Water Utilities

Guide to Applying for a Certificate of Public Convenience and Necessity (CPCN)

2007

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Foreword

This guide assists applicants in preparing the information required to support an application for a Certificate of Public Convenience and Necessity.

A Certificate of Public Convenience and Necessity (CPCN) is the document granted by the Comptroller of Water Rights that authorizes a water utility to construct and operate a water system to serve customers within a defined area. The CPCN is granted after a utility has secured a proven source of supply, provided an acceptable system design, and met the required administrative and financial conditions.

The guide is divided into five parts. **Part One** provides general information on water supply agencies in B.C. **Part Two** contains general information on water utilities and the role of the Comptroller of Water Rights. **Part Three** discusses the CPCN and the subdivision approval process. **Part Four** contains detailed information on making a CPCN application. **Part Five** discusses the documentation required after the CPCN has been granted and the construction has been completed.

The Comptroller of Water Rights is responsible for the regulation of water utilities under the *Water Utility Act* and *the Utilities Commission Act*. The Utility Regulation Section of the Water Stewardship Division, MoE delivers to the Comptroller all the necessary information, advice and recommendations required to support approvals, decisions and orders with respect to the utilities regulated.

Although the guide provides substantial detail, it is not intended to explain the requirements for all circumstances specific to a particular utility proposal. It is important that applicants communicate with the staff of the Utility Regulation Section at an early stage in preparing an application.

Part One—
General Information on Water Supply Agencies

1. Types of Water Supply Agencies

There are approximately 980 community water supply systems in British Columbia, each providing water service to at least fifteen customers. About 200 of these systems serve more than 300 customers each. The 980 systems are owned by the following types of agencies:

1. municipalities
2. regional districts
3. improvement districts
4. water users' communities
5. privately owned water utilities
6. small unregulated agencies such as mobile home parks

The numbers[1] mentioned above illustrate the diversity of community water supply in this province: most of the population is served by a few systems owned by the major cities, while most of the systems serve a small portion of the population in rural areas.

In addition to the 980 systems mentioned above, there are about 1440 systems that serve between two and fifteen customers. Except for the smaller utilities, which may serve between five and fifteen lots, they are owned by small unregulated agencies.

2. Water Service in Rural Areas

Unlike urban areas where water service is provided by a municipality, there are a variety of ways in which service is provided in rural areas. Local service areas of regional districts, improvement districts and water utilities serve most of the rural population. However, many homes have individual sources of supply, either wells or intakes in surface sources such as creeks, springs or lakes. There are also many small systems that are not regulated, other than for water quality by the regional health boards.

[1] The data on the numbers of systems was obtained February, 1998, from the Ministry of Health, which is responsible for the potability of supply for all community water systems.

3. Provincial Goals for Rural Service Delivery

The provincial government encourages regional districts to become the primary service providers in rural areas. The goals of this expanded role are to improve linkages between land use and servicing decisions and to achieve efficiency in the provision of rural services by avoiding duplication and the proliferation of small, marginally-viable, independent systems. Local service areas are being created to acquire systems owned by utilities and improvement districts. In some cases local service areas are being created to serve new land developments where no water authorities exist.

Applications for new utilities are referred to regional districts to ensure consistency with servicing plans for a particular area. Regional districts are consulted to determine whether there are alternatives to the creation of a utility and, if not, how the utility can be compatible with the regional district's plans for servicing the general area.

Part Two—
General Information on Water Utilities

4. Water Utilities

A water utility can be an individual or a corporation, but not an agency such as a municipality, regional district, improvement district or water users' community. Briefly, a water utility is defined in the *Water Utility Act* as a person who owns or operates waterworks that serve five or more connections. Refer to the Act for a complete definition or for any question about the definition of a water utility.

Water utilities are normally created to serve rural land development where community water service is required and no water service agencies exist. They are usually created by land developers who have no other option to obtaining subdivision approval. There are approximately 175 utilities in the province that serve some 20,000 households.

Water utilities primarily serve fee simple subdivisions. They also serve strata developments and various other developments found in places such as ski resorts.

5. Role of Comptroller of Water Rights

Under the *Water Utility Act* and the *Utilities Commission Act*, the Comptroller of Water Rights (Comptroller) is responsible for the regulation of water utilities. The Comptroller may appoint a Deputy Comptroller who will have the same authority as the Comptroller for decision making purposed under both these acts. This regulatory responsibility falls into two major categories: 1) to assure that water systems installed by land developers are properly designed and constructed, and 2) to assure that the customers of utilities receive acceptable water service at reasonable rates.

The Comptroller is also responsible for approval of subdivisions under the regulations to the *Local Services Act*. Where a water utility serves a subdivision, the system or extension is approved by the Comptroller before the subdivision can be registered.

Regulation of strata developments where the strata corporation owns the water system is different from the regulation of other utilities. For these developments the Comptroller is responsible for approval of design and construction of the water system and not for the ongoing regulation of the

strata corporation. The strata corporation may apply for exemption from regulation after more than 50% of the lots are sold because the customers of the utility, the strata lot owners, elect the strata council that administers the affairs of the strata corporation. As strata corporations are governed under *the Strata Property Act*, the exemption from regulation avoids legislative overlap with the *Utilities Commission Act*.

6. Forms of Organization

Because most utilities are created by land developers, the most common form of organization is a company incorporated under the *Company Act*. Other forms of organization are:

1. an individual
2. a partnership registered with the Registrar of Companies in accordance with *the Partnership Act*
3. a society incorporated under the *Society Act*
4. a strata corporation incorporated under the *Strata Property Act*

7. Duties and Responsibilities

The *Utilities Commission Act* lists the duties, responsibilities and restraints imposed upon a water utility. Some of these include, but are not limited to, the following:

1. No person shall begin the construction or operation of any utility plant or equipment without first obtaining a Certificate of Public Convenience and Necessity. (Sec. 45)
2. A water utility shall furnish a service that is adequate, safe and reasonable. (Sec. 38)
3. No water utility shall cease operation without permission. (Sec. 41)
4. A water utility shall obey the orders of the Comptroller. (Sec. 42)
5. A water utility shall provide information and complete and return forms required by the Comptroller. (Sec. 43)
6. A water utility shall have an office in British Columbia in which all its accounts and records shall be kept. (Sec. 44)
7. A water utility shall not borrow, unless payable within one year, or guarantee payment of a loan, without first obtaining approval. (Sec. 50)
8. A water utility shall not dispose of its property without first obtaining the approval of the Comptroller. (Sec. 52)

