

**Subject: Drinking Water Quality Management System 2022 Management Review  
Report and Operational Plan**

**File Number: ACS2023-IWS-WF-0004**

**Report to Environment and Climate Change Committee on 19 September 2023  
and Council 27 September 2023**

**Submitted on September 8, 2023 by Marie-Geneviève (Gen) Nielsen, Director,  
Water Facilities and Treatment Services**

**and**

**Marilyn Journeaux, Director, Linear Water and Customer Services,  
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**Ward: City wide**

**Objet : Rapport de 2022 de l'examen par la direction et Plan d'exploitation,  
relatif au Système de gestion de la qualité de l'eau potable**

**Dossier : ACS2023-IWS-WF-0004**

**Rapport au Comité de l'environnement et du changement climatique,**

**le 19 septembre 2023**

**et au Conseil le 27 septembre 2023**

**Soumis le 8 septembre 2023 par Marie-Geneviève (Gen) Nielsen, Directrice,  
Services des installations d'adduction et de purification de l'eau**

**et**

**Marilyn Journeaux, Directrice, Eau linéaire et services à la clientèle  
Direction générale des services d'infrastructure et d'eau**

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**Quartier : À l'échelle de la ville**

## **REPORT RECOMMENDATION(S)**

**That the Environment and Climate Change Committee recommend that Council:**

- 1. Receive the 2022 Management Review report of the Drinking Water Quality Management System, and**
- 2. Endorse the Drinking Water Quality Management System Operational Plan**

## **RECOMMANDATION(S) DU RAPPORT**

**Que le Comité de l'environnement et du changement climatique recommande au Conseil :**

- 1. de prendre connaissance du Rapport de 2022 de l'Examen par la direction du Système de gestion de la qualité de l'eau potable, et**
- 2. d'entériner la version actuelle du Plan d'exploitation du Système de gestion de la qualité de l'eau potable**

## **EXECUTIVE SUMMARY**

Ontario's [Safe Drinking Water Act, 2002](#) mandates the City to develop a Quality Management System for the operation, maintenance, and management of the City of Ottawa's drinking water systems. This Quality Management System must conform with the province's [Drinking Water Quality Management Standard](#) (the Standard) and be documented in an Operational Plan.

This Standard requires that the current Operational Plan receive the endorsement from the Owner of the drinking water systems. For the City of Ottawa, endorsement is accomplished at the City through Council resolution, following the election of a new Council. The current Drinking Water Quality Management System Operational Plan is attached as Document 1.

A further requirement of this Standard is to conduct an annual management review on the suitability, adequacy, and effectiveness of the Quality Management System, and to ensure that the results of the review are communicated to the Owner.

The 2022 review completed on May 31, 2023, found that the Quality Management System in place has been successful and effective. The annual external audit of the Quality Management System conducted by NSF International Strategic Registrations received a score of 100 percent for the eleventh straight year. Additionally, the City's drinking water systems received scores of 100 percent from Provincial inspections and our Water Quality Health Index received scores of 100 per cent in comparing Ottawa's drinking water quality against all guidelines and regulatory limits.

During the review, it was noted that staff consistently responded effectively to all incidents impacting the drinking water systems, ensuring the continuous safety of the drinking water.

## **RÉSUMÉ**

La [Loi de 2002 sur la salubrité de l'eau potable](#) de l'Ontario exige que la Ville élabore un système de gestion de la qualité encadrant l'utilisation, l'entretien et la gestion des réseaux d'eau potable de la Ville d'Ottawa. Ce système doit respecter la [Norme de gestion de la qualité de l'eau potable](#) (la « norme ») de la province et être consigné dans un plan opérationnel.

Cette norme impose l'approbation du plan opérationnel actuel par le propriétaire des réseaux d'eau potable. Dans le cas de la Ville d'Ottawa, l'approbation est donnée par résolution du Conseil, suivant l'élection d'un nouveau Conseil. Le plan opérationnel actuel du système de gestion de la qualité de l'eau potable figure dans le document 1 ci-joint.

