
For Information

REPORT TITLE: Water and Wastewater Compliance Programs Update

FROM: Kealy Dedman, Commissioner of Public Works

OBJECTIVE

To provide an update on the Region of Peel's management of drinking water and wastewater systems in 2020 and to support Regional Council's Statutory Standard of Care responsibilities under Section 19 of the *Safe Drinking Water Act*.

REPORT HIGHLIGHTS

- The Region's Drinking Water Quality Management System (DWQMS) conforms to the provincial standard, promotes protection of public health through a culture of continuous improvement.
 - Drawing on the benefits of DWQMS, the Region voluntarily implemented a Wastewater Integrated Management System (WWIMS) in conformance to international standards to improve wastewater system performance.
 - In response to COVID-19, staff quickly and effectively developed and implemented work plans to keep employees and the community safe and to prevent service interruption due to a potential shortage of staff and essential chemicals and supplies.
 - The Region maintained compliance with water and wastewater legislated requirements in 2020 while effectively responding to COVID-19.
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DISCUSSION

1. Background

a) Management of Drinking Water Systems

The Region of Peel (Region) is responsible for supplying safe drinking water to its residents and business owners. The Region achieves this by complying with legislative requirements, a strong commitment to continuous improvement, and maintaining a Drinking Water Quality Management System (DWQMS), which conforms to the Ontario Drinking Water Quality Management Standard (the Standard). Similarly, the South Peel Water and Wastewater Agreement between the Region and Ontario Clean Water Agency (OCWA) also requires OCWA to maintain a DWQMS for the drinking water facilities they operate on the Region's behalf.

The Region's and OCWA's DWQMS are regularly reviewed and audited by staff and third-party auditors to validate DWQMS effectiveness and to allow both operating authorities to maintain their accreditation to the Standard. The results of the reviews and

Water and Wastewater Compliance Programs Update

audits are reported to Council annually to support Council, as the Owner of the drinking water systems, to meet Statutory Standard of Care responsibilities under Section 19 of the *Safe Drinking Water Act*.

b) Management of Wastewater Systems

The Region maintains compliance with wastewater legislation, enforced by the Ministry of the Environment, Conservation and Parks (Ministry), to protect the natural environment and sources of drinking water. Currently, there is no mandatory management standard in Ontario for municipal wastewater systems. However, proposed changes to the Ministry's environmental compliance approvals and modernization of environmental compliance practices signal changes to the wastewater regulatory structure which are expected to improve the overall accountability for environmental protection.

c) Multi-barrier Approach

The Region continues to take a multi-barrier approach to providing safe drinking water which includes water quality monitoring, employing advanced treatment process technology, contributing to the latest research, and implementing best management practices. This integrated approach, in combination with meeting regulatory requirements, prevents or reduces risks to public health and our natural environment.

2. Findings

a) 2020 Drinking Water System Performance

The Region's drinking water system operational performance for 2020 was presented in a report to Council on March 25, 2021, and included information on drinking water quality, declaration of compliance and Ministry annual drinking water system inspection rating. These achievements were summarized in 2020 water quality reports and made available to the public through the Region's website at peelregion.ca/drinking-water/quality-reports by legislation.

An annual review of DWQMS in 2020 confirmed that the Region met the requirements of the Standard and its water systems maintain the mandatory provincial accreditation. Staff identified and effectively managed risks to public health, ensured emergency preparedness, and completed an evaluation of water system performance for continual improvement, as required. Operational events or incidents of deviation from established practices were assessed for implementation of appropriate control measures to prevent reoccurrence. Outcomes of the annual DWQMS review are summarized in Appendix I of this report.

b) 2020 Wastewater System performance

Compliance requirements of the Region's wastewater systems were also successfully fulfilled in 2020. A summary of the wastewater monitoring data and maintenance programs, including any deviation from the prescribed conditions of environmental approval requirements was prepared for 2020, and made available through the Regional website at peelregion.ca/wastewater/reports. This report is not required by legislation to be made available to the public; however, staff have published the report to keep

Water and Wastewater Compliance Programs Update

residents and business owners informed and to increase public awareness and confidence in the Region's wastewater services.

Recognizing the tremendous value of DWQMS to effectively manage drinking water systems, staff decided to implement a quality management-based framework for the Region's wastewater systems. In October 2020, staff informed Council of the work underway to develop and implement the Wastewater Integrated Management System (WWIMS) in conformance to international standards, as summarized in the Table below.

	Management Standard	Source
Water DWQMS	Drinking Water Quality Management Standard	Made-in-Ontario Standard
Wastewater WWIMS	ISO 14001:2015 Environmental Management	International Organization for Standardization (ISO)
	ISO 9001:2015 Quality Management	

To date, staff have completed the implementation of the WWIMS, and formal certification is planned in 2022. WWIMS promotes the use of best practices, performance indicators and controls, and a measurable continuous improvement process that is like the Ontario Drinking Water Quality Standard. WWIMS provides a comprehensive and consistent framework for minimizing operational impacts on the environment and public health through risk-based assessment, improved relations with residents and business owners and compliance with applicable legislative requirements.



