



Town of Bradford West Gwillimbury Municipal Drinking Water System Legislative Requirements

This document has been developed to assist the Town of Bradford West Gwillimbury (BWG) in communicating legislative requirements for the Drinking Water System (DWS) to various parties involved in the ownership, operation, maintenance or alteration of the drinking water system. These parties include:

- Town of BWG Council
- Town of BWG Engineering Services Department
- Developers/owners constructing watermain/servicing which will be connected to the Bradford/Bondhead DWS
- Consultants responsible for the design and/or contract administration of watermain projects
- Contractors working on watermain that is part of, or will become, part of the Bradford/Bondhead DWS

The purpose for this communication is to meet specific conditions^{1,2} of the Town's Municipal Drinking Water License (MDWL) and Drinking Water Works Permit (DWWP).

Legislative Requirements

What are the rules and regulations that govern the DWS?

The Safe Drinking Water Act (SDWA) is the principal provincial law which regulates the treatment and distribution of drinking water in Ontario. The SDWA and its supporting regulations have a number of components which have been established to protect drinking water consumers.

The components include:

- Defining standards for drinking water quality
- Accreditation and licensing of drinking water testing laboratories
- Accreditation and licensing of DWS operating authorities
- Training and certification of DWS operators
- Defining the requirements for operating authorities to sample, test and monitor the quality of drinking water within the DWS
- Defining the protocol for reporting and implementing corrective actions in response to incidents of adverse drinking water quality
- Imposing a statutory "Standard of Care" for Owners and managers of DWS's
- Defining inspection and enforcement requirements for the Ministry of the Environment (MOE) and defining penalties for offences

The following list identifies some of the regulations under the SDWA which apply to the DWS:

- Ontario Drinking Water Quality Standards - O.Reg.169/03

¹ Section 5.1 of MDWL # 116-101 states: "The owner and operating authority shall ensure that any person authorized to carry out work on or to operate any aspect of the drinking water system has been informed of the SDWA, all applicable regulations made in accordance with that act, the drinking water works permit and this licence and shall take all reasonable measures to ensure any such person complies with the same."

² Section 2.6 of DWWP # 116-201 states: "The owner shall notify the legal owner of any part of the drinking water system that is prescribed as a municipal drinking water system by section 2 of O. Reg. 172/03 of the requirements of the licence and this drinking water works permit as applicable to the prescribed system."

- Drinking Water Systems - O.Reg.170/03
- Certification of Drinking Water System Operators and Water Quality Analysts - O.Reg.128/04
- Drinking Water Testing Services - O.Reg.248/03
- Licensing of Municipal Drinking Water Systems - O. Reg.188/07

Municipal Drinking Water License (MDWL) Program

The Ministry of the Environment (MOE) implemented a new Municipal Drinking Water Licensing Program as recommended by Justice O'Connor in the Part II Report of the Walkerton Inquiry. The MDWL program under the Safe Drinking Water Act (SDWA) requires the Town of BWG to become licensed to operate and incorporate the concept of quality management into the Town's drinking water system. The Town of BWG's MDWL No.116-101 was first issued on August 23, 2011.

The MDWL is comprised of the following components:

- **Drinking Water Works Permit (DWWP)**

The Drinking Water Works Permit (together with the MDWL), replaces the MOE's Certificate of Approval process. It focuses on the physical and technical capabilities of the drinking water system. It allows municipalities to complete and/or approve certain alterations to the drinking water system without requiring additional approval from the MOE. The Town of BWG DWWP No.116-201 was first issued to the Town on August 19, 2011.

- **Permit to Take Water (PTTW)**

In Ontario, as required under the Ontario Water Resources Act (OWRA), anyone who takes more than 50, 000 Litres of water a day from a lake, river, stream or groundwater source, must obtain a PTTW from the MOE. The Town currently holds a valid PTTW, permit No.5377-8PYNCG, which expires on December 31, 2021.

- **Operational Plan**

Defines and documents the Quality Management System (QMS) for the Town's drinking water system. It outlines the policies and procedures in accordance with the requirements of the MOE's Drinking Water Quality Management Standard (DWQMS).

- **Accredited Operating Authority**

Municipalities must receive formal accreditation for their QMS. The accreditation process involves comprehensive audits and periodic review of the Operational Plan by an independent certified accreditation body, appointed by the MOE. The Town of BWG received accreditation as an Accredited Operating Authority on July 15, 2011.

- **Financial Plan**

The Financial Plan is a long-term strategic plan that must demonstrate a sustainable approach towards management of assets to ensure the financial sustainability of the drinking water system. The Town of BWG's Financial Plan was prepared in accordance with O. Regulation 455/07, as required, and was submitted to the Ministry of Municipal Affairs and Housing.

A copy of the Town's MDWL, DWWP, Operational Plan and Financial Plan are available for public viewing at the Town's Engineering Services Department.

