



To: COUNCIL
Meeting Date: 2/28/2023
Subject: 2022 Annual Water Summary Report
Submitted By: Mike Parsons, Director of Environmental Services
Prepared By: Chris Whetstone, Manager of Water Operations;
Numan Khan, Water Technologist;
Dave Cattrysse, Utility Compliance Technologist
Report No.: 23-018-IFS
File No.: C11
Wards Affected: All Wards

RECOMMENDATION(S):

THAT Report 22-001-IFS 2022 Annual Water Summary Report be received for information as required by O.Reg.170/03 Schedule 22 of the Safe Drinking Water Act

AND THAT the City of Cambridge provide a copy of the Summary Drinking Water report to the Township of North Dumfries as required by Schedule 22 of O.Reg.170/03;

EXECUTIVE SUMMARY:

Purpose

As outlined in Schedule 22 of the Drinking Water Systems Regulation (O.Reg.170/03) of the Safe Drinking Water Act (2002) (SDWA) a summary report is to be prepared and given to the members of municipal Council no later than March 31 of each year. The following information is to be included in this report:

- A list of requirements not met by the system at any time during the reporting period, as defined by the SDWA, O.Reg.170/03, the system drinking water licence, or any Ministry order;
- The duration of any failure referred to in (a), and a description of the measures taken to correct the situation; and,
- A summary of the quantities and flow rates of the water supplied for the reporting period.

Key Findings

During the 2022 reporting period, the Cambridge Distribution System reported one non-compliance regarding the Safe Drinking Water Act.

The following matters are reported to Council in accordance with the Safe Drinking Water Act for the period of January 1 to December 31, 2022:

- During 2022 Cambridge had an incident of an Overall Responsible Operator operating in a standby capacity with an expired licence. Processes have been implemented to prevent this in the future.
- The Cambridge Distribution System is part of an Integrated Urban System, owned and operated by the Regional Municipality of Waterloo. The Region is responsible for pumping and treating the drinking water, and constructs and operates a trunk watermain network to distribute treated drinking water to Cambridge, Kitchener, Waterloo, North Dumfries (Brown Subdivision), Woolwich and Wilmot.
- The Ministry of Environment, Conservation and Parks (MECP) completed an annual inspection on March 1st, 2022 which covered January 1st to December 31st, 2021. The City received a perfect score regarding that inspection. As of the date of this report the City has not received the MECP inspection report for the 2022 data.
- In 2022 a total of 833 operational chlorine residual samples were taken, and 1611 bacteriological samples were collected within the distribution system. Of the samples collected only 9 were considered Adverse Water Quality Incidents (AWQI's) requiring resampling (see **Table 1** below).
- In Winter 2022, Cambridge only sampled distribution for lead due to the on-going COVID-19 pandemic. There was a total of 10 distribution samples collected with no lead exceedances.
- In Spring of 2022, Cambridge returned to sampling private plumbing. 50 samples were collected from residential, 5 samples from non-residential, and 14 samples from distribution. There were 3 lead exceedances. These samples exceeded the provincial standard of 10 micrograms/L and customer notification took place in accordance with all regulatory requirements.

Table 1: Adverse Water Quality Incidents (AWQI) Summary – January 1 to December 31, 2022

| Adverse Type | Adverse Date | Test Result | Corrective Action Date | Corrective Action |
|------------------------|---------------------|--------------------|-------------------------------|--------------------------|
| Present total Coliform | June 27, 2022 | Present | June 28, 2022 | Flush and resample |
| Present total Coliform | July 13, 2022 | Present | July 14, 2022 | Flush and resample |
| Present total Coliform | July 14, 2022 | Present | July 15, 2022 | Flush and resample |
| Present total Coliform | Sept 12, 2022 | Present | Sept 14, 2022 | Flush and resample |
| Low Chlorine | Sept 22, 2022 | 0.23 mg/L Total | Sept 22, 2022 | Flush and resample |
| Low Chlorine | Sept 26, 2022 | 0.13 mg/L Total | Sept 27, 2022 | Flush and resample |
| Present total Coliform | Nov 08, 2022 | Present | Nov 09, 2022 | Flush and resample |
| Present total Coliform | Nov 09, 2022 | Present | Nov 10, 2022 | Flush and resample |
| Present total Coliform | Nov 10, 2022 | Present | Nov 11, 2022 | Flush and resample |

A summary of the quantities of water supplied by the Regional Municipality of Waterloo can be seen below in **Table 2**. Flows increased from 15,558,065 m³ in 2021 to 15,834,914 m³ in 2022, for a total increase of 0.21% for 2022.

