
Subject: Drinking Water Compliance and Water Wastewater Quality Management System Endorsement

Report to: Public Works Committee

Report date: Tuesday, March 19, 2019

Recommendations

1. That Report PW 19-2019, detailing information regarding Niagara Region's drinking water compliance and quality management programs, **BE RECEIVED**;
2. That information **BE RECEIVED** for Standard of Care requirements and training opportunities for members of Regional and Area Municipal councils;
3. That the Water Quality Management System Operational Plan and the Wastewater Quality Management System Operational Plan **BE APPROVED** and **ENDORSED**; and
4. That the Regional Chair and Regional Clerk **BE AUTHORIZED** to sign the Operational Plans on behalf of Council as evidence of Council's endorsement.

Key Facts

- The purpose of this report is to provide Council with details of programs that support the Water and Wastewater Services Division's continued compliance with provisions of the Safe Drinking Water Act, 2002 and the Clean Water Act, 2006. Through this report, the Water and Wastewater Services Division also seeks endorsement of the Water Quality Management System (QMS) Operational Plan and the Wastewater Quality Management System Operational Plan.
- Niagara Region owns and operates five (5) drinking water systems and has held Municipal Drinking Water Licences for each of these systems since 2009.
- Continued accreditation to the Drinking Water Quality Management Standard is required as a condition of issuance of the Municipal Drinking Water Licence.
- Under the Water Quality Management System, Council is identified as the "Owners" of the region's drinking water systems; selected staff of the Water and Wastewater Division are identified as members of the "Operating Authority".
- Standard of Care Provisions under the Safe Drinking Water Act, 2002 are applicable to Council and may result in an offense under the Act if provisions are not met.
- Standard of Care training is available to members of Regional and Area Municipality Councils on March 19, 2019 at the Niagara Region Council Chambers; in addition, the Water and Wastewater Services Division provides Council with a variety of

reports at specified intervals so that Council can continually assess Niagara's drinking water systems and ensure that Standard of Care Provisions are met.

Financial Considerations

A total of approximately \$3,825 (excluding HST) in quality management system program costs were incurred in 2018. Costs included consulting fees for an off-site external surveillance audit of the Water QMS. A similar allocation is anticipated for 2019 and is included in the approved 2019 operating budget for Water Operations.

Analysis

The purpose of this report is to provide Council with details of programs that support the Water and Wastewater Services Division's continued compliance with provisions of the *Safe Drinking Water Act, 2002* and the *Clean Water Act, 2006*. Within this report, the Water Quality Management System Operational Plan and Wastewater Quality Management System Operational Plan are also presented for Council endorsement. Endorsement of these plans is a legislative requirement.

Municipal Drinking Water Licencing Program

The Municipal Drinking Water Licencing Program (MDWLP) was developed in response to several recommendations of the Part II Report of the Walkerton Inquiry. The MDWLP requires every Operating Authority of a municipal residential drinking water system to hold a licence to operate the subject system. Without valid licences, Niagara Region is unable to operate its five (5) drinking water systems. A licence includes conditions of operation for the subject system; these may include details of additional sampling and maintenance requirements, relief from regulatory requirements, and administrative procedures related to the MDWLP.

Niagara Region will be renewing municipal drinking water licences in 2019. Under the MDWLP, there are five (5) requirements to obtain a drinking water licence:

- Financial plan;
- Drinking Water Works Permit;
- Permit to Take Water;
- Documented quality management system (QMS) operational plan; and
- Accreditation of the Operating Authority's QMS.

These requirements are discussed in more detail below.

Financial Plan

Ontario Regulation 453/07 prescribes requirements for the development of a Water and Wastewater Financial Plan (Financial Plan). Under this regulation, municipalities must prepare a Financial Plan that demonstrates financial sustainability of their drinking water systems for the duration of the term of the municipal drinking water licence.