9. A water utility shall not consolidate, amalgamate or merge with another person (or corporation), or permit the transfer of its shares to another person without first obtaining approval. (Sec. 53 and 54)
10. The Comptroller may require a water utility to create and maintain a reserve fund. (Sec. 57)
11. The only rates that can be charged by a utility are those approved by the Comptroller. (Sec. 61)

8. Financing and Viability

A utility to be a viable business entity and provide adequate service to its customers, needs to obtain adequate revenues to pay operating costs and provide for replacement of system components. Because the utility will have few, if any, customers initially, revenues will not be adequate. To achieve a minimum level of viability, developers are expected to subsidize the operation until there are enough rate-paying customers for the utility to become self-sufficient. The subsidy may be perpetual for small utilities. This subsidy may include undertakings by the developer to donate time and resources, and cash deposited into a Revenue Deficit Reserve Fund.

Experience has shown that, in general, utilities of fewer than twenty customers are not viable. Therefore, even if an applicant for such a small utility was to propose a large Revenue Deficit Reserve Fund, demonstrating viability would be extremely difficult. Because strata corporations are not regulated on an ongoing basis, as discussed previously, this viability issue may not apply to single phase strata subdivisions.

9. Tariffs

A tariff is the utility's document that describes the regulations and conditions under which a customer obtains service and the schedule of applicable rates. A proposed tariff should be submitted before a CPCN is granted. A copy of a suggested tariff will be provided after the CPCN application is initially reviewed. A copy may be downloaded from our web site at: www.env.gov.bc.ca/wsd/water_rights/water_utilities/

10. Reporting Requirements

Utilities need to report annually to the Comptroller on their activities. The reports include such information as financial statements, reserve fund activities, system operation and maintenance and number of customers.

Part Three—
Certificate of Public Convenience and Necessity

11. What is a CPCN?

A Certificate of Public Convenience and Necessity is granted by the Comptroller to authorize a utility to construct and operate works and to provide water service to customers within a specified area. It describes the conditions under which the utility is established and under which it will operate. The process of granting a CPCN is designed to coordinate with the subdivision approval process. A CPCN (in the case of a new system) or an amendment to a CPCN (in the case of an extension to an existing utility) authorizes a utility to serve the specific subdivision that is to be approved for registration by the Approving Officer.

12. Subdivision Approval Process

Under *the Land Title Act*, the Approving Officer ensures that all requirements of agencies having jurisdiction over any aspect of a subdivision are satisfactorily completed prior to allowing registration of the subdivision in the Land Registry office. In rural areas the Ministry of Transportation performs the role of approving officer. There is a Provincial Approving Officer in each of the Highways Regional offices.

Subdivision applications are received by the District Highways office, which refers the application to all agencies that may have an interest in the proposed development. Such agencies would include, but not be limited to: the Water Stewardship Division, MoE, the Regional Health Board and the Regional District. These agencies make their requirements known to the District Highways office, and if they receive no objections, they send a report recommending preliminary approval to the Approving Officer. The Approving Officer lists the requirements in a document called a “Preliminary Layout Approval”.

Where a proposed subdivision is to be served by a water utility, the Preliminary Layout Approval will typically include in its list of requirements a statement such as “a Certificate of Public Convenience and Necessity and approved as-built drawings”.

The approval process of the water system begins with an application for a CPCN by the person who intends to provide water service. The engineering drawings and other technical information are reviewed to ensure that the source of supply is adequate and that the proposed works are suitably designed. Administrative and financial information is reviewed to ensure that the utility will be a viable operation that can serve its customers in the long term. The CPCN is granted when all requirements have been met. It approves the source of supply and the system design, lists the conditions under which the utility will operate and authorizes the utility to proceed with construction.

After the work has been completed, the utility's engineer prepares as-built drawings of the system and certifies that the construction has been satisfactorily completed. Upon acceptance of the as-built drawings and completion of any other outstanding requirements, the Comptroller will notify the Approving Officer that, with respect to the Comptroller's requirements, the registration of the subdivision is in order.

The Comptroller's office communicates with a number of other agencies while reviewing a CPCN application. It coordinates with regional districts to ensure compatibility with plans that may be in place for servicing a general area and with subdivision servicing by-laws.

Regional Health Boards have a responsibility for community water systems under the *Drinking Water Protection Act*. System designs must be approved by the local public health engineer prior to construction. The Comptroller's technical staff work with the local public health engineer on matters related to the potability of the source and the proposed treatment works.

For systems using groundwater, the Groundwater Section, Water Stewardship Division, MoE reviews the information on the proposed well. For systems using surface water, regional offices of LWBC are contacted regarding water licence applications. Appendix 8 provides the address and phone number of each regional office.

13. CPCN Application–Scope of Review and Financial Requirements

The CPCN application is reviewed to ensure that the water system proposed is suitably designed to provide adequate service and that the utility will be a viable business operation.

13.1 Contributions in Aid of Construction

Building a utility plant to serve an area having no customers initially and financing that plant to receive a return on investment is clearly uneconomic.

Construction may be feasible, however, if the person or company who benefits from the construction is prepared to contribute (with no expectation of a return on investment) the entire cost of installing the necessary waterworks. For that reason, it is a widely accepted practice for real estate developers to contribute to the utility the cost of constructing the waterworks to serve the land they wish to market as serviced lots.

13.2 New Utilities

The first consideration in reviewing an application for a new utility is determining whether it is in the public interest to approve the creation of a new water authority. This involves determining whether there are other local government options to providing water service.

Another important aspect in the review of an application for a new utility is the assessment of the financial requirements for a viable operation. This involves, among other things, determining the amount of money required to be deposited in reserve funds.

A viable utility must be able to obtain sufficient revenue to pay operating and maintenance costs and make provision for the replacement of system components to be able to provide reliable service in the long term. Small private water utilities usually do not have the ability to finance replacement of the major system components when required. Therefore, a portion of revenues is set aside into a Replacement Reserve Fund.

