regulations. Therefore, these BPGs are relevant not only at the time of development approval for a specific proposal, but also when broader plans and policies are being developed.

While these guidelines have been developed for use *before* a community water system is approved, many of these BPGs nonetheless have relevance to existing small water systems.

The Ministry of Community, Sport and Cultural Development's Role

While the Ministry of Community, Sport and Cultural Development (MCSCD) does not have a direct regulatory role[5] in the approval of new community water systems, MCSCD will play an important supporting role. MCSCD's role will be to facilitate discussion among regulatory authorities, build capacity within local governments, and promote regional planning. Specific implementation responsibilities have not been identified under each BPG for MCSCD as they are not a regulatory authority, though their important role in supporting sustainable development is recognized.

[5] MCSCD does play an indirect role insofar as it manages legislation that enables local governments (i.e., *Local Government Act* and *Community Charter*).

3.0 BEST PRACTICE GUIDELINES

These best practices were established based on input from stakeholder interviews as well as a review of available literature pertaining to the issues and challenges surrounding existing small water systems. Interviewees were asked to:

- provide their perspective on small water system issues;
- describe their role in the approval of a new small water system;
- identify issues with the approvals process, and
- identify potential BPGs that could help address these issues.

From there, the BPGs were vetted through a Steering Committee comprised of representatives from regulatory authorities. The Steering Committee provided oversight throughout the BPG development process.

Each BPG includes the following parts:

- a brief description;
- an overview of the issues the BPG is intended to address;
- a description of how the BPG is expected to address these issues;
- implementation responsibilities for each regulatory authority; and
- sources of additional information.

The BPGs are:

- BPG #1 – Long Range Land Use Planning
- BPG #2 – Current Planning Regulations
- BPG #3 – Design and Construction Standards
- BPG #4 – Application Information
- BPG #5 – Water System Ownership Policies for Local Governments
- BPG #6 – Financial Sustainability
- BPG #7 – Coordinated Communications

This set of BPGs is unique among other guides related to water provision in the province (e.g., Drinking Water Officers' Guide, Financial Best Management Practice Guide, etc.) insofar as these best practices identify an important local government role. These BPGs identify areas of authority that local governments can use to support sustainable water service provision.

BEST PRACTICE GUIDELINE #1 – LONG RANGE LAND USE PLANNING

Establish long-range land use and community development plans that support sustainable water service provision.

Issues addressed by the BPG

Through experience, local governments have come to conclude that truly rural development (i.e., larger lots with individual services), as well as village and urban development (i.e., smaller lots with community services), can be sustainable. Any scale of development in between these two will likely face several challenges – arguably the most significant, is securing safe and reliable drinking water. Very small communities are up against multiple challenges with respect to water service provision, including financial constraints, an inability to achieve economies of scale, and difficulty recruiting and retaining qualified staff.

How the BPG addresses the issue

Community sustainability starts with land use planning. Local governments can significantly improve the sustainability of development by establishing long-range land use plans that direct and concentrate future development to identified "village" areas and protect rural areas. By concentrating development in specific areas, these plans should effectively eliminate the proliferation of small, unsustainable water systems.

Under these types of plans, most new development would, by design, be serviced via the expansion of an existing community water system, or by individual wells/lake intakes. If a new water system were to be warranted, it would be (or would have the potential to be) relatively large and therefore, have a better chance at being sustainable.

These plans not only need to consider the density of development, but also need to explicitly consider water servicing constraints and opportunities. This is particularly true in areas where there are known source quality and quantity issues, or in regions where the scale of development is significant. Importantly, the long-range planning process should prompt local governments to step back and consider water resources from a regional perspective – a departure from the usual practice of assessing water servicing on a site-specific basis as individual development applications are processed.

To be most effective, these long-range land use plans should also be established based on a good understanding of water resources. This will necessitate the establishment and maintenance of a database of information (including spatial information) on water systems and water quality and quantity issues. The creation and maintenance of such a database is likely best carried out at a Provincial level.

BPG #1 – Long-Range Land Use Planning

Implementation Responsibilities by Authority

Health Authorities	• Provide input throughout the planning process to ensure long range plans properly address water servicing and broader community sustainability issues.

Local Governments	• Adopt regional growth strategies that protect rural areas and concentrate development – include policies on infrastructure (including water).
	• Adopt official community plans that:
	  – protect rural areas and concentrate development
	  – include policies on infrastructure (including water services)
	• Ensure health authorities and the Comptroller's Office are consulted early in the planning process, and at all subsequent stages, to provide input on water servicing and broader community sustainability issues.
	• Ensure servicing issues are discussed as part of community visioning processes and build awareness among the public and elected officials regarding the relationship between land use planning, infrastructure, and overall community sustainability.
	• Where there are multiple improvement districts/irrigation districts/water districts/private utilities, coordinate local government land use planning with servicing plans.
	• Conduct water resources planning on a regional scale (see the Central Kootenay, Nanaimo, and Comox Valley Regional District examples on the following page).
	• Conduct an internal review of all local government regulations to ensure they each support sustainable water service provision and are consistent in their approach.
	• Inform land use planning by working with health authorities and Ministry of Environment to conduct desktop reviews of existing studies and data to better identify any potential or known water quality and/or quantity issues (see the Columbia Shuswap Regional District example on the following page).