The 2019-2028 Financial Plan was prepared based on the proposed 2019 water and wastewater operating budget and the proposed 2019-2028 water and wastewater capital budget and forecast. It was approved by Council in January 2019 under PW 4-2019. With this approval, Niagara Region can finalize and submit the applications for municipal drinking water licence renewal. The next Financial Plan submission to Council is anticipated in 2024.

Drinking Water Works Permit

Niagara Region holds drinking water works permits for each of its five (5) drinking water systems. A permit contains an overview of the major infrastructure that is installed and in use within the subject system. Permits also specify the types of infrastructure additions, modifications, replacements, or extensions that a municipality is pre-authorized to complete, versus those that require approval from the Ministry of Environment, Conservation and Parks (MECP).

Amendments

To make any additions, modifications, replacements or extensions to a drinking water system, changes must be either approved through a Schedule C amendment to the associated drinking water works permit or pre-authorized through a condition in the Drinking Water Works Permit.

In 2017, the signing authority for specific provincial and federal environmental compliance instruments, including Drinking Water Works Permit amendments and Permit to Take Water renewal applications, was delegated to the Water Compliance Specialist and the Water and Wastewater Compliance Technologist under PW 56-2017. Quarterly memoranda summarizing sign-off activity will continue to be provided to Council as part of weekly correspondence.

Source Water Protection

As mandated by the *Clean Water Act, 2006*, the drinking water sources for Niagara's drinking water systems are protected under the Niagara Peninsula Source Protection Plan (the SPP). The SPP is a locally-driven, collaborative, prevention-based plan that is based on science. In the SPP, drinking water sources are assessed, vulnerabilities are determined, and identified drinking water threats are managed via approved policies.

On July 1, 2018, Ontario Regulation 205/18 under the *Safe Drinking Water Act, 2002*, came into effect. This regulation requires municipalities to assess vulnerable areas and threats to source water before placing a new or altered drinking water system intake into service. Niagara Region is anticipating infrastructure work to four (4) of the Region's six (6) drinking water intakes within the next five (5) years. Once available, formal approval of the updated SPP will be requested by Council as required by the *Clean Water Act, 2006*.

Additional source water protection resources can be found in PWC-C 3-2018, on the Niagara Peninsula Source Water Protection website (<http://www.sourceprotection-niagara.ca>), and in Appendix I to this report (Drinking Water Source Protection Primer: For Municipal Councillors).

Water Quality Management System

The MDWLP requires those organizations who operate municipal residential drinking water systems to develop, implement, and maintain a QMS that is accredited to the requirements of Ontario's Drinking Water Quality Management Standard (the Standard). The QMS must be documented in an Operational Plan and accredited through an audit process by a third-party accreditation body that is approved by the MECP. Niagara Region has maintained accreditation to the Standard since 2009.

Niagara Region's Water QMS Operational Plan describes various operational, maintenance, testing, monitoring, administration, and oversight processes that have been implemented in support of the Water QMS. Elements of the Standard that may be of particular interest or importance to Council include risk assessment; roles, responsibilities, and authorities; infrastructure review, maintenance, rehabilitation and renewal; internal auditing; and Top Management Review.

The Water-Wastewater Quality Management Specialist provides Council with an annual Water QMS Update that summarizes the status of the Water QMS, including updates relating to the above-noted elements of interest, key QMS activities, and relevant milestones. The Water-Wastewater Quality Management Specialist also provides Council with an annual Water QMS Audit Update to summarize the results of internal and external Water QMS audits.

Wastewater Quality Management System

The Water-Wastewater Services Division has developed and implemented a quality management system for wastewater operations. While a Wastewater Quality Management System is not presently required by law, the division has implemented the Wastewater QMS as a best management practice. The division has committed to the Wastewater QMS as a tool for internal control and continual improvement. The Water-

Wastewater Quality Management Specialist provides Council with an annual Wastewater QMS Update that summarizes the status of the Wastewater QMS and provides details of key activities and milestones.