Utilities normally obtain revenue from customers through its approved service rates and from owners of unconnected lots through an availability of service charge. The latter charges are generally set at 50 to 70% of user rates and are required to cover the cost of keeping the water system operable so that service is available upon application. During the initial years of operation, revenue is usually insufficient to cover the cost of operation and provide for future replacement. Therefore, a condition of granting a CPCN may be the establishment of a Revenue Deficit Trust Reserve (RDRF) to generate interest earning to cover revenue shortfalls.

To ensure that customers and vacant property owners are not subject to unnecessarily high rates, limits are set on approved rates. In some cases this may result in revenue deficits and increases in the RDRF requirements and/or continues subsidization by the utility owners.

For Strata Corporations the financial requirements will depend on certain circumstances, such as whether or not it is a phased development. Tariffs and annual provision for replacement will not be required because the costs of running the water utility are usually absorbed within the annual strata fees set by the strata corporation, in accordance with the *Strata Property Act*. To provide some measure of viability, particularly in the early years when there

are few if any customers, a minimum of either $50,000 or two years' approved operation, maintenance and general expenses is generally required. After a strata council is formed and more than 50% of the lots are sold, the utility may apply for exemption from regulation. At that time, the Comptroller may release the Revenue Deficit Reserve Fund to its beneficial owner.

In any case, at an early stage of making the CPCN application, the developer or its agent should contact the Utility Regulation Section, Water Management Branch in Victoria to clarify the requirements under various scenarios.

13.3 Existing Utilities

Applications for extensions to existing utilities are reviewed primarily to determine the adequacy of the existing systems and what works are required to serve the new development without adversely affecting existing customers. For relatively small extensions, capital contributions may be collected from applicants to allow utilities to construct additional capacity in the future. These contributions will be held in a Deferred Capacity Reserve Fund. As in the case of new utilities, availability of service charges is required. There may also be some additional financial requirements related to the viability of the extension in cases where the costs of operating the extension are high.

14. Sources of Supply

14.1 Surface Water

Under the *Water Act* the Crown owns all surface water in the province. Applicants for a CPCN who intend to use a surface water source must apply separately for a water licence. General information on water law and application forms is available from the regional Water Stewardship Division offices, listed in Appendix 8.

The CPCN will not be issued until the Comptroller receives confirmation that a water licence will be granted. Since the water licensing process involves an investigation of the source and of existing water rights, an early application for a water licence is advisable to minimize delays. In some circumstances, application for a water licence may involve confirmation by a professional hydrologist that water is available from the proposed source. Where a development is planned to proceed in stages, consideration must be given to future availability of surface water as the water licence is granted for only one stage at a time.

14.2 Groundwater

Where groundwater is to be the source of supply, the application should include a report prepared by a professional hydrogeologist or a professional engineer experienced in groundwater. Detailed information, policies and procedures are contained in “Community Water Supply Wells—Guidelines for Groundwater Reports and Well Testing” (see Appendix 9). The guidelines are intended to assist the geologist or engineer in obtaining and presenting sufficient data to establish the characteristics of the groundwater aquifer and the safe yield of the well.

15. System Design

Design and construction supervision is carried out by a professional engineer or limited licensee experienced in the waterworks industry. The terms of reference under which the engineer is hired by the developer or utility should specify that this person is responsible for both the design and construction supervision of the system or extension.

A publication entitled “Design Guidelines for Rural Residential Community Water Systems, 2007“ has been prepared by the Comptroller’s office and is available to the utility’s or developer’s engineer. The guidelines present the minimum acceptable standards. They are not intended to limit the engineer in designing to a higher standard. The guidelines booklet provides further information on the role of the engineer.

Part Four—
Details for Making a CPCN Application

This section of the guide provides a detailed description of the documentation and other information required to support an application. The information generally pertains to all applications; however, other information may be required, depending on the circumstances of the particular application.

For extensions to existing utilities, the organizational information on the utility will be on file. Therefore, unless there are changes, that information is not required. Depending on the nature of the extension, some of the information provided here may not be required.

16. Method of Application

An application for a CPCN should include:

a. A completed application form (See Appendix 1.)

b. The items shown on the check list (See Appendix 2.)

c. A covering letter, one complete set of supporting documents and one set of engineering drawings and specifications, to be sent to:

Deputy Comptroller of Water Rights,
Water Stewardship Division, MoE
PO Box 9340 Stn Prov Govt
Victoria BC V8W 9M1

d. Signature by an appropriate agent

The application form should be signed by an officer of the applicant or by its authorized agent who is empowered to act in all matters arising between the applicant and the Comptroller's office. Include a letter from the applicant showing the delegation of authority.

e. A cheque made payable to the Minister of Finance for the application fee.

17. Check List

The following is a list of items required in support of an application for a CPCN. A copy is attached as Appendix 2. See the following section for further explanation of the items.

1. Water utility organization details
2. Certificate of Incorporation
3. Description of proposed development to be served
4. Key plan and service area
5. Source of supply
6. Design brief
7. Engineering specifications and drawings
   List drawings and provide name of consulting engineer.
8. Engineering supervision
9. Statutory rights of way over private property and permits over Crown land
10. Estimated construction cost, annual revenue and expenses
11. Corporate structure and financing
12. Notice of application
13. Approvals by or agreements with other authorities
14. Application fee

18. Explanation of the Check List Items

18.1 Water Utility Organization Details

An applicant for a CPCN should preferably be a company registered under the *Company Act* and have a registered office located in British Columbia. Accounts and affairs of the proposed utility are to be strictly segregated from other business endeavours and be separately recorded. In some circumstances, the Comptroller may require a separate water utility company to deal exclusively with the affairs of the water service enterprise.

The utility (and/or its shareholders) retains ownership and control of the waterworks until the Comptroller is satisfied that the public interest will not be adversely affected by a transfer of ownership and/or control. Automatic transfer of ownership to the lot purchasers or others is not acceptable.

For strata developments where the water system will be transferred to the strata corporation, a CPCN is granted to a company created by the developer. The strata corporation does not exist until the strata subdivision is registered. After registration, the Comptroller may approve the transfer of the system to the strata corporation. The strata corporation may eventually be made exempt from regulation once the strata council has been formed and any other requirements met.

18.2 Certificate of Incorporation

Submit a copy of the Certificate of Incorporation of the company.

18.3 Description of Proposed Development

The description of the proposed development to be served should include information such as the number of lots, type of development (i.e., fee simple subdivision, strata) and phasing.