Comptroller of Water Rights	• Reference local government long-range plans (including Water Management Plans) when judging the "public interest" of a CPCN application.
Provincial Approving Officers	• In communications with local governments, consider local government long-range plans when judging the "public interest" of a subdivision application. • Where there are no or ill-defined long-range plans, broadly consider the sustainability of the location and density of proposed development as part of the "public interest" in addition to directly considering servicing issues.

For further information, see:

Examples of how the best practices on page 12 could be implemented are listed below. Local circumstances will determine what specific approach is most appropriate.

Columbia Shuswap Regional District
Groundwater Mapping Project (2010)

This mapping project identifies areas with potential or known groundwater issues that are to be referenced during the development approvals process.
http://www.csrd.bc.ca/services/groundwater-monitoring

Regional District of Central Kootenay
Regional Water Management Plan (2009)

This plan guides decisions related to water system assessment, conversion and operation, helps the RDCK plan for future water needs, and prepare for climate change impacts.
http://www.rdck.ca/EN/main/services/water/rdck-water-systems/become-an-rdck-water-service.html

Regional District of Nanaimo
Drinking Water and Watershed Action Plan (2007)

This plan helps ensure the sustainable provision of water services by protecting surface and groundwater drinking water sources in the RDN.
http://www.rdn.bc.ca/cms.asp?wpID=2245

Regional District of Nanaimo
Water Budgets (ongoing)

These water budgets provide an assessment of the stress on a water source by providing estimates of water supply and amounts extracted.
http://rdnwaterbudget.ca

Comox Valley Regional District
Regional Water Strategy (2011)

This strategy establishes a regional water supply system that will be integrated with the regional growth strategy.
http://www.comoxvalleyrd.ca/EN/main/community/regional-strategies/regional-water-strategy.html

BEST PRACTICE GUIDELINE #2 – CURRENT PLANNING REGULATIONS

Local governments should adopt zoning and building bylaw regulations that support sustainable service delivery.

Issues addressed by the BPG

As outlined in BPG #1, community sustainability begins with land use planning. While long-range plans such as regional growth strategies and official community plans set the broader framework for community sustainability, detailed zoning and building bylaw regulations are still needed to ensure development promotes sustainability.

There are still areas of the Province that do not have zoning or building permit regulations in place. Without these bylaws, local governments are unable to regulate the particulars of development, including such basics as density and servicing. This allows development to occur with no formal local government interaction. However, in other areas of the province, where zoning and building bylaws are in place, they may not completely promote sustainable water services.

How the BPG addresses the issue

Zoning is perhaps one of the most powerful tools local governments have at their disposal. In addition to regulating use and density, local governments are able to establish servicing requirements for each zone. As well, local governments have broad latitude to negotiate with developers during the re-zoning process and can therefore make any number of requirements in support of sustainable development.

Building bylaws are also important local government regulations. Building bylaws create an opportunity for a formal point of contact with local governments, which should result in fewer small water systems being developed “under the radar”. Local governments can also require the issuance of a building permit to be contingent on meeting the servicing requirements of a Subdivision and Development Servicing Bylaw. The building bylaw, therefore, gives local governments an opportunity to impose design and construction standards for new water systems even if subdivision is not involved.

Critical to successful implementation will be ensuring a coordinated approach between local government and all provincial agencies that have some form of regulatory jurisdiction to ensure alignment with both local and provincial (drinking) water management outcomes.

BPG#2 – Current Planning Regulations
Implementation Responsibilities by Authority

Health Authorities	• Provide input during the development of zoning and building bylaws to ensure they properly address water servicing and broader community sustainability issues.
Local Governments	• Adopt zoning in all areas that: – controls shared interest developments by limiting development to one primary residence per lot (see the Columbia Shuswap Regional District example on the following page) – establishes servicing requirements by zone that promote the creation of larger water systems if a community system is warranted (or, at a minimum, provide a density incentive for creating a community system of a minimum size) (see the Cowichan Valley Regional District example on the following page) • Adopt building bylaws in all areas. • Establish development permit areas to protect water resources (e.g., to protect aquifers, encourage water conservation) (see the Regional District of Nanaimo example on the following page). • Ensure health authorities are consulted early in the development of current planning bylaws and policies, and at all subsequent stages of bylaw or policy development, to provide input on water servicing and broader community sustainability issues.
Comptroller of Water Rights	n/a
Provincial Approving Officers	• In communications with local governments, ensure all local government bylaws, including zoning, are met prior to subdivision approval. • Where there is no zoning in place, broadly consider the sustainability of the location and density of proposed development as part of the "public interest" (in addition to directly considering servicing issues and implementing the Subdivision Regulation).
All (including other Provincial regulatory agencies)	Coordinate and understand all stakeholder interests and approvals with respect to the protection and management of (drinking) water.

For further information, see:

Local governments have the authority to implement current planning regulations that will support sustainable water systems. The list provided below gives examples of how specific communities have implemented the best practices outlined on the preceding page. Local circumstances will determine what specific approach is most appropriate.