QMS Roles and Responsibilities

Several key roles and responsibilities have been defined in the Water and Wastewater QMS Operational Plans. These roles include but are not limited to the following:

System Owner

Council represents Niagara Region as the Drinking Water and Wastewater Systems Owner. Owner responsibilities include:

- Owning and endorsing the respective Operational Plans;
- Ensuring the drinking water system is operated by an accredited operating authority¹;
- Monitoring the QMS and providing resources in support of the QMS; and
- Ensuring compliance with the MDWL and its components².

Operating Authority

Niagara Region (specifically, selected staff of the Water-Wastewater Services Division) acts as the Drinking Water System Operating Authority. The responsibilities of the Operating Authority include:

- Maintaining the QMS;
- Maintaining accreditation of the QMS;
- Communicating with the Owner about the QMS and resource requirements; and
- Ensuring compliance with the MDWL and its components³.

Top Management

Top Management of the Water QMS includes the Commissioner of Public Works; the Director, Water and Wastewater Services; the Associate Director, Water Operations, Maintenance, and Staff Development; the Associate Director, Water-Wastewater Engineering; and the Associate Director, Water-Wastewater Integrated Systems.

Top Management of the Wastewater QMS includes the Commissioner of Public Works; the Director, Water and Wastewater Services; the Associate Director, Wastewater Operations, Maintenance, and Laboratory Services; the Associate Director, Water-

¹ Accreditation is not applicable for wastewater, since the Wastewater QMS is not legislatively required.

² The licensing program applies to water only.

³ Same as previous.

Wastewater Engineering; and the Associate Director, Water-Wastewater Integrated Systems.

Top Management's responsibilities include:

- Ensuring that a QMS is in place that meets the requirements of the Standard;
- Participating in annual QMS Management Reviews;
- Ensuring that the Operating Authority is aware of legislative and regulatory requirements;
- Communicating the QMS according to documented procedures; and
- Providing resources needed to maintain and improve the QMS.

QMS Representative

The Water-Wastewater Quality Management Specialist has been appointed as the QMS Representative by Top Management. The Water Compliance Specialist has been identified as the back-up Water QMS Representative⁴, as per PW 95-2014.

Responsibilities of the QMS Representative include:

- Establish and maintain procedures and documents required by the QMS;
- Report to Top Management and the Owner on the performance of the QMS and areas of required improvement;
- Ensure that current QMS documentation is being used by Operating Authority staff at all times;
- Ensure that Operating Authority staff are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the drinking water and/or wastewater systems; and
- Promote QMS awareness throughout the Operating Authority.

Endorsement of Water and Wastewater Quality Management System Operational Plans

Accompanying this report, Public Works Committee members have received copies of the following documents for approval and endorsement:

- Niagara Region's Water Quality Management System Operational Plan (included as Appendix II);
- Niagara Region's Wastewater Quality Management System Operational Plan (included as Appendix III).

While the previous endorsement of the Operational Plan is still valid as per PWA 109-2008, the Operating Authority is recommending that the 2019-2022 term of Council (as

⁴ A back-up Wastewater QMS Representative has not been formally identified and approved by Council.

Drinking Water and Wastewater System Owners) approve and endorse the Operational Plans as presented for Niagara Region's drinking water and wastewater systems.

In addition to Water and Wastewater QMS Update Reports that are provided to Council on an annual basis, the Water-Wastewater Quality Management Specialist will report to Council to recommend re-endorsement of an Operational Plan if substantial changes are made to its content.

Operational Performance

In addition to MDWLP requirements, summary and annual reporting are required under the *Safe Drinking Water Act, 2002*; one summary and one annual report are to be prepared per drinking water system. Summary reports must be provided to Council on an annual basis. Both summary and annual reports are posted on the external website (<https://www.niagararegion.ca/living/water/Water-Quality-Reports/default.aspx>) for public access.