18.4 Key Plan and Service Area

Submit one copy of a key plan showing the location of the proposed service area in relation to existing gazetted roads, lakes and the boundaries of any municipality in the vicinity. Prepare the plan on a legal composite base.

Include a legal description of all lands to be served. For development of a subdivision in phases or stages (including a strata title) provide an overall plan showing an outline of the anticipated ultimate development.

18.5 Source of Supply

a. Surface Water

If proposing to take a supply of water from a stream, lake or spring, provide assurance that a water licence can be obtained. Submit a copy of the water licence application with the CPCN application. A hydrology study by a professional hydrologist may be required to confirm water availability from the proposed source. Refer to Part Three–section 4 of this guide.

b. Groundwater

Submit two copies of a report prepared by a groundwater geologist or professional engineer experienced in groundwater if groundwater (wells) is to be used as a source of supply. Refer to Part Three–section 4 and Appendix 9 of this guide.

18.6 Design Brief

The engineer should provide a brief that conceptually describes the proposed water system. The brief should include customer demands, fire protection provisions, the capacity and characteristics of the source, the capacity and features of major system components and a description of system operation including the control system.

18.7 Engineering Specifications and Drawings

Submit one complete set of detailed design drawings of the proposed waterworks, signed and sealed by the engineer. The drawings should show plan views, elevations, sections and details, which, together with the specifications, provide the information necessary to construct the works. The system layout drawings should be on a legal composite base and show contours, elevations of key components, pressure zones and sizes of pipelines. A publication entitled “Design Guidelines for Rural Residential Community Water Systems, 2007” provides further information on the design of systems. It is available from the Utility Regulation Section in Victoria to the utility’s engineer.

18.8 Engineering Supervision

The engineer should provide confirmation that he/she has been hired to design and inspect construction in a manner that is adequate to prepare as-built drawings and certify the satisfactory completion and operation of the works.

18.9 Statutory Rights of Way Over Private Property and Permits Over Crown Land

Obtain registered statutory rights of way where pipelines and other waterworks components will be located on private property. The Comptroller must be satisfactorily assured that the utility will be allowed to operate and maintain all plant so located. Provide evidence that a permit has been (or will be) issued for the location of waterworks within public rights of way or over Crown land.

18.10 Construction Cost, Annual Revenue and Expenses

Submit estimates of construction cost and annual revenue and expenses. (See Appendix 3 and 4)

18.11 Corporate Structure and Financing

Include a letter of undertaking from the developer to contribute, with no expectation of a return on investment, the entire cost of the waterworks system. A sample letter is attached as Appendix 5.

Secure payment to the utility of the availability of service charge for unconnected lots by registering a rent charge agreement against the title of each lot in the service area. Details on the registration of a rent charge agreement are attached as Appendix 6.

18.12 Notice of Application

Advertise notice of the application for a CPCN in at least one edition of a widely circulated newspaper in the area of the proposed utility. Allow

a 30 day period to permit any objections or submissions to reach the Comptroller. Forward a copy of the newspaper tear sheet to the Comptroller to verify publication of the advertisement. A sample form of advertisement is attached as Appendix 7.

18.13 Approvals by or Agreements with Other Authorities

a. Utilities Located Within Municipalities

Where a water utility intends to operate within the boundaries of a municipality or other public authority that provides water service, provide an agreement with that authority that establishes the conditions under which the utility will provide water service within its authorized service area. The agreement is subject to the approval of the Comptroller.

b. Health Approval

Provide a copy of the Construction Permit issued by the local public health engineer pursuant to ***the Drinking Water Protection Act***. Consult the local regional health authority for details.

c. Highways Approval

Provide a copy of the Preliminary Layout Approval issued by the Approving Officer.

Where pipelines or other works are located within a road, provide a copy of the application to occupy the road right of way.

18.14 Application Fee

The application fee for a CPCN is set by Cabinet through Order in Council. The current application fee is $50.00. Please make your cheque payable to **Minister of Finance**.

Part Five—
Documents Required After the CPCN has been Granted

After the CPCN has been granted and the construction of the works has been completed and tested, submit the following documents.

19. As-Built Drawings

After completion and testing of the constructed waterworks, submit one copy of the as-built drawings to the Comptroller. The drawings shall bear the seal and signature of the engineer. They should be accompanied by a statement by the engineer to the effect that the works are correctly portrayed by the as-built drawings, are substantially the same as the design which was approved by the Comptroller and the works have been tested and operate satisfactorily as designed.

Upon acceptance of the as-built drawings and the completion of all other requirements, the Comptroller will provide the Approving Officer with notification that registration of the subdivision is in order.

20. Registered Plans

Submit one copy of the registered subdivision plans to the Comptroller as soon as they are available.

21. Statutory Rights of Way

Submit one copy of all registered statutory rights of way required for works located on private property to the Comptroller as soon as they are available.

22. Waterworks Superintendent

Advise the Comptroller of the name, address and telephone number of the person hired to be responsible for the operation and maintenance of the water system. The waterworks superintendent should be conversant with the operation and maintenance of water systems, and should be able to respond promptly to any malfunction of the system. It is the responsibility of the utility

to advise the Comptroller of any change in appointment of the waterworks supervisor, address and telephone number.

23. Cost of Constructed Works

The utility should provide a breakdown of the actual cost of the constructed water system. This information is important for determining the replacement provision, for reserve fund requirements and for rate setting purposes.

Appendix 1. Application for Certificate of Public Convenience and Necessity

(Water *Utility Act* and *Utilities Commission Act*)

I (We),

.....
(Name of Applicant)

of .....

.....
(Address of Applicant)

hereby make application to the Comptroller of Water Rights of the Province of British Columbia for a Certificate of Public Convenience and Necessity to construct and operate a public utility to supply water service in

.....

.....

.....
(Legal description of area to be supplied)

I (We) have read the Guide to Applicants for a Certificate of Public Convenience and Necessity under the *Water Utility Act* and enclose information itemized on the check list.

.....
(Applicant)

By .....
(Authorized Agent)

.....
(Address of Agent)

.....
(Telephone and Fax of Agent)

Date .....

Appendix 2. Check List Items Enclosed with Application for a Certificate of Public Convenience and Necessity

Check when all information is at hand.