Cowichan Valley Regional District
Area A Zoning Bylaw No. 2000 (1999)

This bylaw provides an example of how to use a density bonusing framework to encourage developers to create larger and publicly owned water systems. Development densities increase if a "community water system" is provided, where a community water system means:

> *"a system of waterworks which serves 50 residential unit equivalents or more and which is owned, operated and maintained by an Improvement District under the Water Act or Local Government Act, the Cowichan Valley Regional District, or a municipality incorporated under the Local Government Act and where the water quality meets or exceeds the Health Canada Guidelines for Canadian Drinking Water Quality"*

http://www.cvrd.bc.ca/DocumentCenter/Home/View/8552

Columbia Shuswap Regional District
Scotch Creek/Lee Creek Zoning Bylaw No. 825 (2005)

This is an example of a bylaw that establishes a maximum number of single family dwellings per parcel, effectively eliminating shared interest developments. This bylaw also requires connection to a community water system in certain zones, where a "community water system" means

> *"a waterworks system serving 50 or more parcels…".*

http://www.csrd.bc.ca/inside-csrd/bylaws/scotch-creeklee-creek-zoning-bylaw-no-825

Regional District of Nanaimo
Area A Official Community Plan Bylaw No. 1620 (2011)
Section 12 – Development Permit Areas

This OCP includes a development permit area for protecting groundwater.

http://www.rdn.bc.ca/cms.asp?wpID=402

BEST PRACTICE GUIDELINE #3 – DESIGN AND CONSTRUCTION STANDARDS

Establish design and construction standards for community water systems.

Issues addressed by the BPG

The ability of a small water system to provide safe and reliable drinking water to its customers is dependent, in large part, on whether the system had been designed and constructed to meet accepted engineering standards. Unfortunately, it is not uncommon for existing small water systems to have issues due to sub-standard design and construction practices. While health authorities oversee the design of all new water systems and the Comptroller of Water Rights oversees (in conjunction with the health authority) the design of all new private water utilities, all local governments should also have up-to-date design standards for community water systems. These standards can include potability (treatment) standards, but also can include additional components such as fire protection, water storage and distribution requirements.

How the BPG addresses the issue

Design and construction standards for community water systems will help ensure that all systems are built to meet accepted engineering standards. These regulations will promote consistency in design and construction throughout the regional district or municipality – this is particularly important if a local government is interested in acquiring community water systems.

Furthermore, these regulations will apply to systems that are not regulated by the Comptroller of Water Rights, namely, shared-interest systems, publicly owned systems, and systems that serve fewer than five connections.

BPG #3 – Design and Construction Standards

Implementation Responsibilities by Authority

Health Authorities	• Refer a construction permit application to any agency that may have an interest in the application (e.g., local governments, Ministry of Transportation and Infrastructure, Comptroller's Office) (as per the Drinking Water Officers' Guide). • To avoid multiple and overlapping Provincial guidelines, health authorities should provide input into the Design Guidelines for Rural Residential Community Water Systems. • Prior to issuance of a construction permit: – ensure the proposed system meets the requirements of the Drinking Water Protection Act and Regulation, as well as the Drinking Water Officers' Guide – assess the impact of the proposed system on existing development – ensure new small water system designs, at a minimum, meet local government standards (if any) and the Design Guidelines for Rural Residential Community Water Systems • Ensure CPCN approval has been granted prior to commencing construction (for private utilities). • Provide input throughout the development of design and construction standards for community water systems.
Local Governments	• Adopt a Subdivision and Development Servicing Bylaw that includes up-to-date standards for community water systems – these standards should be based on the minimum requirements laid out in the Provincial Design Guidelines for Rural Residential Community Water Systems (see the examples on page 20). • Ensure these standards apply to both public and private systems. • Clearly define levels of service (community system versus individual well/lake intake) for water service provision by land use type/area/zone in the Subdivision and Development Servicing Bylaw. • Ensure health authorities and the Comptroller's Office are consulted early in the development of design and construction standards for community water systems and at all subsequent stages of bylaw development, to ensure the bylaw reflects current best practices as well as local conditions.
Comptroller of Water Rights	• As a condition of CPCN approval, ensure all new private water utilities, at a minimum, meet the Design Guidelines for Rural Residential Community Water Systems and, if applicable, local government standards.

	• Issue a Certificate of Incorporation for the establishment of a water users' community, or approve a CPCN only upon the issuance of a construction permit by the health authority. • Maintain and regularly update the Provincial Design Guidelines for rural Residential Community Water Systems and provide input, as requested by local governments, throughout the development of design and construction standards for community water systems.
Provincial Approving Officers	• Ensure all new water systems meet local government bylaws prior to subdivision approval. • Approve subdivision only upon notification that the system has been installed to acceptable standards and as-built drawings have been accepted by the Comptroller (for private utilities) (as per the Guide to Rural Subdivision Approvals). • Approve subdivision only upon notification that a construction permit has been issued by the health authority (to confirm) – for systems that are not private utilities.

For further information, see:

Examples of some ways that the best practices on could be implemented are listed below. Local circumstances will determine what specific standards should be adopted.