La norme prévoit également un examen annuel par la direction servant à vérifier que le système de gestion de la qualité reste pertinent, adéquat et efficace, examen dont les résultats doivent être transmis au propriétaire.

L'examen de 2022 qui s'est terminé le 31 mai 2023 a révélé que le système de gestion de la qualité en place est fonctionnel et efficace. La vérification externe annuelle du système, effectuée par NSF International Strategic Registrations, a attribué à ce dernier une note de 100 % pour la onzième année d'affilée. De plus, les réseaux d'eau potable de la Ville ont également reçu la note de 100 % lors des inspections provinciales. Il en va de même pour la cote de salubrité de l'eau, où des notes de 100 % ont été attribuées à la qualité de l'eau potable d'Ottawa en fonction de toutes les lignes directrices et limites réglementaires.

Durant l'examen, on a noté que le personnel avait réagi de façon constante et efficace à tous les incidents liés aux réseaux d'eau potable, afin d'assurer le maintien de la salubrité de l'eau potable.

## **BACKGROUND**

In 2002, Justice Dennis O'Connor published [Part Two of the Report of the Walkerton Inquiry](#), which recommended the adoption of a quality management approach for municipal drinking water systems. The report also recommended that a quality management standard, specifically designed for drinking water systems, be developed and implemented in Ontario; leading to the creation of the [Drinking Water Quality Management Standard](#). The requirement to implement this Standard is now mandated through the [Safe Drinking Water Act, 2002](#).

As the Owner of the municipal drinking water systems, Council has a number of duties and responsibilities under the [Safe Drinking Water Act, 2002](#), described in sections 11, 13, 16 and 17 of the Act. The duties of the Owner related to the Standard of Care are described under Section 19 and came into force on December 31, 2012. To ensure that Members of Council were made aware of their duties and responsibilities under the Act, staff organized an orientation session for newly elected members on November 8, 2022.

In his 2002 report, Justice O'Connor further commented that municipalities that had an accredited Operating Authority<sup>1</sup> would be making a significant step in meeting the Owner's due diligence and responsibilities under the Act, including the Standard of Care. One of the primary tools that the Owner has in place to satisfy the Standard of Care under the Act is to have Municipal Drinking Water Licences for all its drinking water systems.

The City of Ottawa maintains valid licences for all its municipal drinking water systems listed below:

- Central System (Britannia and Lemieux Island Water purification plants and central water distribution system)
- Carp Well System
- Kings Park Well System
- Munster Hamlet Well System

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<sup>1</sup> As per the Standard, Operating Authority means, "...the person or entity that is given responsibility by the Owner for the operation, management, maintenance or alteration of the Subject System". For the City of Ottawa, this would be management and staff within Infrastructure and Water Services Department with duties related to the drinking water system.

- Richmond West Well System
- Shadow Ridge Well System (owned by a private developer, operated, and maintained by the City of Ottawa)
- Vars Well System

The requirements of the licensing program include:

- A permit to take water
- A drinking water works permit
- An operational plan
- A financial plan
- An accredited operating authority

To meet the requirements of the licensing program, the City of Ottawa received the first phase of the Operating Authority's accreditation effective April 29, 2009, with full scope accreditation on October 3, 2011. Accreditation is the verification by a third party that an Operating Authority has a Quality Management System in place that meets the requirements of the Standard. The Operating Authority is subject to a triennial re-accreditation process, with the most recent re-accreditation occurring in 2020. When it is not a re-accreditation year, the City's drinking water Quality Management System undergoes an external surveillance audit on an annual basis.

The Standard requires the Operating Authority to document the Quality Management System in an Operational Plan and to conduct an annual management review of the Quality Management System. The results of this review must be communicated to the Owner by Top Management. Top Management is a term defined in this Standard as,

*“A person, persons or a group of people at the highest management level within an operating authority that makes decisions respecting the QMS (Quality Management System) and recommendations to the Owner respecting the subject system or subject systems.”*

At the City of Ottawa, Top Management is comprised of Infrastructure and Water Services Department's General Manager, Directors, and select Managers. This requirement is achieved through a series of meetings attended by Top Management and other Operating Authority staff, where a review of items specified in the Provincial Standard assesses the Quality Management System's performance during the previous year.