	Item	*Check*
1.	Water utility organization details	_____
2.	Certificate of Incorporation	_____
3.	Description of proposed development	_____
4.	Key plan and service area	_____
5.	Source of supply	_____
6.	Design brief	_____
7.	Engineering specifications and drawings	_____

.....

.....

.....

.....

(List drawings)

by .....

.....

(Name and address of consulting engineer)

8.	Engineering supervision	_____
9.	Statutory rights of way over private property and permits over Crown land	_____
10.	Construction cost, annual revenue and expenses	_____
11.	Corporate structure and financing	_____
12.	Notice of application	_____
13.	Approvals by or agreements with other public authorities	_____
14.	Application fee	_____

For an explanation of these items, refer to the paragraph of the same number in Part Four, section 18 of this guide.

Appendix 3. Estimated Construction Costs

1.	**Intangible Plant**	
	Organization	_____
	Franchises and consents	_____
	Miscellaneous and intangible plant	_____
2.	**Source of Supply**	
	Land and land rights	_____
	Structures and improvements	_____
	Reservoirs	_____
	Lake, stream or spring intakes	_____
	Wells	_____
	Supply mains	_____
3.	**Pumping Plant**	
	Land and land rights	_____
	Structures and improvements	_____
	Electrical pumping equipment	_____
	Other pumping equipment	_____
4.	**Water Treatment Plant**	
	Land and land rights	_____
	Structures and improvements	_____
	Water treatment equipment	_____
5.	**Transmission and Distribution Plant**	
	Land and land rights	_____
	Structures and improvements	_____
	Distribution reservoirs	_____
	Transmission and distribution mains	_____
	Services	_____
	Hydrants and standpipes	_____
6.	**General Plant**	
	Land and land rights	_____
	Structures and improvements	_____
	Office equipment and furniture	_____
	Transportation equipment	_____
	Other general equipment	_____
TOTAL PLANT		═══

Appendix 4. Sample Utility Company Projected Income Statements

	When 5 lots connected	When all lots connected	
User Rate Per Month			Includes RRTF provision
Annual Rent Charge			
RRF* Contribution			
Estimated Number of Homes Connected	5		
Remaining Rent Charge Lots		0	
Operating Revenue			
User Rates			
Rent Charge Income			
Interest Income on RDRF*			Based on 1 yr. GIC rates
TOTAL REVENUE			
Expenses			
Operating and Maintenance:			
Operator's Salary			
Power			
Chemicals			
Repairs and Maintenance			
General Expenses:			
Accounting and Legal			
Billing and Bookkeeping			
Insurance			
Management Fee			
Miscellaneous			
Office Supplies and Postage			
Replacement Reserve Provision			
TOTAL EXPENSES			
NET INCOME			

*RRF = Replacement Reserve Fund
*RDRF = Revenue Deficit Reserve Fund

Appendix 5. Sample Letter of Contribution

XYZ Utility Ltd
123 Avenue
Wellsprings BC V3V 3V3

We hereby contribute, with no expectation of a return on investment, the waterworks required for the provision of water service to the proposed subdivision of (*describe development here*).

Yours truly,

ABC Developments Ltd.

cc: Comptroller of Water Rights

Appendix 6. Registration of Rent Charge Agreement

1. A registered rent charge will ensure that the utility derives adequate revenue for making service available to unimproved lots. A rent charge agreement is a contract between the utility and the property owner for the purpose of ensuring the economic viability of the utility. It requires the approval of the Comptroller as a condition to granting a Certificate of Public Convenience and Necessity.
2. A rent charge document will be registered at the Land Title Office, and therefore is not a document to be treated casually. The sample form of document provided by the Comptroller is *pro forma*; it is not a form with blanks to be filled in. The rent charge document should preferably be prepared by the land developer's solicitor, and should certainly be reviewed by the utility's solicitor before being presented to the Comptroller for approval.
3. A rent charge must effectively be a first lien on the subject property as against any other charges. The charge abates when a lot owner becomes a rate paying water user, but the registered document is not extinguished thereby.
4. The terms and conditions of the agreement should ensure the collection of the charge, and not to provide a means for lot owners to finance their property at the expense of the utility. Therefore, interest rates stipulated by the agreement should be punitive, and the right of the utility to recover any default should not be lenient. At the same time the agreement should not provide an opportunity for the utility to take undue advantage of a default resulting from simple inadvertence.
5. In the case of a proposed subdivision, a rent charge may need to be registered on the parent parcel. Upon registration of the subdivision, the rent charge agreement will appear on the title of each individual lot. For existing utilities, extensions to individual existing lots will require a rent charge registered on each title.
6. A *pro forma* rent charge agreement is available on request.

Appendix 7. Notice of Application

.....
(Name of Applicant)

NOTICE OF APPLICATION TO THE COMPTROLLER OF WATER RIGHTS
UNDER THE *WATER UTILITY ACT* AND
THE *UTILITIES COMMISSION ACT*

NOTICE is hereby given by .....
(Name of Applicant)
that an application has been made to the Comptroller of Water Rights for a Certificate of Public Convenience and Necessity for the proposed construction and operation of a waterworks distribution system to serve residents in the area of

.....

.....
(Legal description of area to be served)

.....

.....

Any person wishing further information in connection with this application should apply directly to

.....
(Name and Address of Applicant)

Any objections to this application are to be forwarded to the Deputy Comptroller of Water Rights*, Water Utility Act*, PO Box 9340 Stn Prov Govt, Victoria B.C. V8W 9M1, to be received by the Deputy Comptroller on or before:

.....
(A date which will allow a period of at least thirty days from date of publication)

.....
(Name of Utility)

.....
(Signature of Applicant or Authorized Agent)

