

Summary of Project Approval Requirements for Public Water Systems – Permits to Construct or Alter –

PURPOSE

To continue to ensure public health protection related to drinking water, Manitoba has introduced new regulations for the approval, design and operation of drinking water systems. These regulations, created under *The Drinking Water Safety Act*, take the place of some existing requirements under *The Public Health Act*, specifically the portions of Manitoba Regulation 330/88R Water Supplies Regulation and 331/88R Water Works, Sewerage and Sewage Disposal Regulation related to drinking water systems. The two new regulations are Manitoba Regulation 40/2007 Drinking Water Safety Regulation and 41/2007 Drinking Water Quality Standards Regulation. They can be viewed at: www.manitoba.ca/drinkingwater.

The new regulations set out requirements for public water systems including:

- A permit for the construction or alteration of a water system
- An operating licence for operation of a water system
- A periodic assessment of a water system's infrastructure and water source
- Water quality and treatment standards

This information bulletin provides guidance to water system owners and consultants on the new approval process for issuing permits to construct or alter public water systems in Manitoba.

Are all water systems impacted by the permit requirements of the regulations?

Similar to other provinces, water systems in Manitoba are classified into three categories:

- A public water system is a system with 15 or more service connections (ex: building connections, standpipes), or a system that has been designated to be a public water system by the Office of Drinking Water.
- A private water system is a system that supplies water to a single home or a system that has been designated as a private system by the Office of Drinking Water.
- A semi-public water system is basically anything in between and may include public facilities such as hospitals, schools and restaurants with their own water supply system, or small water systems (less than 15 but more than one service connection).

While the new regulations set out requirements for both public and semi-public water systems, **the initial focus will be on public water systems**. Regulatory requirements for semi-public water systems will be phased in. Private water systems continue to be exempt from direct regulation, although the general provisions of *The Public Health Act* and *The Drinking Water Safety Act* apply, for example, protecting drinking water sources from contamination.

PERMITS TO CONSTRUCT OR ALTER A PUBLIC WATER SYSTEM

(Section 7, *The Drinking Water Safety Act*, Sections 3-7, Drinking Water Safety Regulation)

When is a construction permit required?

A permit must be obtained from the Office of Drinking Water prior to the construction of a new public water system or alteration (ex: modification, upgrading or extension) of an existing public water system. The permit will specify terms and conditions under which the project can proceed; additional recommendations may be provided in the accompanying approval letter. The types of projects requiring a permit typically include:

- Alterations or upgrades to water treatment systems
- Construction of inground water storage reservoirs
- Construction of pumping facilities
- Construction of bulk fill stations
- Major extensions or redesigns to watermains or distribution systems
- Development of new water sources

In some cases, a proposed project may be exempt from these requirements due to its scope, for example, in-kind replacement of existing equipment, watermain replacement with minimal pipe size change or maintenance activities including relining mains. In such cases, a brief project description should be forwarded to the Office of Drinking Water.

In some cases, a proposed project may require approval but if considered minor in nature and designed to meet accepted standards, the issuance of a permit may not be required, for example, minor water system extensions in areas where there is no known or suspected contamination and acceptable design standards will be met including 3m separation from sewer mains. The submission of an approvals package including engineering drawings, specifications and a design brief may still be required. For some of these projects, engineering drawings may not be required such as installing a back-up well, a storage tank or an emergency generator.

The Office of Drinking Water can be contacted for advice on the need to obtain a permit during the project planning phase so delays are not encountered in later project phases.

Once a permit has been issued for the construction or alteration of a public water system, it may be amended by the Office of Drinking Water. Water system owners can also apply for an amendment to a permit by submitting the required application form.

Regulatory requirements for semi-public water systems will be phased in. Project proponents should discuss their plans with their regional Drinking Water Officer. The submission of project information such as a schematic diagram, project description, location map, and specification sheets for treatment components may be required.

How do I go about obtaining a Permit to Construct or Alter?

If your project requires a permit, a complete permit application must be submitted. The application form lists the required and suggested supporting material that should accompany an application to avoid delays. Plans developed and sealed by a professional engineer registered to practice in the province of Manitoba must be submitted as part of a permit application. Permit information and forms can be obtained from the Office of Drinking Water or our website.

What information is generally requested as part of a permit application process?

The overall objective for water system design and operation should be the production and distribution of drinking water that consistently meets the health-based standards specified in Manitoba Regulation 41/2007 Drinking Water Quality Standards Regulation with a goal of meeting Health Canada's *Guidelines for Canadian Drinking Water Quality (GCDWQ)*. The water system must also have the capacity to meet water demands without developing water pressure or water quality issues taking into account the desired level of fire protection.