What is a Quality Management System (QMS)?

A Quality Management System consists of policies, procedures and objectives that direct and control an organization with respect to quality. To meet the requirements of the MOE's Municipal Drinking Water Licensing Program the Town must have a QMS in place which conforms to the MOE's Drinking Water Quality Management Standard (DWQMS).

What is DWQMS?

The DWQMS is a "made in Ontario" standard developed specifically for Municipal Drinking Water Systems. It is a tool for owners and operators to help ensure that consistent processes and procedures are in place to manage the production and delivery of quality drinking water. These processes and procedures also provide the tools necessary to continuously assess the system, and help assist in meeting the Standard of Care provisions.

How does the legislation apply to Council and Top Management?

The SDWA and associated regulations define the roles and responsibilities of the "Owner" (Town Council) and the "Operating Authority" (Engineering Services Department) as they relate to the drinking water system. Sections 11 and 19 of the SDWA define these responsibilities.

Under Section 11 of the SDWA, Owners and Operating Authorities are required to:

- Provide water that meets provincial drinking water quality standards
- Operate the DWS in accordance with the SDWA and associated regulations
- Ensure the DWS is kept in good repair
- Ensure the DWS is appropriately staffed and supervised by qualified persons
- Comply with the sampling, testing, monitoring and notification requirements of the system
- Meet reporting requirements for the system

Section 19 of the SDWA defines a "Standard of Care" clause, which further defines the responsibilities of Owners and Operating Authorities, requiring them to:

- *"Exercise the level of care, diligence and skill in respect of a municipal drinking-water system that a reasonably prudent person would be expected to exercise in a similar situation;*
- *Act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking-water system."*

This means:

- Council and Top Management³ must have an awareness of applicable legislation & regulations respecting the drinking water system
- Council and Top Management must maintain an understanding of the Town's drinking water system and receive information about its performance
- Top Management must communicate changes in system performance and resource needs to Council

³ Under the Town's QMS, the Town Manager, Director of Engineering Services, and Manager of Water Division is defined as Top Management for the Operating Authority.

- Council must review these changes in performance, including Top Management's recommendations and act diligently in providing the appropriate resources where requested

The Operational Plan developed for the Town's QMS is used to document how the Town achieves compliance with the MOE's DWQMS, but also the SDWA itself. The Town achieves compliance through the implementation of the various components of the QMS. Some of the components include:

- Endorsement from Council and Top Management of the Operational Plan and the QMS
- Defined roles and responsibilities of various levels of the organization
- Methods for ensuring competencies of staff
- Defined procedures for sampling, testing and monitoring drinking water quality
- Methodology used for reviewing the adequacy of the drinking water system infrastructure and the maintenance, rehabilitation and renewal programs put in place to protect the integrity of the system
- Defined protocol for communicating between all levels of the organization

What does this all mean for owners/developers?

The new DWWP process means that the majority of watermain alterations, including new developments, can be approved "in-house" by the Town⁴ instead of making applications to the MOE, as was the case with the previous Certificate of Approval process. Certificates of Approval are still required for wastewater and storm water alterations. The appropriate approvals must be in place before commencing construction.

Watermain, in which ownership will eventually be transferred to the Town, must be designed, constructed and commissioned in accordance with the conditions of the Town's MDWL and DWWP. This includes watermain located on municipal right-of-ways, blocks or easements, including subdivision developments. Conditions of the MDWL and DWWP also apply to the design consultants and contractors hired by developers/owners to complete these works, as described below.

On private property similar requirements exist for design, construction and commissioning. Design/engineering consultants must take this into consideration when designing these works, as explained below.

Watermain and servicing 50mm (2") diameter or larger, regardless if constructed on private or public property, are required to be commissioned in accordance with the Towns' Engineering Design Criteria prior to being connected to the municipal drinking water system. Further details concerning commissioning requirements are explained below.

How does this apply to design/engineering consultants?

Municipal watermain and equivalent systems on private property must be designed and constructed in accordance with Town requirements.

Generally this means:

- Designed and stamped by a Professional Engineer
- Designed only to transmit water and not treat water
- Designed in accordance MOE's *"Watermain Design Criteria for Future Alterations Authorized Under a Drinking Water Works Permit - June 2012"*

⁴ Providing specific conditions of the DWWP are met.

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- Designed so that it is consistent with or addresses the design objectives contained within the MOE's *"Design Guidelines for Drinking Water Systems - 2008"*
- Designed in accordance with Town of BWG requirements and appropriate industry standards, Ontario Provincial Standards (OPS), AWWA, ANSI and NSF standards
- On private property, the requirements of the Ontario Building Code (OBC) may also apply⁵

The Town has authority to approve most municipal watermain projects "in-house" through standard forms issued by the MOE (Form 1, Form 2, and Form 3). The Town's Engineering Design Criteria describes the methodology for determining what type of approval is required based on the particulars of the project. The forms are used to record these "in-house" approvals.