Appendix 8. Water Stewardship Division, MoE Regional Offices

1.	Vancouver Island	Regional Water Manager Water Stewardship Division, MoE 2080 Labieux Rd. Nanaimo BC V9T 6J9	Phone: 250-751-3100 Fax: 250-751-3103
2.	Lower Mainland	Regional Water Manager Water Stewardship Division, MoE 2nd Fl - 10470 152rd St Surrey, BC V3R 0Y3	Phone: 604-582-5200 Fax 604-930-7119
3.	Thompson	Regional Water Manager Water Stewardship Division, MoE 1259 Dalhousie Dr. Kamloops, BC V2C 5Z5	Phone: 250-371-6200 Fax: 250-828-4000
4.	Kootenay	Regional Water Manager Water Stewardship Division, MoE 205 Industrial Rd. G Cranbrook, BC V1C 7G5	Phone: 250-489-8540 Fax: 250-489-8506
	Subregion office	401-333 Victoria St. Nelson, BC V1L 4K3	Phone: 250-354-6332 Fax:
5.	Cariboo	Regional Director Water Stewardship Division, MoE 400-640 Borland St. Williams Lake, BC V2G 4T1	Phone: 250-398- 4530 Fax: 250-398- 4214
6.	Skeena	Regional Director Water Stewardship Division, MoE PO Box 5000, 3726 Alfred Ave. Smithers, BC V0J 2N0	Phone: 250-847-7260 Fax: 250-847-7591
7.	Omineca	Regional Director Water Stewardship Division, MoE 4051 18th Ave. Prince George, BC V2N 1B3	Phone: 250-565-6135 Fax: 250-565-6629
8.	Okanagan	Regional Director Water Stewardship Division, MoE 102 Industrial Place Penticton, BC V2A 7C8	Phone: Fax:

9.	Peace	Regional Director Water Stewardship Division, MoE 400-10003 110th Ave. BC V1J 6M2	Phone: 250-787-3411 Fax: 250-787-3490

Appendix 9. Community Water Supply Wells, Groundwater Reports and Well Test Analyses in Support of a CPCN[2]

1. General Information

Well performance and aquifer capabilities must be adequately assessed where a groundwater supply is to be developed for community use. Certain procedures must be followed in well testing and the presentation of groundwater information to the Comptroller of Water Rights for a CPCN under the Water Utility and Utilities Commission Acts. The intent of these requirements is not to lay down rigid rules but to avoid unnecessary delays or retests at the applicant's expense due to inadequate test procedures or report presentations. The Comptroller will, on request and with the assistance of the Groundwater Section, review the requirements for any particular case with the applicant or the applicant's professional hydrogeologist[3] prior to the well test.

2. Retain a Professional Hydrogeologist at the Start

The applicant is advised to retain the services of a consulting professional hydrogeologist before the well is drilled and tested. In the past, some applicants have had the well drilled and/or tested prior to hiring a professional hydrogeologist. In these cases, the professional hydrogeologist would not have had adequate input into the well siting, design, and testing stages of the work. This has resulted in having to retest and, in some cases, re-drill the well because testing was inadequate or the well was not properly sited or constructed.

The need for a professional hydrogeologist can not be over-emphasized. Retain a hydrogeologist to design, supervise and report on the development of the groundwater supply from start to finish to ensure adequate well construction and testing procedures are followed.

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[2] This document also replaces Appendix No. 5, Community Water Supply Wells – Groundwater Reports and Well Tests in Support of a Certificate of Public Convenience and Necessity in *Guidelines for Minimum Standards in Water Well Construction, Province of British Columbia* (1982).

[3] A professional hydrogeologist is a person who is registered as a Professional Geoscientist (P.Geo.) or a Professional Engineer (P.Eng.) with the Association of Professional Engineers and Geoscientists of British Columbia with competency in the field of hydrogeology.

3. Contents of the Groundwater Report

The final groundwater report presented should discuss such points as:

1. water supply requirements,
2. well design, construction and development methods,
3. well lithology and hydrogeologic setting,
4. type of aquifer and aquifer boundaries,
5. recharge conditions,
6. well interference,
7. potential impact on licensed water users and existing wells,
8. water quality,
9. possibility of pollution, including salt water and other unpotable water,
10. long-term well capacity and how it was calculated,
11. recommendations on operation of the well, e.g., over pumping, backwashing, raw hiding, redevelopment, etc.,
12. recommendations on a future monitoring program, installation and monitoring of observation well(s),
13. recommendations on well and aquifer protection, e.g., estimating the recharge area to the well, identifying the potential groundwater protection issues in the area and outlining a well protection plan to address those issues.

The report should include a site plan showing locations of the well sites, locations of any unsuccessful test well sites, and any neighbouring wells. Show the sites in relation to existing gazetted roadways, streams and lakes, sanitary land fills, septic field disposal, and the boundaries of any municipalities, improvement districts, etc., in the vicinity. The site plan should show the locations of water sources of other water works within 1 km (one half mile) of the boundaries of the proposed utility. The location of any wells that may be affected through interference by pumping of the applicant’s well should also be indicated. Show the legal description of the proposed well site areas, including registered plan and lot numbers as assigned by the Local Land Registry Office. Approximate elevations (to within +/- 0.5 m) should be given on each well and on important adjacent features such as lake levels, river levels, etc. This is especially important for wells located near the ocean, since the pumping water level relative to sea level is a determining factor in estimating well capacity.

The report should contain a copy of the well driller's original log for every hole drilled under the program, and also a sketch showing well design

specifications for each completed well. For wells completed in fractured bedrock, report the location and flow rate of each major water-bearing fracture. Details should be given of the pumping equipment used, and the method of measurement for water well readings and for flow.

The report should also include a cross-section(s), where appropriate, showing the subsurface hydrogeology, location and extent of the aquifer, and known piezometric water levels. Relevant information (e.g., location of other wells and main topographic features) should also be shown. Indicate the location of the cross-section(s) on the site plan.

4. Well Testing

There are standard procedures for pumping tests, recording of data (e.g., Driscoll, 1986) and report preparation. For example, the drawdown and recovery measurements in the pumped well and in the observation wells should be measured in metres to the nearest 0.005 metre (or feet to the nearest one hundredth of a foot). The time intervals for both drawdown and recovery readings should be short enough to adequately record any rapid drawdown during start of pumping and any rapid recovery immediately after pump shut-down. The time interval after these initial periods can of course then be lengthened between the readings. The pumping rate Q is to be expressed in litres per second (L/s) or U.S. or Imperial gallons per minute. The pumping rate Q is to remain constant throughout the period of pumping, in the final "constant rate" test. This test will involve continuous pumping at a constant rate for 24 hours or longer (see below). Step drawdown tests or "maximum drawdown" tests can be used initially to determine the Q rate.

To prevent well water from returning to the aquifer during the pumping test period, lay sufficient discharge pipe away from the test well. Refer to the tables at the end of this section for the type of information to be recorded in pumping and recovery tests. Report records of any rainfall, tidal variation, or barometric variation immediately before, during and after the well test, if applicable. Also report the start and stop of pumping of any nearby wells that may interfere with the drawdown in the pumping well.