Engineering drawings, construction specifications, a design brief and a design summary and compliance statement **must be included** along with a permit application form. The drawings must be signed and sealed by a professional engineer registered to practice in the province of Manitoba. The drawings must include the location and details for all proposed water supply, transmission, storage, pumping, treatment and distribution works. The drawings must also show the locations of sewer mains, lift stations, lagoons and other potential sources of contamination in the area of the proposed project. The design brief must include a project description, schedule, summary of basic design information, identification of the initial owner (during construction) and ultimate owner (once operational) of the works and their contact information if not provided on the application form, as well as a location map if not included in the drawings. The design brief should include a summary of project alternatives that were evaluated, where applicable, for example, alternative sites, alternative water sources or alternative treatment technologies. A design summary must also be submitted to highlight major design decisions/parameters and compliance with, or variance from, accepted standards.

All projects must include a description of control and instrumentation systems and emergency response provisions (ex: alarm systems, emergency plan, back-up power). Staff training and technical manuals must be described if not included in the construction specifications. A description of how water service will be maintained during the alteration of an existing water system must also be provided.

The Office of Drinking Water applies the *Recommended Standards for Water Works* (commonly known as *The Ten State Standards*) developed by the Great Lakes – Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, CSA and AWWA standards, and provincial regulatory standards and guidelines. The Ten State Standards are widely used in North American jurisdictions as the basis for water system approval reviews. A permit application must include a statement by the engineer that the design was in general conformance with these standards along with an explanation or justification for any significant deviations from these standards which may impact the protection of public health.

Depending on the work being undertaken, additional information may be requested such as:

- For water supply projects, the location and design details for the proposed water intake or well, a copy of the hydrologist's/hydrogeologist's report, and water quality analysis results (bacteriological, physical, chemical). A basic assessment of the vulnerability of the proposed water source to contamination should be included, for example, the location of any potential sources of contamination, and measures included to reduce the contamination risk, for example, well casing and grouting, or surface intake location and depth. An assessment of seasonal variability of key water quality parameters should also be included.
- For water treatment and disinfection projects, a description of how applicable provincial water quality standards and the *GCDWQ* will be met, along with disinfection inactivation

(CT/IT) calculations, where applicable. Additional testing or pilot scale studies may be required to confirm the suitability of the proposed water treatment process. Basic design information should be submitted including:

- water demands used for design, plant design capacity and equipment sizes
- a treatment process description including a flow diagram (treatment process schematic), showing valves, chemical addition points, sampling points, equipment location, meters, analyzers and other process control devices
- specifications for any package water treatment equipment
- a description of wastewater and waste handling systems including confirmation that the local sewer collection and treatment systems can accept the additional loading, where applicable
- potential cross-connections and backflow prevention measures
- water quality performance guarantees or treated water quality objectives that will be met
- commissioning procedures

Guidelines are available on the Office of Drinking Water website for the selection, design, operation and approval of water disinfectants.

- For water distribution projects, basic information on the number and type of service connections should be provided including metering and backflow prevention provisions. A description of the construction process and specifications for associated on-lot servicing work should be included. Confirmation must be provided that the water system has the capacity to meet the additional water demands without causing water pressure or water treatment issues.

Are there other regulatory requirements that must be met?

The owner of the water system is responsible for ensuring all other regulatory requirements are met. Project proponents are encouraged to contact the Water Licensing Branch of Manitoba Water Stewardship and the Environmental Approvals Branch of Manitoba Conservation early in a construction or upgrading project to determine if a Water Rights Licence or an Environment Act Licence will be required for their project. In addition, Manitoba Regulation 77/2003 Water and Wastewater Facility Operators Regulation requires the classification of water systems and the certification of operators. This regulation is managed by Manitoba Conservation. Depending on the type of project being undertaken, contact may be required with other government agencies or organizations, for example, where permission is required for a utility crossing or stream crossing, to ensure compliance with federal fish screen requirements, to ensure compliance with local bylaws or to clarify workplace health and safety requirements.

What steps are involved in obtaining a permit?

In general, public water system project proponents should follow the steps outlined. Semi-public water system project proponents should discuss their project with the Office of Drinking Water to ensure regulatory requirements will be met. The following sequence of steps contains information that may also be relevant to semi-public water system projects.