Where works cannot be approved by the Town, a formal application with pertinent supporting information (e.g. design drawings, studies, etc.) needs to be submitted to the MOE in order to obtain their approval.

Exempt from Approval Requirements

Certain works are exempt from the approval requirements of the SDWA. Detailed information about exemptions and exemption criteria can be found in O.Reg.170/03. The SDWA does not require you to use specific forms such as Form 1, Form 2 or Form 3.

Generally, exemptions include:

- Establishing or replacing a water service
- Establishing, altering or changing a watermain appurtenance
- Relining of an existing municipal watermain
- Replacing an existing municipal watermain with a new watermain that has similar dimensions and performance criteria and that is in the same or approximately the same location

How do the rules apply to contractors?

As per Section 12 (1) of the SDWA, only persons holding a valid operator's certificate can operate a municipal drinking water system.

The following activities⁶ are considered "operating functions":

- Open or close valves
- Isolate watermain and reconnect isolated watermain
- Control flow or pressure of drinking water in drinking water subsystems
- Flush hydrants
- Monitor gauges, meters and control valves related to distribution of drinking water
- Disinfect or treat water using chemicals
- Conduct water tests for the 24 operational parameters listed under O.Reg.248/03 (e.g. testing for chlorine residual, turbidity, alkalinity, pH, etc.)
- Perform wet-taps

A person or contractor that is not certified as a drinking water operator can perform functions normally required to be done by a certified operator provided they are being directly supervised by a certified operator, meaning the certified operator is physically present and monitoring the work being performed. All operational work is the responsibility of the certified operator. Any person with a valid

⁵ In the case of conflict in these standards, the higher design standard may apply as per the discretion of the Town.

⁶ This is not a complete list. Refer to the Ministry of the Environment's *"Certification Guide for Operators and Water Quality Analysts of Drinking Water Systems - August 2009"* for further information.

operator's certificate, not directly employed by the Town of BWG, must receive approval from the Town before carrying out any of the "operating functions" noted above.

What are the requirements for contractors constructing watermain?

As per the Town's Engineering Design Criteria, municipal watermain or equivalent systems need to be constructed in accordance with Town of BWG requirements and applicable industry standards.

What are the requirements for contractors in commissioning watermain?

The Town's Engineering Design Criteria Section D- Watermains and Appurtenances provides guidelines for commissioning watermain and servicing in accordance with AWWA C651 standard to meet a specific condition⁷ of the Town's DWWP. Essentially any watermain or service lines (public or private) which are 50mm (2") diameter or larger must be commissioned in accordance with Town standards. Waterlines smaller than 50mm (2") or shorter than 10m (33ft) must be constructed using proper sanitary construction and installation practices per **ANSI/AWWA C651**.

The Engineering Design Criteria also provides guidelines for properly neutralizing chlorine before discharging any water to the environment, in order to meet the specific conditions^{8, 9} of the Town's MDWL.

It is important to note that when new watermain constructed on municipal right-of-ways, blocks or easements (including subdivisions) are connected to the existing DWS the new watermain becomes a part of the "active" water system. This means that upon connection, the new watermain (including services) can only be operated by a person holding a valid operator's certificate (refer to contractor's rules noted above). This does not apply to servicing on private property as it would be considered plumbing.

Conclusion

A copy of the various documents referenced in this report is available for public viewing at the Engineering Services office. Additional information can be found on the Ministry of the Environment's Drinking Water website www.ontario.ca/ONT/portal61/drinkingwater.

Together with your cooperation, the Town of BWG will continue to ensure consumers clean, safe drinking water at all times and continue to meet or exceed applicable drinking water legislation, regulations and standards in a culture of continuous improvement.

⁷ Section 2.3 of the DWWP #116-201 states:

"All parts of the drinking water system in contact with drinking water which are:

- Added, modified, replaced, extended; or

- Taken out of service for inspection, repair or other activities that may lead to contamination, shall be disinfected before being put into service in accordance with the provisions of the AWWA C651 – Standard for Disinfecting Watermains; AWWA C652 – Standard for Disinfection of Water-Storage Facilities; AWWA C653 – Standard for Disinfection of Water Treatment Plants; or an equivalent procedure.

⁸ Section 10.1 of the MDWL #116-101 states: *"Nothing in this licence or the drinking water works permit shall be read as to permit:*

- The discharge of a contaminant into the natural environment that causes or is likely to cause an adverse effect; or

- The discharge of any material of any kind into or in any waters or on any shore or bank thereof or into or in any place that may impair the quality of the water of any waters."

⁹ Section 10.2 of the MDWL #116-101 states: *"All reasonable steps shall be taken to minimize and ameliorate any adverse effect on the natural environment or impairment of the quality of water of any waters resulting from the operation of the drinking water system including such accelerated or additional monitoring as may be necessary to determine the nature and extent of the effect or impairment."*