The annual report provides a description of treatment processes and the quality of drinking water; including adverse water quality incidents and sample results.

The summary report contains:

- A description of regulatory non-compliances with pertinent legal instruments
- Water flow information that can be used to assess the capability of the system to meet both existing and planned uses.

The summary report has been provided to Council as PWC-C 6-2019.

Standard of Care

Standard of Care provisions under the *Safe Drinking Water Act, 2002*, came into force on January 1, 2013. These provisions require the System Owner, Top Management, and every person who, on behalf of the municipality, oversees the accredited Operating Authority or exercises decision-making authority, to “exercise the level of care, diligence and skill that a reasonably prudent person would be expected to exercise in a similar situation” and “act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking-water system.” Failure to do so could result in an offense under the *Safe Drinking Water Act, 2002*. A System Owner may rely on a report of an engineer, lawyer, accountant, or other person whose professional qualifications lend credibility to the report.

Additional Standard of Care resources are available on the MECP website (<https://www.ontario.ca/page/taking-care-your-drinking-water-guide-members-municipal-councils>) and during an in-class training opportunity that will be available to members of Regional and Area Municipality Councils on March 19, 2019 from 6:30 p.m. to 9:30 p.m. at the Niagara Region Council Chambers (see Appendix IV).

Ongoing Communication with Council

In support of the *Safe Drinking Water Act, 2002*, the *Clean Water Act, 2006*, and to assist Council with meeting the due diligence requirements of the Standard of Care provisions, regular correspondence can be expected throughout the 2018-2022 Council term in regard to the MDWLP, source water protection, QMS status, and operational performance.

Minimum correspondence frequencies have been summarized below in Table 1.

Table 1: Minimum Correspondence

Topic	Frequency
Financial Plan	Every 5 years
Operational Performance – Summary Report	Annual
Water QMS Update	Annual
Water QMS Audit Update	Annual
Wastewater QMS Update	Annual
Delegated Authority	Quarterly
Source Water Protection Plan Approval	As required
Request for Operational Plan Re-Endorsement	As required

Alternatives Reviewed

No alternatives were reviewed as Niagara Region is mandated to comply with the provisions of the *Safe Drinking Water Act, 2002* and *Clean Water Act, 2006*.

Relationship to Council Strategic Priorities

Niagara Region's Water Quality Management Systems, and associated audit processes, relate directly to Council's strategic priority of "strengthening internal controls, key information sharing processes, and financial planning". The Water Quality Management System is a key internal control for the Water and Wastewater Services Division. It increases accountability by defining clear roles and responsibilities for divisional staff, and it increases transparency through documented standard operating procedures and associated record-keeping practices.

The Water Quality Management System also relates to Council's strategic priority of "enhancing the reputation of Niagara Region among residents, businesses, media and other stakeholders". The continued accreditation of the Region's Water Quality Management System provides residents with confidence that their drinking water is safe and that the associated systems are managed with competence and diligence.

Other Pertinent Reports

- PWA 109-2008, DWQMS Update (October 29, 2008).
- PW 95-2014, Identification of Back-Up QMS Representative
- PW 56-2017, Delegated Signing Authority for Environmental Approvals and Reporting
- PWC-C 3-2018, *Clean Water Act, 2006*, Overview of Responsibilities
- PW 4-2019, Water and Wastewater Financial Plan for O.Reg. 453/07
- PWC-C 6-2019, Niagara Water Treatment Plant 2018 Summary Reports

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Appendices

Appendix 1	Drinking Water Source Protection Primer: For Municipal Councillors
Appendix 2	Water Quality Management System Operational Plan
Appendix 3	Wastewater Quality Management System Operational Plan
Appendix 4	Invitation: Owner Standard of Care Training

This report was reviewed by Mike Janas, C.E.T., Associate Director, Water Operations, Maintenance, and Staff Development, and Joe Tonellato, P. Eng., Director, Water-Wastewater Services.