The main purpose of this report is to provide Council, as the Owner of the municipal drinking water systems, with an update on the implementation and the performance of the Quality Management System in 2022 and to seek endorsement of the current Operational Plan (see Document 1).

## **DISCUSSION**

The Quality Management System is a critical tool that supports and assures Council, as the Owner of the drinking water systems, that they are meeting their duties and responsibilities under the [Safe Drinking Water Act, 2002](#) and the Statutory Standard of Care (section 19).

As required by the Standard, the Quality Management System is documented in the Operational Plan and the Operational Plan must be endorsed by the Owner. In addition, the Standard mandates that the Operating Authority conducts an annual comprehensive management review of the Quality Management System, with the obligation to communicate the results to Council, who serve as the Owner of the drinking water systems.

### **Operational Plan**

Under the [Safe Drinking Water Act, 2002](#), the Ministry of the Environment, Parks and Conservation requires all Owners of municipal drinking water systems to obtain a license to operate their systems. To satisfy the requirements for the Municipal Drinking Water Licensing Program, this Operational Plan documents the drinking water Quality Management System.

The [Drinking Water Quality Management Standard](#) (referred to as this Standard), requires the current Operational Plan to obtain endorsement from the Owner of the drinking water systems, which, in the case of Ottawa, is City Council. This is accomplished at the City through Council resolution, following the election of a new Council.

The Operational Plan must document policies, processes, and procedures to be used by the Operating Authority in the operation, maintenance, and management of the drinking water systems to assure drinking water quality. The Operational Plan must consider elements fundamental to ensuring the long-term sustainability of a drinking water system including management processes, the maintenance of drinking water infrastructure, and identification of potential risks and risk mitigation strategies.

The current Operational Plan is attached as Document 1. The Operational Plan is a live document, subject to changes as the Quality Management System is modified or improved and was last revised in 2023.

### **Management Review Report of the Quality Management System**

As noted, the Standard requires the Operating Authority to complete an annual comprehensive management review of the Quality Management System and communicate these results to Council.

The management review included a series of meetings attended by Top Management. This review and any recommendations for improvement are included in the Management Review Report prepared annually for the previous calendar year. Top Management and staff from the Infrastructure and Water Services Department met in April and May 2023 and the final report documenting the outcome of these meetings was completed on May 31, 2023.

The report concludes that the City successfully implemented its Operational Plan in 2022. Some examples from the Management Review report that demonstrate this achievement include:

- Consistent excellent external audit results have been received since the Operating Authority's initial accreditation in 2009. In 2022, the third-party accreditation body conducted its annual audit of the City's Quality Management System. The results of this audit marked the City's eleventh year of receiving 100 per cent conformance of its Quality Management System.
- Ministry of Environment, Conservation and Parks' inspections for all of Ottawa's municipal water systems were completed in 2022 and the City received 100 percent ratings for all systems.
- The results of Quality Management System processes, including internal audits, emergency response testing, and risk assessment were discussed during the Management Review. Observations from these processes showed overall compliance with processes and procedures. All corrective actions and opportunities for improvement identified during these reviews and assessments are tracked for completion.
- The Quality Management System review also involves an analysis of operational performance through key performance indicators. Some significant indicators discussed during the Management Review include:

- The Water Quality Health Index compares Ottawa's drinking water quality against all guidelines and regulatory limits for both microbial and chemical parameters. All systems for both indexes in 2022 again received scores of 100 percent.
- The total costs per megalitre of water produced increased by 10.4 per cent, due to increased chemical prices and contracted services. However, operational optimization activities in 2022 led to decreased costs relating to hydroelectric power and waste sludge processing.
- Occurrences of emergency breakdowns and the associated labour hours decreased again in 2022, with only one emergency event occurring.
- The management review also includes discussing topics reported to Council in the annual [Municipal Drinking Water – 2022 Summary Report](#) to Council on March 31, 2023. These topics include the Ministry of the Environment, Conservation and Parks' inspection results, non-compliance events, water quality monitoring activities and results, and changes in legislation or regulations that may have an impact on drinking water systems.
- The management review meetings included updates on infrastructure programs and project updates.
  - Work on the [Drinking Water Asset Management Plan](#) continued in 2022, with a final report([ACS2022-IWS-AM-0001](#)) approved by Council on April 13, 2022. Future versions will include Council's target service levels for each measure. This report included information about the state of local infrastructure.
- The Quality Management System ensures that the infrastructure is safe and in good condition through several programs, including:
  - The Management Review process includes a summary of the Large-Diameter Watermain Condition Assessment Program results and follow-up activities, to continue meeting Recommendation 8 of the 2012 Audit of Construction Supervision. The assessment program includes the inspection of critical water transmission mains for leaks and structural conditions. For Council's additional information on this program, please see Document 2.

