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| Title: | Grimsby WDS Legislative Overview | | |
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Purpose

What is the purpose of this document?

This document has been developed to assist the Town of Grimsby in communicating legislative requirements for Grimsby Water Distribution System (WDS) to various parties involved in the ownership, operation, maintenance or alteration of the water system. These parties include:

- Town of Grimsby Council;
- Town of Grimsby Public Works Department water system operating authority staff;
- Developers/owners constructing watermain/servicing which will be connected to the Grimsby WDS;
- 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 Grimsby WDS.

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

Legislative Overview

What are the rules and regulations that govern the Grimsby WDS?

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; components include:

- Defining standards for drinking water quality;
- Accreditation and licensing of drinking water testing laboratories;
- Accreditation and licensing of water system operating authorities;
- Training and certification of water system operators;
- Defining the requirements for operating authorities to sample, test and monitoring the quality of drinking water within the water systems;
- 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 water systems,
- Defining inspection and enforcement requirements for the Ministry of Environment and defining penalties for offences.

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

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

¹ Section 5.1 of MDWL # 065-101 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 # 065-201 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."



What is a Municipal Drinking Water License?

Under the SDWA, all municipalities that own/operate a drinking water system must obtain a Municipal Drinking Water License (MDWL) to operate their system. The Town of Grimsby's MDWL (#065-101) was first issued to the Town on November 23, 2009. The MDWL is comprised of the following components:

- **Drinking Water Works Permit**
A Drinking Water Works Permit (DWWP) replaces the Ministry of Environment's (MOE) Certificate of Approval process. The DWWP allows municipalities to complete and/or approve selected alterations to the drinking water system without requiring specific approval from the Ministry. The Town of Grimsby's DWWP (#065-201) was first issued to the Town on November 23, 2009.
- **Permit to Take Water**
A Permit to Take Water (PTW) is essentially approval obtained from the MOE to obtain water from natural sources (lakes, rivers, etc.). The Region of Niagara is responsible for treatment of drinking water and is therefore subject to the PTW. The Town of Grimsby is exempt from this requirement.
- **Operational Plan**
Municipalities are required to implement a Quality Management System (QMS) that conforms to the requirements of the Ministry of Environment's Drinking Water Quality Management Standard (DWQMS). The Operational Plan is essentially the Town's documented QMS.
- **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 province. The Town of Grimsby received accreditation as an Accredited Operating Authority on October 13, 2011.
- **Financial Plan**
The Financial Plan is a long-term strategic plan developed to ensure the financial sustainability of the municipal drinking water systems. The Town of Grimsby's Financial Plan was prepared in accordance with the requirements of Ontario Regulation 453/07 and was first submitted to the Ministry of Municipal Affairs and Housing on June 18, 2010.

A copy of the Town's MDWL, DWWP, Operational Plan and Financial Plan are available for public viewing at the office of the Public Works Department located at 160 Livingston Avenue.

What is a Quality Management System?

A QMS is a documented set of policies and procedures defining how an organization manages and directs the processes it completes (or its business) with regards to a product or service they provide. Once implemented, a QMS enables an organization to identify, measure, control and continually improve upon their processes, leading to improved performance in the management of its organization.

The Town of Grimsby implemented a QMS to assist the Town in managing the processes involved in the operation of the Grimsby WDS. The Town's QMS is documented in the **DWQMS Operational Plan (PW-ES-WD-MAN-001-001)** which has been developed to meet the Ministry of Environment's Drinking Water Quality Management Standard (DWQMS).



Application of the Legislation

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” (Public Works 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 their water system in accordance with the SDWA and associated regulations.
- Ensure their water system is kept in good repair.
- Ensure their water system is appropriately staffed and supervised by qualified persons.
- Comply with the sampling, testing, monitoring and notification requirements for their system.
- Meet reporting requirements for their 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.”*

In a practical sense 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;
- Council must review these changes in performance, including Top Management’s recommendations and act diligently in providing the appropriate resources where requested;
- Council and Top Management must ensure competency of staff and management through training & development programs;

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

- A commitment from Council and Top Management to the Operational Plan and the QMS;
- Defined roles and responsibilities of various levels of the organization;
- Methods for ensuring competencies of staff, including certification, training, etc.;
- Defined procedures for sampling, testing and monitoring drinking water quality;
- Methodology used for reviewing the adequacy of the water systems 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.

³ Under the Town’s QMS, the Director of Public Works is defined as Top Management for the Operating Authority.