- 1) Contact the Office of Drinking Water to discuss your plans early on in project planning. Office of Drinking Water staff can provide information and advice. Contact may also be required with other municipal, provincial or federal government agencies.
- 2) Review all applicable regulations and requirements. It is important that project proponents are familiar with the legislation affecting drinking water systems.
- 3) Consider all alternatives. Owning and operating a water system is a significant responsibility and involves ongoing diligence and funding to ensure safe water is delivered to customers. For example, explore the possibility of connecting to another approved water system or project funding opportunities.
- 4) Engage the services of a qualified professional engineer to oversee the proposed work.
- 5) Where the proposed design may involve a non-traditional technology, a major alteration to a water system, an alternative disinfection strategy or a significant deviation from recommended standards requiring special consideration, the Office of Drinking Water should be contacted as early as possible to ensure any approval requirements or design modifications are addressed before preparation of the tender documents. The Office of Drinking Water may request submission of documentation to support the discussion such as a pre-design report, feasibility report, Environment Act proposal, or technical note.
- 6) Submit a completed permit application form and supporting material 30-60 days before the planned date for construction activities. The proponent or their authorized representative can make the submission. Depending on the complexity of the project and the completeness of the submission, the review process may take several months. Although approval reviews are conducted on a first-come first-serve basis, the Office of Drinking Water will try to accommodate project schedules.
- 7) Comply with any requests from the Office of Drinking Water. If the application is found to be incomplete, additional information will be required. Office of Drinking Water staff may also request other information or carry out an inspection to confirm the project will conform with applicable standards, generally accepted design practices, and provincial regulations and guidelines. The Office of Drinking Water will send an approval review letter and permit to the engineer with copies to the owner.
- 8) Once a permit has been issued, construction can begin. Comply with all permit conditions. If significant changes are required before or during construction or significant delays are expected, inform the Office of Drinking Water. A permit amendment may be required.
- 9) Notify the Office of Drinking Water, and submit the required post-construction report as directed in the permit. Approval must be received from the Office of Drinking Water to place the new works into operation. In some cases, a new operating licence or an amendment to an existing operating licence must be issued before the new works can be placed into operation. Where a new water system is being constructed, the owner should submit an application for an operating licence prior to the completion of construction to ensure there are no delays in bringing the system on-line. Where changes to a water system require amendments to an existing operating licence, the Office of Drinking Water will undertake these amendments and issue the amended licence as part of the project approval process.

OFFICE OF DRINKING WATER CONTACT INFORMATION

Project approval information including application forms and the new regulations are available on the Office of Drinking Water website: www.manitoba.ca/drinkingwater. Please forward any questions on the permit process and requests for project-specific approvals requirements to:

Kim Barlishen, P.Eng.
Environmental Engineer
Office of Drinking Water
1007 Century Street
Winnipeg, MB R3H 0W4
Phone: 204-945-5936
Fax: 204-945-1365

Water system owners can contact their regional Drinking Water Officer with questions on regulatory requirements and compliance deadlines for their water system or to request forms.

Marc Balcaen, DWO
Manitoba Water Stewardship
555 Main Street
Winkler MB R6W 1C4
Phone: 204-325-1752
Fax: 204-325-1758

Melanie Betsill, DWO
Manitoba Water Stewardship
Box 4000, Provincial Highway #502
Lac du Bonnet MB R0E 1A0
Phone: 204-345-1487
Fax: 204-345-1440

Burnid Briggs, DWO
Manitoba Water Stewardship
75 – 7th Avenue
Gimli MB R0C 1B0
Phone: 204-642-6134
Fax: 204-642-6108

Jack Cronk, DWO
Manitoba Water Stewardship
25 Tupper St. N.
Portage la Prairie MB R1N 3K1
Phone: 204-239-3186
Fax: 204-239-3215

Scott Davies, DWO
Manitoba Water Stewardship
1007 Century Street
Winnipeg MB R3H 0W4
Phone: 204-945-6279
Fax: 204-945-1365

Curtis Holowachuk, DWO
Box 2019, Unit 5 – 284 Reimer Avenue
Steinbach MB R5G 1N6
Phone: 204-346-6062
Fax: 204-326-2472

Don Michalyk, DWO
27 – 2nd Avenue S.W.
Dauphin MB R7N 3E5
Phone: 204-622-2153
Fax: 204-638-8626

Christine Roberts, DWO
Manitoba Water Stewardship
Box 28, 59 Elizabeth Drive
Thompson MB R8N 1X4
Phone: 204-677-6704
Fax: 204-677-6888

Glen Robertson, DWO
Manitoba Water Stewardship
1129 Queens Avenue
Brandon MB R7A 1L9
Phone: 204-726-6563
Fax: 204-726-6567