- During the 2022 management review, staff discussed topics specified in the Provincial Standard to assess the Quality Management System's performance during the previous year. This discussion identified 10 action items for process or administrative improvements and will be tracked for implementation.

These efforts as outlined in the Management Review report collectively reinforces the City produces and delivers some of the best quality and safest drinking water in the world.

## **FINANCIAL IMPLICATIONS**

There are no financial implications associated with this report.

## **LEGAL IMPLICATIONS**

There are no legal impediments associated with the implementation of the recommendations of this report.

## **COMMENTS BY THE WARD COUNCILLOR(S)**

This is a City-wide report.

## **ADVISORY COMMITTEE(S) COMMENTS**

There was no advisory committee consultation as part of this report.

## **CONSULTATION**

Ottawa Public Health (OPH) is a key partner in the provision of safe drinking water for Ottawa residents and businesses. To maintain continuity and responsiveness, Infrastructure and Water Services and OPH staff meet bi-monthly to review water quality test results, adverse water quality incidents, communication protocols, and potential risks of new and emerging issues in drinking water. In addition, a formal meeting is held each year during Q2 to review the water quality results achieved over the last year.

## **ACCESSIBILITY IMPACTS**

There are no accessibility impacts associated with this report.

## **ASSET MANAGEMENT IMPLICATIONS**

The recommendations documented in this report are consistent with the City's

Comprehensive Asset Management program objectives, which support the City to effectively manage existing and new infrastructure to maximize benefits, reduce risk, and provide safe and reliable service levels to community users.

Specifically, the Drinking Water Quality Management System considers asset management system elements from the acquisition of new assets to support growth, considering the City's commitment to fund future operations, maintenance, and renewal costs.

This informs decision making processes necessary to protect the assets that form Ottawa's drinking water system, which maintains the expected level of service and reduces public health risks. This is accomplished in a socially, culturally, environmentally, and economically conscious manner.

### **CLIMATE IMPLICATIONS**

There are no climate implications associated with this report.

### **ENVIRONMENTAL IMPLICATIONS**

The development of the Quality Management System is provincially legislated under the [Safe Drinking Water Act, 2002](#). The Quality Management System has been reviewed by a third-party accreditation body and the City of Ottawa has obtained its Operating Authority Accreditation. This report also fulfills the legislative requirement to report on the annual management review of the Quality Management System to the Owner

### **RISK MANAGEMENT IMPLICATIONS**

All risks associated have been identified and explained in the report and are being mitigated by the appropriate staff.

### **RURAL IMPLICATIONS**

Residents supplied by the six municipal well systems receive safe drinking water that meets all regulations, standards, inspections, and includes comprehensive management oversight by the Quality Management System.

### **TECHNOLOGY IMPLICATIONS**

There are no technology implications to this report.

### **TERM OF COUNCIL PRIORITIES**

The 2023-26 Term of Council Priorities includes a city that is green and resilient. The City of Ottawa implements protective measures to maintain the quality of Ottawa's drinking water sources at the provincially mandated standard. The City maintains an excellent water quality index rating.

### **SUPPORTING DOCUMENTATION**

Document 1 – Drinking Water Quality Management System Operational Plan

Document 2 – Large-Diameter Watermain Condition Assessment Program

### **DISPOSITION**

Staff will continue to work to provide safe drinking water, following all legislation. Staff will implement any direction received as a result of this report