Columbia Shuswap Regional District
Subdivision Servicing Bylaw No. 641 (2012)
Bylaw includes "proof of potable water" requirements for individual wells/lake intakes as well as design guidelines for community water systems.
http://www.csrd.bc.ca/sites/default/files/subdivision/Subdivision%20Servicing%20Bylaw%20No.%20641%20Schedule%20A%20only.pdf

Regional District of East Kootenay
Subdivision Servicing Bylaw No. 1954 (2008)
ftp://ftp.rdek.bc.ca/waterservicebylaws/1954subdivisionservicingbylawconsolidation_may2012.pdf

Thompson-Nicola Regional District
Subdivision Works and Services Bylaw No. 2403
Note the detailed level of service table by zone.
https://tnrd.civicweb.net/document/52050/Bylaw%202403%20(Subdivision%20Servicing%20Bylaw).pdf?handle=63097796A5354938A3C6055B27DDD526

Other resources:

Design Guidelines for Rural Residential Community Water Systems (2012) - Ministry of Forests, Lands and Natural Resource Operations (Comptroller of Water Rights)
http://www.env.gov.bc.ca/wsd/water_rights/water_utilities/cabinet/design_guidelines_final_mar2012.pdf

BEST PRACTICE GUIDELINE #4– APPLICATION INFORMATION

Require land development applicants to provide a broad range of information on water services as early in the approvals process as possible.

Issues addressed by the BPG

Regulatory authorities are tasked with a significant challenge, to assess the long-term sustainability of a proposed water system, before the system is constructed. The primary issue here is that the current approvals process focuses on addressing water system design and construction. However, finances, governance, operational and managerial capacity, and source sustainability issues are also important factors affecting a system's potential sustainability. These need to also be considered before a system is approved.

One of the key issues identified by interviewees was the lack of information on source sustainability. Interviewees found it particularly difficult to determine if a groundwater source is sustainable. The *Water Act* modernization process will hopefully help address these issues and provide regulatory authorities with guidance on how they should be assessing groundwater sustainability.

How the BPG addresses the issue

It is impossible to predict with complete certainty how successful a proposed water system will be. Nonetheless, regulatory authorities can decrease their risk, risks to the applicant, and risks to future water users by conducting a thorough assessment of a proposed water system, even if that assessment is completed at a single point in time, before a system is operating.

By having more information earlier in the process, regulatory authorities should be able to flag a broader range of potential problems with a proposed water system (including governance and operational issues) earlier in the development process. This should save time and resources for all parties, and allow the applicant to adjust development plans accordingly without incurring undue costs.

BPG#4 – Application Information

Implementation Responsibilities by Authority

Health Authorities	• Require developers to provide information on finances and governance early in the approvals process (e.g., prior to issuance of a construction permit) - conditions may be placed on operating permits related to financial management and governance. • Require developers to submit strategies for securing and retaining an appropriate operator early in the approvals process. • Require developers to prove groundwater sustainability as per Provincially developed terms of reference. • Establish a consistent approach across health authorities regarding information needed to be submitted by a developer to obtain a source water approval and construction permit for a new small water system.
Local Governments	• Require developers to provide information on water servicing (e.g., conceptual servicing, cumulative impacts, operator certification, as well as financial and governance information) at the time of re-zoning/OCP amendment. • To ensure consistency, adopt policies outlining what type of information is needed re: water servicing at the time of re-zoning/OCP amendment.
Comptroller of Water Rights	• Require developers to provide information on finances and governance, as well as proposed strategies for securing and retaining an appropriate operator early in the approvals process (e.g., prior to issuance of a construction permit by the health authority). • Require CPCN applicants to follow the Guidelines for Groundwater Reports and Well Testing in Support of a CPCN.
Provincial Approving officers	• Require developers to provide information on water servicing (e.g., conceptual servicing, cumulative impacts, operator certification, as well as financial and governance information) at the time of subdivision application. • Require developers to prove groundwater sustainability as per Provincially developed terms of reference at the time of subdivision (in conjunction with health authorities).

Note: Information requests will have to be coordinated across regulatory agencies so that an applicant only needs to provide information once.

For further information, see:

Guidelines for Groundwater Reports and Well Testing in Support of a CPCN
Ministry of Forest, Lands and Natural Resource Operations
http://www.env.gov.bc.ca/wsd/water_rights/water_utilities/cabinet/appen5_guidelines_for_groundwater_reports_and_%20well_testing.pdf

CPCN Application Guide
Ministry of Forest, Lands and Natural Resource Operations
http://www.env.gov.bc.ca/wsd/water_rights/water_utilities/cabinet/cpcn_application_guide_may-2010.pdf

Health authority requirements can be found:

Fraser Health Authority
http://www.fraserhealth.ca/your_environment/drinking_water/

Interior Health Authority
https://www.interiorhealth.ca/YourEnvironment/DrinkingWater/Pages/Permits.aspx

Island Health Authority
http://www.viha.ca/mho/water/

Northern Health Authority
http://www.northernhealth.ca/YourHealth/EnvironmentalHealth/ApplicationsandForms.aspx

Vancouver Coastal Health Authority
https://www.vch.ca/your_environment/water_quality/drinking_water/

BEST PRACTICE GUIDELINE #5–WATER SYSTEM OWNERSHIP POLICIES FOR LOCAL GOVERNMENTS

Establish local government policies to support sustainable water service provision through public acquisition of newly developed water systems.