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 Certificates of Approval process. Certificates of Approvals 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 explained 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 water servicing pipe 100mm (4”) diameter or larger and longer than 6m (20ft), regardless if constructed on private or public property, are required to be commissioned in accordance with the Town’s Standard Operating Guideline (SOG) called **Commissioning New Water Pipe - Grimsby WDS (PW-ES-WD-SOG-012-013)** prior to being connected to the municipal 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 - March 2009”*;
- 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 Grimsby requirements and appropriate industry standards, including the Niagara Peninsula Standard Contract Document (NPSCD), Ontario Provincial Standards (OPS), AWWA, ANSI and NSF standards.
- On private property, the requirements of the OBC may also apply⁵.

The Town has authority to approve most municipal watermain projects and all private property systems “in-house” without applying to the MOE for their approval. The Town’s SOG **Drinking Water Works Permit Requirements (PW-ES-WD-SOG-001-001)** describes the methodology for determining what type of approval is required based on the particulars of the project. A standard form (“Form 1”, “Form 2” or “Form 3”) is used to record for recording these “in-house” approvals.

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

⁴ Providing specific conditions of the DWWP are met.

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



Certain works are exempt from the requirement to complete a Form 1, 2 or 3 and make an application to the MOE. These works are exempt if they constitute maintenance or repair of the water system, or the works relate to:

- Establishing or replacing a water service;
- Establishing, altering or changing a watermain appurtenance⁶;
- Relining of an existing municipal watermain⁷;
- 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 activities⁸ are considered "operating functions":

- Open or close valves and gates;
- 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.

Therefore persons without a valid operator's certificate (i.e. contractor, contacted personnel, etc.) are not permitted to carry out any of the "operating functions" noted above. Any person with a valid operator's certificate, not directly employed by the Corporation of the Town of Grimsby, must receive approval from the Town before carrying out any of the "operating functions" noted above.

What are the requirements for contractors in constructing watermain?

As per the Town's QMS, municipal watermain or equivalent systems need to be constructed in accordance with Town of Grimsby requirements and applicable industry standards. These requirements are defined in the design documents prepared by design/engineering consultant and approved by the Town. Refer to design/engineering consultant requirements above for more information.

⁶ Providing it does not disrupt the operation of the drinking water system.

⁷ Providing it does not disrupt the operation of the drinking water system.

⁸ This is not a complete list. Refer to the Ministry of Environment's "Certification Guide for Operators and Water Quality Analysts of Drinking Water Systems - August 2009" for further information.



What are the requirements for contractors in commissioning new water pipe?

The Standard Operating Guideline (SOG) called **Commissioning New Water Pipe - Grimsby WDS (PW-ES-WD-SOG-012-013)** provides guidelines for commissioning new water pipe in accordance with AWWA C651 and the MOE Watermain Disinfection Procedure standard in order to meet the requirements⁹ of the Town's DWWP. Essentially any watermain or service lines (public or private) which are 100mm (4") diameter or larger and longer than 6m (20ft) must be commissioned in accordance with this SOG. Waterlines smaller than 100mm (4") or shorter than 6m (20ft) must be completed while maintaining sanitary conditions during the installation and shall be cleaned and flushed prior to being placed into service as outlined in the Town's SOG called **Small Diameter Water Service Maintenance and Tapping - Grimsby WDS (PW-ES-WD-SOG-011-006)**.

This SOG **Commissioning New Water Pipe - Grimsby WDS (PW-ES-WD-SOG-012-013)** also provides guidelines for properly neutralizing chlorine before discharging any water to the environment, in order to meet the specific conditions^{10,11} 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 water distribution system, the new watermain becomes a part of the "active" water system. Essentially 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.

Conclusions

A copy of the various documents referenced in this report, are available for public viewing at the office of the Public Works Department, located at 160 Livingston Avenue. Additional information can be found on the Ministry of Environment's Drinking Water website <http://www.ontario.ca/environment-and-energy/drinking-water>.

Together with your cooperation, the Town of Grimsby will continue to provide water consumers with safe, clean drinking water and continue to uphold all legislative & regulatory requirements applicable to the Grimsby WDS.

⁹ Section 2.3 of the DWWP #065-201 states:

All parts of the drinking water system in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

- a) *The ministry's Watermain Disinfection Procedure, dated November 2015;*
- b) *Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;*
- c) *AWWA C652 – Standard for Disinfection of Water-Storage Facilities;*
- d) *AWWA C653 – Standard for Disinfection of Water Treatment Plants; and*
- e) *AWWA C654 – Standard for Disinfection of Wells.*

¹⁰ Section 10.1 of the MDWL #065-101 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."*

¹¹ Section 10.2 of the MDWL #065-101 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."