Table 2: Volume of Water Conveyed from Region of Waterloo Supply System to the Cambridge Distribution System

| Month | 2022 Monthly Total (m ³) | 2022 Average Day (m ³) | 2021 Monthly Total (m ³) | Variance from Previous Year (%) |
|--------------|--------------------------------------|------------------------------------|--------------------------------------|---------------------------------|
| January | 1,289,597 | 41,600 | 1,248,191 | 0.03 |
| February | 1,202,889 | 42,960 | 1,179,721 | 0.02 |
| March | 1,347,118 | 43,455 | 1,321,303 | 0.02 |
| April | 1,268,286 | 42,276 | 1,253,467 | 0.01 |
| May | 1,386,161 | 44,714 | 1,406,116 | -0.01 |
| June | 1,455,678 | 48,522 | 1,434,838 | 0.01 |
| July | 1,461,816 | 47,155 | 1,349,755 | 0.08 |
| August | 1,422,858 | 45,898 | 1,398,331 | 0.02 |
| September | 1,326,345 | 44,211 | 1,256,924 | 0.06 |
| October | 1,252,391 | 40,399 | 1,260,461 | -0.01 |
| November | 1,207,076 | 40,235 | 1,206,994 | 0.00 |
| December | 1,214,699 | 39,184 | 1,241,964 | -0.02 |
| Total | 15,834,914 | | 15,558,065 m³ | 0.21 |

Notes: Volume information taken from invoices submitted by the Regional Municipality of Waterloo.

At the time of this reporting there was insufficient data available to calculate the annual unaccounted water volume for 2022. This information will be presented as part of the Annual Drinking Water Quality Report later this year.

Financial Implications

There are no financial implications

STRATEGIC ALIGNMENT:

- Strategic Action; or
- Core Service

Objective(s): WELLBEING - Connect people to services that support individual and community wellbeing

Strategic Action: Not Applicable

Program: Water

Core Service: Water Services

BACKGROUND:

Schedule 22 of O.Reg 170/03 of the Safe Drinking Water Act requires all municipal drinking water system operators to present a Summary Drinking Water Report to Council by no later than March 31st of each year.

The provision of this report as information is meant to satisfy this requirement.

ANALYSIS:

Strategic Alignment

Providing our Summary Drinking Water Report to Council and North Dumfries Township supports our goal of communicating the delivery details of our drinking water service to our stakeholders and municipal partners.

Comments

- The Region provides annual summaries for each supply and the information is available on their website with a link from the City of Cambridge website. Reports from the connected systems have been, or will be, received.
- Some portions of Cambridge (Pressure Zones 1 & 2 West) are supplied periodically from the City of Kitchener distribution system. Brown Subdivision (North Dumfries) receives water from the Cambridge system. The City of Kitchener water quality report is available on their website.
- An Adverse Water Quality Incident (AWQI) identifies a potential problem and initiates corrective actions and retesting. City staff work in collaboration with the Ministry and the Regional Public Health Unit to resolve any concerns.
- The Region of Waterloo applies a safe disinfectant to all water to protect it from microbiological contamination as it flows through the distribution system.
- Regular testing and flushing activities are performed to ensure sufficient disinfectant levels to prevent microbiological contamination.
- Where disinfectant levels appear lower than normal action plans are made in cooperation with the Ministry and Regional Public Health, and levels are re-established. Results are circulated to both agencies and reports must be kept and made available for inspection by the MECP.
- Coliforms are used as an “indicator organism” of overall water quality and are not themselves necessarily harmful. Their presence may indicate the potential

presence of other harmful bacteria. When found in water flushing and resampling is a common response.

- When total coliform is found resampling is required upstream and downstream from the location where the original sample was collected. If the resamples are clear the report is circulated to the MECP and Public Health Unit and filed for record keeping. If a resample indicates coliform presence more expansive testing is performed, and in some cases areas of the system may be isolated and placed on a boil-water advisory until the problem is resolved.
- There have been no boil water advisories initiated in Cambridge in over 19 years.
- When a plumbing sample for lead exceeds the provincial water quality standard the owner of the property is provided with their test results, provided a facts sheet on the health impacts of lead in drinking water, and given options on ways they can eliminate lead from their plumbing. The City is not required to perform any further corrective actions on private plumbing unless otherwise directed by the Medical Officer of Health.
- The local Public Health Unit is provided notices for every plumbing sample that exceeds the standard, and records of all lead sampling results are kept by the City for review by the MECP during an inspection.

EXISTING POLICY / BY-LAW(S):

O.Reg.170/03 of the Safe Drinking Water Act

FINANCIAL IMPACT:

The 2022 approved Water Operating budget was \$38,513,400.

PUBLIC VALUE:

This report provides public information relating to the status of the Drinking Water distribution system.

ADVISORY COMMITTEE INPUT:

N/A

PUBLIC INPUT:

The Annual Drinking Water Report for 2022 has been posted for public review on the City's website as required under Schedule 22 of O.Reg 170/03 of the Safe Drinking Water Act.

INTERNAL / EXTERNAL CONSULTATION:

The 2022 inspection report by the Ministry of Environment, Conservation and Parks has not been received at the time of this report.

These results will be included in a follow up report anticipated for April to May 2023.

CONCLUSION:

During the 2022 reporting period, the Cambridge Distribution System reported one non-compliance regarding the Safe Drinking Water Act, and as outlined in the Cambridge Annual Report from the Ministry of the Environment, Conservation and Parks which is attached as Appendix "A".

REPORT IMPACTS:

Agreement: **No**

By-law: **No**

Budget Amendment: **No**

Policy: **No**

APPROVALS:

This report has been reviewed by the Chief Financial Officer and City Solicitor.

It has been reviewed and approved by the Director, Deputy City Manager and City Manager.

ATTACHMENTS:

1. Appendix "A" – 2022 Cambridge Annual Report from the Ministry of the Environment, Conservation and Parks