Issues addressed by the BPG

Small water systems fail for a whole host of reasons, including inadequate financial planning and resources (see BPG #6), poor governance, lack of professional operators, and sub-standard design and construction practices (see BPG #3). When a system fails, the local government is often approached to take it over.

Several local governments have acquired failed water systems in the past, and indicate that they will consider future acquisitions, but surprisingly few have formal policies around these practices. Without such policies, local governments operate very much in reactive mode, and leave themselves open to increased risk and liability associated with taking on a failing or newly developed water system.

How the BPG addresses the issue

Having a "water system acquisition" strategy in place appears to address the acquisition of only *existing* failed water systems. However, these policies also have relevance with respect to the approval of *new* small water systems.

Water system acquisition policies can be established for the acquisition of newly developed water systems. In these cases, the developer would work closely with the local government to design and construct the new water system to then be turned over to the local government upon completion.

Having water system acquisition policies in place will help provide stability, in addition to direction and clarity, for developers, staff, elected officials, and the public. Public ownership will improve system sustainability through access to grants, improved economies of scale, professional financial management, professional operations, improved borrowing power, and improved governance. Moreover, acquisition policies will help reduce a local government's exposure to risk associated with acquiring a failed or newly developed water system.

BPG#5 – Water System Ownership Policies for Local Governments
Implementation Responsibilities by Authority

Health Authorities	• Work with local governments to develop water system acquisition policies. • Require applicants for construction permits to discuss with the local government the possibility of acquiring the proposed water system.
Local Governments	• Adopt formal policies regarding water system acquisition, public ownership, financing, and service delivery (see the examples on the following page). • Key policies to include: – Requirement for comprehensive assessment prior to acquisition (include terms of reference for these assessments) – Require transfer of all assets to local government for $1 – Require newly developed water systems to provide a contribution to a capital replacement reserve upon acquisition – Limit acquisition to systems that are expected to be financially viable to own and operate (may include a minimum number of connections for clarity) – Require connection to a community system if one becomes available in the future (via covenants) – Require the Financial Best Management Practice Guide to be followed
Comptroller of Water Rights	• Work with local governments to develop water system acquisition policies. • Require CPCN applicants to approach local governments for water system ownership – CPCN to be an option only if a local government alternative is not feasible.
Provincial Approving Officers	• Discuss with the local government their willingness to acquire a proposed water system once constructed. • Keep up to date on local government water system acquisition policies.

For further information, see:

Examples of water system acquisition strategies are listed below. Local circumstances will determine which specific policies are most appropriate.

Regional District of Central Kootenay
Water & Wastewater System Acquisition Policy
http://www.rdck.ca/assets/Services/Water~and~Wastewater/Documents/WaterPlan_72_DPI.pdf

Columbia Shuswap Regional District
Water System Acquisition Strategy
http://www.csrd.bc.ca/services/water/water-system-acquisition

Fraser Valley Regional District
Sustainable Service Provision for Community Water Systems (not available online – call 1-800-528-0061 for a copy)

Thompson-Nicola Regional District
Water System Acquisition and Sustainability Strategy
http://www.tnrd.ca/content/utilitieswater-sewer-systems

Regional District of Central Okanagan
Utility Acquisition Policy
http://www.regionaldistrict.com/media/18305/UtilityAcquisitionPolicy.pdf

Provincial Guidelines on Water System Conversion Process
Capacity Building for Small Community Water Systems: Survey of Regional Districts (Ministry of Community Services, 2007) see Appendix A of that document.
(not available online – call 1-250-953-3677 for a copy)

BEST PRACTICE GUIDELINE #6 – FINANCIAL SUSTAINABILITY

Promote the financial sustainability of small water systems.

Issues addressed by the BPG

Like all service providers, small water purveyors need stable and sufficient funding to provide quality services to their customers. However, the inability to secure necessary financial resources has proven to be one of the most significant issues faced by existing small water systems.

Financial issues arise for a number of reasons, including lack of economies of scale, inadequate financial planning/management, and a general reluctance on the part of water users to pay the true cost of water. Water systems of any size can and do experience financial problems. However, these issues are exacerbated for most small water systems as the ability to absorb unforeseen costs is limited due to their size.

How the BPG addresses the issue

Requiring newly created small water systems to follow the Financial Best Management Practice Guide should help ensure these systems are able to plan appropriately for both predictable and unexpected costs through proactive planning. Following the Financial Best Management Practice Guide should help small water systems make improvements to meet regulatory requirements, replace deteriorating infrastructure (asset renewal/replacement), and pay for required operations and management.

But perhaps most importantly, the Financial Best Management Practice Guide should give new small water systems the tools and knowledge needed to fully understand the financial realities *before* they are created, helping to manage finances properly from the outset.