4.1 Boundary Conditions

If recharge or discharge boundaries are detected, then more frequent measurements are also recommended. This can best be done by returning to the time interval set out for the start of the test, i.e., "every minute from 1 to 10 minutes," etc. It is important to continue pumping long enough to establish the drawdown trend affected by the boundary condition. The physical basis for the interpretation of the type of boundary condition should be explained. For example, did the water level in the pumping well stabilize because of

induced infiltration from a nearby lake or because of an increase in aquifer transmissivity? What physical evidence is there?

4.2 Induced Infiltration

This condition could apply in well sites located adjacent to a surface water body: river, lake, etc. If equilibrium test conditions are clearly shown, that is, a stable water level in the well in conjunction with a uniform rate of pumping, the test may be terminated prior to the recommended standard 24 hour pumping period.

4.3 Fractured Bedrock

For wells located in fractured bedrock, the pumping rate should be at or in excess of the supply requirements of the application. Hold the pumping rate constant throughout the testing period, which should last for a minimum of 72 hours. Report the location and estimated flow rate of each major water-bearing fracture in the well. In the Gulf Islands and in coastal areas wells should only be tested in the middle and late summer and early fall periods when recharge is minimal. In the interior of the province, wells are only to be tested in the fall to spring period when water levels are not affected by snow melt. The applicant and professional hydrogeologist should coordinate their activities to conduct well testing during the stipulated periods. This would avoid unnecessary delays and facilitate a more accurate estimate of well performance.

It is also recommended that prior to testing wells completed in fractured bedrock, public notices be posted in the local area or written notices be provided to neighbouring property owners to inform residents that a pump test will be conducted. The residents can bring forward for consideration, prior to the pump test, any concerns or requests for having their well monitored, so these concerns can be addresses.

4.4 Flowing Artesian Condition

In this special case it is essential to check the artesian pressure head prior to and after a pumping test to assess whether the water level recovers completely after pump testing. The artesian pressure is usually measured with a pressure gauge sealed at the well head; at least two readings, before pump testing and after recover, should be made.

Sometimes the artesian pressure head is not measured but is assumed to be at ground level (or top of casing). This assumption, however, causes the available drawdown in the well to be under-estimated, resulting in a lower capacity calculated for the well and does not allow recovery after pump testing to be adequately assessed.

4.5 Coastal Aquifers

It is important that the recommended procedures for taking samples of the pumped well water for full chemical analyses be followed.

It is also strongly recommended that a field test kit be available for testing specific conductance and/or the chloride content of the pumped water during the pumping test. The field kit should measure specific conductance to within +/- 5 μS/cm and chloride to within +/- 5 mg/L. The purpose is to try to determine possible sea water encroachment. The professional hydrogeologist should determine, prior to the pump test, the maximum specific conductance and/or chloride concentration that should not be exceeded during pumping. If encroachment is evident, the pump test may have to be terminated. In coastal aquifers the professional hydrogeologist should include data on local tidal fluctuations where these are affecting the apparent drawdown in the test well. Tidal effects should be filtered out of the drawdown and recovery data prior to interpretation (see Dawson and Istok, 1991, for techniques). The elevation of the pumping and non-pumping well water level should also be reported (to within +/- 0.5 m) because the water level relative to sea level may affect how the long-term well capacity is calculated for wells in coastal aquifers.

4.6 Developed Springs and Seepage Sites

In the case of springs and seepage areas developed by excavation into ponds and "holding reservoirs" the following procedures are recommended. The excavation dimensions should be measured. Pump the reservoir dry (if practical) and take recovery measurements as specified above. Obtain the full recovery. Make notes regarding entry of water into the excavation where possible.

5. Water Quality

Take at least one sample of the pumped well water near the end of the pump test and send it for chemical analyses. The analyses should include all major ions, iron and manganese, and tests for other metals if known to be present in the groundwater of the area. A list of recommended parameters is given in Section 1. Preferably, take two water samples; one near the end of the pumping test and one near the beginning of pumping, e.g., almost one hour after start of pumping. The professional hydrogeologist is expected to make arrangements with a commercial laboratory for this service. Adhere to the laboratory's requirements for sample collection, handling and delivery. Take samples for bacteriological analyses according to the requirements specified by the local health authority. (See Section 2.)

In reviewing water quality for water supply wells, the Groundwater Section, Ministry of Water, Air and Land Protection, considers the following:

1. the cation/anion charge balance of the sample and the amount of total versus dissolved concentrations to check gross errors,

2. potability of the water for intended use, and

3. potential for the water to encrust or corrode, which may affect maintenance costs and operational life of the well.

In addition to collecting samples for laboratory analyses, water quality should be monitored in the field with field analysis kits. Two water quality parameters recommended for monitoring in the field are pH and specific conductance. Measurement of field pH is important because pH in the sample bottle may change during transit to the laboratory. Measurement of specific conductance may provide clues to potential for sea water encroachment or interception of source of surface water recharge, for example.

6. Well Interference

Assess the impact of pumping of the water well on other private wells in the area. In assessing well interference, the hydrogeologist should measure drawdown in nearby wells, wherever possible during the pumping test.

7. Impact on Licensed Water Users

Assess the impact of pumping of the water well on surface water and springs in areas where water licences are known to exist. It may be necessary to monitor flows of nearby spring and surface water sources during the pumping test.

8. Estimating Well Capacity

In reviewing long-term capacities for water supply wells, the Groundwater Section, Water Stewardship Division, considers the following four main criteria:

1. adequacy of the pump test procedures,
2. the performance of the well as indicated by the long-term specific capacity,
3. the available drawdown in the well,

4. other factors that may impact well capacity.

Pump test procedures are discussed above. In assessing well performance, the well's specific capacity after 100 days of continuous pumping is estimated from the drawdown data. The 100 days of continuous pumping represent a period where no recharge occurs (summer and fall months in coastal areas and fall and winter months in the interior). Recharge is assumed to occur annually with winter rains or snow melt. The available drawdown in a well is typically the distance between the non-pumping water level and the top of the well screen, top of the confining layer, to sea level, to the uppermost major water-bearing fracture (bedrock well), depending on the appropriate situation. A safety factor, usually 30% of the available drawdown, is allowed in calculating the well capacity. Estimate well capacity by multiplying the specific capacity at 100 days with the safe available drawdown in the well (total available drawdown minus the 30% safety).