Water and Wastewater Compliance Programs Update

There are many common elements between DWQMS and WWIMS resulting in efficiencies in the development and implementation of WWIMS. Having quality and environmental management systems for both water and wastewater enhances overall governance and decision making, reduces duplication of common administrative processes, and ensures a formal and consistent commitment to continuous improvement.

c) COVID-19 Response

Municipal water and wastewater services are essential to protecting public health and the environment. COVID-19 required the Region to quickly re-evaluate program priorities and deal with the challenges of maintaining service delivery and regulatory compliance while implementing measures for protection of personnel, residents, and business owners. Staff quickly developed and implemented work plans to prevent service interruption in anticipation of potential shortages of staffing and essential chemicals and supplies.

To mitigate risks of COVID-19 and to maintain operations, the modifications included:

- Reassigning staff work locations to protect health and safety
- Work-from-home for office-based staff
- Decreasing occupancy at public works yards
- Separating water and wastewater operators into smaller cohorts distributed across isolated reporting locations
- Virtual staff training
- Adopting digital authorization and submission of water and wastewater certification to the Ministry, and verification of training compliance
- Implementing internal and external communication protocols on availability of supplies and service providers essential to continued operations
- Temporarily pausing programs identified with highest risk such as those involving public facing and activities where the cost and effort to implement control measures outweighed the value of continuing work

Despite all the business continuity challenges, the Region continued to supply its communities with safe drinking water and environmentally sound wastewater collection and treatment services while meeting legislative requirements.

d) Collaboration with the Ministry of the Environment, Conservation and Parks

The Ministry's expectations of municipal water and wastewater system owners and operating authorities remained high, with prioritization on compliance with the treatment process and quality standards. Following the declaration of the provincial emergency, the Ministry provided flexibility through issuance of an emergency interim regulation and provision of regulatory relief upon request. Staff worked effectively with the Ministry to assess regulatory needs that were impacted by the pandemic.

Collaboration with the Ministry on exemption or deferral of the Region's administrative obligations yielded temporary approvals for regulatory relief that included:

Water and Wastewater Compliance Programs Update

- Adjusting activities that otherwise require staff to enter private homes and businesses (such as the Community Lead Testing Program)
- New timelines for formal implementation of established monitoring and reporting plans
- Relief from requiring operational oversight and in-charge operator presence during water system repair and maintenance

These changes allowed the Region to focus on essential activities, keep staff and residents safe, and avoid the potential risk of staff shortage due to illness.

3. Proposed Direction

a) Modified Service Delivery Actions

The Region's water and wastewater operations staff effectively adapted to the challenges presented by the COVID-19 pandemic and identified several opportunities that have achieved business improvements and efficiencies such as several paper-based administrative processes replaced by online applications.

It is essential that staff maintain the reliable operation of critical infrastructure services and functions to ensure the health and safety of the Region's communities. Water and wastewater service delivery modifications made in response to COVID-19 public health measures will therefore be reviewed, and in collaboration with the Region's Medical Officer of Health and the Ministry, staff will determine if operational activities that involve direct interaction with the public may be resumed in 2022.

b) Water and Wastewater Management Systems Continuous Improvement

Currently, the Region's WWIMS conformance to international standards is voluntary and validated by staff through internal audits. Previously planned registration and third-party formal certification to ISO standards 14001:2015 and 9001:2015 have been delayed by COVID-19 and anticipated for early 2022.

2020 DWQMS and WWIMS management reviews have identified opportunities for improvement. These include:

- Training and Awareness: design and build self-paced/on-demand program training modules through e-learning solution for delivery of accessible, consistent, and interactive e-course, with capability of knowledge testing and progress tracking
- Collaboration: build partnerships with internal and external stakeholders for engagement in climate change control plans and environmental performance metrics
- Quality Management System Technology: implement electronic content management system to maintain reliable and accurate information, to employ automated workflows for tracking and reporting DWQMS and WWIMS requirements, and to trigger required action in support of compliance checks, audits and trending and analysis of DWQMS and WWIMS performance metrics.

Water and Wastewater Compliance Programs Update

c) Implementing Quality Management System Technology

Procurement of a quality management system software application is currently underway to address one of the improvement initiatives identified through the DWQMS and WWIMS management review. This application will achieve efficiencies by automating manual functions, streamline repetitive processes, and integrate procedural documentation controls. Staff anticipate deployment of the application by the end of 2021. Significant benefits of sustainable digitalization of management systems will provide the Region with the agility to identify issues and respond in real time with consistent communication and corrective actions, and more efficient risk management.

RISK CONSIDERATIONS

The Region's water and wastewater systems are large and complex with many operational and regulatory risks. A multi-barrier approach to providing safe drinking water continues to effectively protect public health and the environment. The DWQMS and WWIMS provide the foundational framework that integrate all the elements for effective water and wastewater system management. Maintaining and improving DWQMS and WWIMS requires technology and future resources.

CONCLUSION

The Region's water and wastewater systems performance has been maintained throughout 2020 and the effective DWQMS and WWIMS demonstrate the Region's strong commitment to protect public health and support environmental protection. The Region's water and wastewater management systems have been designed for continuous improvement with rigorous and thorough assessments that support the regulated compliance obligations and meet the water and wastewater service delivery needs of the community.

APPENDICES

Appendix I - Management Review Summary - 2020 Operational Performance, DWQMS and WWIMS

Authored By: Justyna Burkiewicz, Manager, Water and Wastewater Regulatory Compliance, and Sarah Vella, Supervisor, Water and Wastewater Program Quality Assurance