BPG#6 – Financial Sustainability

Implementation Responsibilities by Authority

Health Authorities	• As a condition on a construction or operating permit, require small water systems to follow the Financial Best Management Practice Guide. • Establish and circulate communications material on the Financial Best Management Practice Guide to small water system owners and operators.
Local Governments	• Adopt and implement the Financial Best Management Practice Guide for publicly owned water systems. • Look for opportunities to rationalize cost recovery and service delivery where possible (i.e., pool costs and revenues across multiple water systems) (see the Sunshine Coast Regional District example on the following page). • Charge the true cost of water (see the Financial Best Management Practice Guide noted on the following page). • Establish a minimum number of connections for new water systems to help achieve economies of scale (see the Columbia Shuswap Regional District example on the following page).*
Comptroller of Water Rights	• Implement the Financial Guidelines for CPCN Applications, which address affordability and system viability in the short and long term. • Promote public ownership of new small water systems. • Require financial assurances as a condition of CPCN approval.
Provincial Approving Officers	• Approve a subdivision only if assurances are made that the newly created small water system will follow the Financial Best Management Practice Guide. • Consider the financial viability of a proposed small water system as part of assessing the “public interest” of a proposed development.

*Note: Minimum connection requirements are intended to address issues with small subdivisions created by a developer, and not necessarily for very small systems developed by owners themselves.

For further information, see:

Sunshine Coast Regional District

The SCRD pools costs across its water systems such that all water users pay the same rate.
For more information, call: 1-800-687-5753.

Columbia Shuswap Regional District

Scotch Creek/Lee Creek Zoning Bylaw No. 825 (2005)

This is an example of a bylaw that establishes a maximum number of single family dwellings per parcel, effectively eliminating shared interest developments. This bylaw also requires connection to a community water system in certain zones, where a "community water system" means

"a waterworks system serving 50 or more parcels…".

http://www.csrd.bc.ca/inside-csrd/bylaws/scotch-creeklee-creek-zoning-bylaw-no-825

Guides:

Financial Best Management Practice Guide – A Financial Road Map for Small Community Water Systems in British Columbia (2012)

Sustainable Infrastructure Society
http://www.ubcm.ca/assets/Resolutions~and~Policy/Policy/Environment/00%20Financial%20Best%20Management%20Practices%20Guide.pdf

Financial Guidelines for CPCN Applications (2010)

Ministry of Forests, Lands and Natural Resource Operations
http://www.env.gov.bc.ca/wsd/water_rights/water_utilities/cabinet/appen1_cpcn_financial_guidelines-may2010.pdf

Asset Management: A Handbook for Small Public Water Systems – STEP Guide Series (2003)

Environmental Protection Agency
http://www.epa.gov/ogwdw/smallsystems/pdfs/guide_smallsystems_asset_mgmnt.pdf

Setting Small Drinking Water System Rates for a Sustainable Future – STEP Guide Series (2006)

Environmental Protection Agency
http://www.epa.gov/safewater/smallsystems/pdfs/guide_smallsystems_final_ratesetting_guide.pdf

BEST PRACTICE GUIDELINE #7 – COORDINATED COMMUNICATIONS

Through coordinated communications, clarify the approvals process for the creation of a new small water system and coordinate regulatory efforts across authorities.

What issues does this BPG address?

The regulatory framework around water in British Columbia is complex. It involves multiple pieces of legislation and several regulatory authorities. This complexity can lead to a general lack of clarity for both applicants and the regulatory authorities themselves. Local government interviewees, in particular, communicated a lack of understanding of the approvals process for a new small water system. They had basic questions about who was responsible for what parts of the approvals process.

How does the BPG address these issues?

Meeting regularly to discuss small water issues, particularly the approvals process, should position regulatory authorities to better identify issues and work together on practical solutions. Facilitating an ongoing discussion around the roles and responsibilities of each regulatory authority should create a better understanding for all involved and should ultimately result in improved approaches for dealing with small water system issues. Most likely, these discussions will take place as part of existing meetings rather than necessitating additional meetings. There could be a coordinating role for the MCSCD to play bringing stakeholders together if existing opportunities are insufficient.

BPG#7 – Coordinated Communications

Implementation Responsibilities by Authority

Health Authorities	• Participate in discussions on small water system issues. • Collaborate with the other regulatory authorities to develop a single information package for developers that outlines the approvals process for a new small water system. • Refer construction permit applications to any agency that may have an interest in the application (e.g., local governments, Ministry of Transportation and Infrastructure, Ministry of Forests, Lands and Natural Resource Operations, Comptroller of Water Rights) (as per the Drinking Water Officers' Guide). • Notify any agency that may have an interest (e.g., local governments) in the issuance of an operating permit.
Local Governments	• Participate in discussions surrounding small water system issues. • Communicate with developers as early in the land development process as possible (e.g., at re-zoning or OCP amendment) regarding the requirements for a new small water system. • Collaborate with the other regulatory authorities to develop a single information package for developers that outlines the approvals process for a new small water system.
Comptroller of Water Rights	• Participate in discussions on small water system issues. • Collaborate with the other regulatory authorities to develop a single information package for developers that outlines the approvals process for a new small water system. • Notify local governments and health authorities of CPCN applications.
Provincial Approving officers	• Participate in discussions on small water system issues. • Communicate with developers as early in the land development process as possible (e.g., when initial contact is made with the PAO) regarding requirements for a new small water system. • Collaborate with the other regulatory authorities to develop a single information package for developers that outlines the approvals process for a new small water system. • Refer subdivision applications to any agency that may have an interest in the application (as per the Guide to Rural Subdivision Approvals).