Other factors that may affect well capacity, such as well interference, impact on licensed surface water, aquifer mining, sea water encroachment, for example, are considerations in estimating the long-term capacity.

The estimated capacity for the well **should not exceed** the flow rate at which the well was pump tested. One exception would be if the pump test results indicate that the aquifer's yield is significantly greater than the well requirements.

9. Special Requirements Attached to the Certificate

Certain conditions may be attached to the certificate with regard to the well source. For example, further collection of data during subsequent well operations and possibly a hydrogeological report may be needed. These special requirements may be applied where legal problems arise in the development of groundwater supplies, such as groundwater withdrawals affecting stream and spring flows which may be under licence, where supplies of water to an adjacent well may be affected by pumping or where a producing aquifer is suspected of being limited in extent or capacity.

10. References

Dawson, K.J. and J.D. Istok, 1991. Aquifer Testing-Design and Analysis of Pumping and Slug Tests. Lewis Publishers, Inc., Chelsea, Michigan, 344 pp.

Driscoll, F.G., 1986. Groundwater and Wells. Second edition, Johnson Division, St. Paul, Minnesota, 1089 pp.

Ministry of Environment, 1982. Guidelines for Minimum Standards in Water Well Construction, Province of British Columbia. Groundwater Section, Water Stewardship Division, 35 pp.

11. Acknowledgements

We thank A. Badry, P.Geo., B. Ingimundson, P. Geo., L. Topp, P. Geo., and G. Wendling, P. Eng., for reviewing a draft of this appendix and providing useful comments.

Pumping Test

Depth to water in well from top of casing before test: _____metres

Time	Time Since Start of Pumping (minutes)	Depth to Water in Well from Top of Casing (metres)	Discharge from Well (litres/minute)	Field water quality measurement	Comments

For the above table, readings should be taken every minute from 1 to 10 minutes and then every 10 minutes from 10 to 120 minutes (2 hours), then readings every 1½ hours thereafter.

A preferred method for ease in plotting the data, but one that is harder to comply with is as follows:

1. Readings every 30 seconds from 1 to 5 minutes
2. Readings every minute from 5 to 10 minutes
3. Readings every 2 minutes from 10 to 20 minutes
4. Readings every 5 minutes from 20 to 50 minutes
5. Readings every 10 minutes from 50 to 100 minutes
6. Readings every 50 minutes from 100 to 500 minutes
7. Readings every 100 minutes thereafter

Whenever possible, monitoring of the drawdown and recovery in other wells in the vicinity is recommended. Electronic data loggers can be used to measure the well water level but the logger readings should be calibrated through manual readings.

Recovery Test

Time	Time Since Start of Pumping	Time Since Pumping Stopped (minutes)	Depth to Water in Well from Top of Casing

	(minutes)		(metres)

For the above table, readings should be taken every minute from 1 to 10 minutes and then every 10 minutes from 10 to 120 minutes (2 hours), then readings every 1½ hours thereafter. Slow recovery may require that the last readings be spaced as much as 8 to 12 hours apart.

A preferred method for ease in plotting the data, but one that is harder to comply with is as follows:

1. Readings every 30 seconds from 1 to 5 minutes
2. Readings every minute from 5 to 10 minutes
3. Readings every 2 minutes from 10 to 20 minutes
4. Readings every 5 minutes from 20 to 50 minutes
5. Readings every 10 minutes from 50 to 100 minutes
6. Readings every 50 minutes from 100 to 500 minutes
7. Readings every 100 minutes from 500 to 1,000 minutes
8. Readings every 500 minutes from 1,000 to 5,000 minutes

Section 1
List of Recommended Parameters for Chemical Analyses*

	Units
Phen. Alkalinity	mg/L
Total Alkalinity	mg/L
Sulphate ($SO_4^{=}$)	mg/L
Nitrite-Nitrogen and Nitrate-Nitrogen (NO_2-N + NO_3-N)	mg/L
Total Kjeldahl Nitrogen (TKN)	mg/L
Total Phosphorous (P)	mg/L
Fluoride (F^-)	mg/L
Chloride (Cl^-)	mg/L
Calcium (Ca^{++})	mg/L
Magnesium (Mg^{++})	mg/L
Sodium (Na^+)	mg/L

Potassium (K^+)	mg/L
Manganese (Total and dissolved) (Mn)	mg/L
Iron (Total and dissolved) (Fe)	mg/L
Silica (SiO_2)	mg/L
Sp. Conductance	□mhos/cm at 250°C
pH	relative units
Total Dissolved Solids (T.D.S.)	mg/L
Total Hardness ($CaCO_3$)	mg/L
Turbidity	(J.T.U.)

- Additional parameters may be required by the local authorities where known or suspected sources of pollution or naturally occurring water quality concerns exist (e.g., Arsenic, Uranium, Volatile Organic Compounds). In the Vancouver Island and Coast Garibaldi regions, the local health authority may require additional parameters for analysis, depending on whether the well is shallow or deep (e.g., colour, total or dissolved organic carbon, ammonia, turbidity, sulphide, metals, iron and sulphate reducing bacteria).

Section 2
Bacteriological Quality and Collection Procedures

Take a sample on all wells to determine bacteriological quality. For new or repaired wells AWWA AIOO-66 recommends collecting any sample for determination of bacteriological quality following the disinfection of the well. First remove chlorine solution from the well by pumping, and reduce chlorine residual to less than 2 ppm before the sample is taken. Take special care in collecting the sample to avoid contacting the inside of the bottle or the cap with fingers. Request that the local public health inspector obtain a sample for bacteriological analyses when the water is to be used for a public water supply system. In situations where this is not possible, obtain sample bottles and advice on sampling techniques through the local health district.

Reliability of Sample Results

The quality of any drinking water supply cannot be determined with confidence from the result of a single sample. Determining water quality is possible only by observing the results of several samples over a long period of time. Shallow wells that may be influenced by surface contamination near the well may produce water of varying quality depending on the climatic and physical conditions. Therefore, if a sanitary survey shows a well water supply to be obviously subject to pollution, the water may be condemned regardless of the test results.