For further information, see:

The following groups/meetings are examples of opportunities for discussing how water system sustainability can be best supported:

- Drinking Water Leadership Council
- British Columbia Water and Wastewater conference
- Provincial Approving Officers' meeting prior to the Local Government Management Association conference
- Regional District Planners Association
- Government Finance Officers Association of British Columbia

A LIVING DOCUMENT

This document is intended to be a “living document”. It is expected that these BPGs will be expanded and modified over time to ensure they best reflect changing circumstances (e.g., changes in legislation, development trends, service provision approaches, etc.).

As these BPGs are implemented, their effectiveness should be evaluated. Each regulatory authority should annually reflect on:

- how well each BPG is, or is not, working
- where more details may be needed for an existing BPG
- emerging issues that may prompt the need for new best practices, and
- the financial and human resources needed to implement a given BPG.

Regulatory authorities should also identify reasons why certain BPG’s may not be being routinely implemented. Understanding implementation barriers will help determine how the BPG should be amended.

To promote these BPGs, efforts should be made to collect and communicate stories of how these BPGs are helping communities secure safe and reliable drinking water. Sharing on-the-ground success stories are an effective way to promote the use of these BPGs across the Province.

Appendix A – Regulatory Context

Table A.1: Approval of New Community Water Systems – Regulatory Context

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
WATER QUALITY				
Drinking water quality	• Drinking Water Protection Act (DWPA) • Drinking Water Protection Regulation (DWPR)	Health Authority - Drinking Water Officer and Public Health Engineer	• DWPR establishes quality standards for potable water (microbiological only - no direct reference to Guidelines for Canadian Drinking Water Quality) • These regulations are enforced through construction permits (issued by the Public Health Engineer) and operating permits (issued by the Drinking Water Officer) • DWPR defines *small system* as "a water supply system that serves up to 500 individuals during any 24 hour period" • Construction permits may be waived for a small system by the Public Health Engineer • Public Health Engineers have broad authority to make requirements in relation to a construction permit, and may enforce standards that are more stringent than in the DWPR • Drinking Water Officers have broad authority to include terms and conditions in an operating permit (e.g., conditions re: treatment, monitoring, reporting, training) and may enforce standards that are more stringent than in the DWPA • Small systems are permitted to use point of entry or point of use treatment systems that make the water potable • Drinking Water Officers may also require source assessments	• Drinking Water Officers' Guide (2007) • Guidelines for Canadian Drinking Water Quality • Drinking Water Treatment Objectives (Microbiological) for Surface Water Supplies in British Columbia (2012) • Guidance Document for Determining Ground Water at Risk of Containing Pathogens (GARP) Including Ground Water under Direct Influence of Surface Water (GWUDI) (2012)

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
Aesthetic parameters	Local Government Act	Local government	Local governments can require treatment for aesthetic parameters through their Subdivision and Development Servicing Bylaws	
	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	The Comptroller can require treatment for aesthetic issues as a condition of issuance of a CPCN	Treatment for aesthetic issues must meet the minimum requirements outlined in Design Guidelines for Rural Residential Community Water Systems (2012)
SOURCE SUSTAINABILITY				
Ground water source sustainability	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	Issuance of a CPCN is contingent on proving out a suitable source	Guidelines for Groundwater Reports and Well Testing in Support of a CPCN
Surface water source sustainability	• Water Act • Water Regulation	Regional Water Manager or Comptroller of Water Rights	A water licence is required to divert, extract, use or store surface water	
	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	Issuance of a CPCN is contingent on confirmation that a water licence will be granted	
DESIGN AND CONSTRUCTION				
System design	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	Issuance of a CPCN is contingent on appropriate system design	Design must meet the minimum requirements outlined in Design Guidelines for Rural Residential Community Water Systems (2012)

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
	Local Government Act	Local governments	• Local governments can establish design standards through a Subdivision and Development Servicing Bylaw • Local government design standards do not apply to bare land stratas	
	Bare Land Strata Regulations	Provincial Approving Officer	• Approving officers must not approve a bare land strata plan unless a water system is constructed in accordance with "good engineering practice" • Bare land strata systems must obtain a CPCN, though Comptroller oversight ends once majority of strata lots are sold (for all phases of development)	
Construction	• Drinking Water Protection Act • Drinking Water Protection Regulation	Health Authority – Public Health Engineer	• Construction of a water system requires a construction permit issued by the Public Health Engineer • Requirement for a construction permit may be waived for a small system by the Public Health Engineer	Drinking Water Officers' Guide (2007) and addendums including surface water treatment objectives.
	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	• A construction permit (issued by the Public Health Engineer) is a prerequisite for CPCN approval • Construction must not commence without CPCN approval	Construction must meet the minimum requirements outlined in Design Guidelines for Rural Residential Community Water Systems (2012)
	• Local Government Act	Local governments	Local governments can establish construction requirements through a Subdivision and Development Servicing Bylaw	
	• Bare Land Strata Regulations	Provincial Approving Officer	Approving officers must not approve a bare land strata plan unless a water system is constructed in accordance with "good engineering practice"	

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
Construction and drilling of wells	• Water Act • Ground Water Protection Regulation	• Ministry of Forests, Lands, and Natural Resource Operations • Ministry of Environment	Specific regulations are in place to protect ground water resources during well drilling and construction	
LAND DEVELOPMENT				
Location and density of development	Local Government Act	Local government	• Local governments can regulate the location and density of development through: – zoning – official community plans – development permits – regional growth strategies • local governments have considerable discretionary power at the time of re-zoning/OCP amendment to put conditions on development	
	• Land Title Act • Local Services Act • Subdivision Regulations	Provincial Approving Officer	• Provincial Approving Officers are responsible for approving subdivision in unincorporated areas (where the regional district has not appointed an approving officer) • Approving officers may refuse a subdivision application if it is considered against the public interest, or does not comply with local government subdivision servicing or zoning bylaws (among other reasons) • An adequate supply of potable water must be proven prior to subdivision approval (for subdivisions to be served by community systems)	• Guide to Rural Subdivision Approvals (2012) • Where a subdivision is to be serviced by a water utility, subdivision approval is contingent on notification from the Comptroller that as-built drawings have been accepted

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
	• Strata Property Act • Bare Land Strata Regulations	Provincial Approving Officer	• Approving officers are responsible for approving bare land strata plans • Approving officers have the authority to broadly consider a bare land strata's suitability	
FINANCIAL SUSTAINABILITY				
Reserve funds	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	• Comptroller is authorized to require a water utility to create reserve funds prior to CPCN approval • Water utilities must demonstrate long-term financial viability prior to CPCN approval	Financial Guidelines for CPCN Applications (2010)
Water rates	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	• Comptroller establishes criteria for setting water rates • All water utility rates must be approved by the Comptroller	Financial Guidelines for CPCN Applications (2010)
SERVICE DELIVERY				
Creation of a new water utility[6]	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	• a CPCN is required to establish a private water utility • Comptroller must consider whether a new utility is necessary and in the public interest	Comptroller considers opportunities to provide service publicly, or by expanding an adjacent utility or public system
Creation of a new Water Users' Community	• Water Act	Comptroller of Water Rights	• a Certificate of Incorporation of a Water Users' Community is required to establish a water users' community • all members of a water users' community must have a valid water licence.	

[6] All water systems must meet the requirements of the Drinking Water Protection Act in addition to the requirements listed under "service delivery".

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
Creation of a new strata system	• Water Utility Act • Utilities Commission Act	Comptroller of Water Rights	• a CPCN is required to establish a private water utility - New strata systems are considered "water utilities" (and therefore require a CPCN) until a majority of lots are sold – then the strata owns the system • Comptroller must consider whether a new utility is necessary and in the public interest	• Comptroller considers opportunities to provide service publicly, or by expanding an adjacent utility or public system
Creation of a new water system owned by a cooperative	Cooperative Association Act	Registrar of Companies	• a new cooperative association needs to be incorporated through making filings with the Registrar of Companies	
Creation of a new proprietorship – water system	Partnership Act	Registrar of Companies	• a new proprietorship needs to be registered with the Registrar of Companies	
Creation of a new water system owned by a society	Society Act	Registrar of Companies	• a new society needs to be incorporated through making filings with the Registrar of Companies	
Creation of a new local government system	Local Government Act	Local governments	• Elector assent and establishing bylaw requirements for a system owned by a regional district (no specific requirement for a new municipal system)	
Creation of a new system owned by a corporation	Business Corporations Act	Registrar of Companies	• Incorporated with the Registrar of Companies	

ASPECT REGULATED AT THE TIME OF DEVELOPMENT	RELEVANT LEGISLATION	RESPONSIBLE AUTHORITY	REGULATORY DETAILS	POLICIES, PRACTICES AND GUIDELINES
Level of service (i.e., community system vs. independent systems)	Local Government Act	Local government	Local governments can establish level of service requirements – i.e., determine whether a community or independent system is required in a given area	
OPERATIONS				
Certification of operators	• Drinking Water Protection Act • Drinking Water Protection Regulation	Health Authority – Drinking Water Officer	• Small systems are generally not required to have certified persons operate, maintain, or repair the water system (the Environmental Operators Certification Program establishes classification systems, standards and processed for certifying water system operators). • However, an operating permit may require a person to be certified to operate, maintain or repair a small system	Drinking Water Officers' Guide (2007)
Operating permits	• Drinking Water Protection Act • Drinking Water Protection Regulation	Health Authority – Drinking Water Officer	• Drinking Water Officers have broad authority to include terms and conditions in an operating permit (e.g., conditions re: treatment, monitoring, reporting, training) and may enforce standards that are more stringent than in the DWPA	Drinking Water Officers' Guide (2007)