
TO: GENERAL COMMITTEE

SUBJECT: WATER OPERATIONS BRANCH 2021 DRINKING WATER SYSTEM REPORTS

WARD: ALL

PREPARED BY AND KEY CONTACT: D. MOREAU, MANAGER OF WATER OPERATIONS, EXTENSION 6158

SUBMITTED BY: S. DIEMERT, P.ENG.
DIRECTOR OF INFRASTRUCTURE

GENERAL MANAGER APPROVAL: B. ARANIYASUNDARAN, P.ENG., PMP
GENERAL MANAGER OF INFRASTRUCTURE & GROWTH MANAGEMENT

CHIEF ADMINISTRATIVE OFFICER APPROVAL: M. PROWSE, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That Staff Report INF001-22, regarding the City of Barrie's Drinking Water System be received for information purposes, including:
 - a) Schedule A – 2021 Drinking Water System Operations Report;
 - b) Schedule B – 2021 Annual Report, Section 11, Ontario Regulation (O.Reg.) 170/03;
 - c) Schedule C – 2021 Municipal Summary Report, Schedule 22, O.Reg. 170/03;
 - d) Schedule D – Ministry of Environment, Conservation and Parks Standard of Care; and
 - e) Schedule E – Quality Management System Management Review Meeting Minutes.

PURPOSE & BACKGROUND

Report Overview

2. The purpose of this Staff Report is
 - a) To summarize the Drinking Water System (the System) operating year of January 1st through December 31st, 2021; to provide information to City Council on the performance of the System; and to satisfy the regulatory requirements of the Safe Drinking Water Act, including the Drinking Water Quality Management Standard and regulatory reporting requirements under Section 11 and Schedule 22 of O.Reg. 170/03. This report is a compilation of information that demonstrates the commitment of the Water Operations Branch (the Branch) to providing safe drinking water while being transparent and financially accountable;

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- b) To provide a summary to Council which includes updates, changes and pertinent information in relation to the requirements of the *Safe Drinking Water Act* and the City of Barrie's Quality Management System; and
 - c) To solicit from Council an acknowledgement of their receipt of the Annual Report and Municipal Summary Report.
 3. The "2021 Drinking Water System Operations Report" summarizes the operating year of January 1st through to December 31st, 2021.
 4. There are two (2) specific reporting requirements related to O.Reg. 170/03:
 - a) Section 11 requires that an Annual Report be prepared not later than February 28th of each year. This report provides a brief description of the System; chemicals used; a breakdown of monetary expenses related to required equipment; a summary of all test results; and a summary of adverse reports and corrective actions taken. In addition, the report entitled, "2021 Drinking Water System Annual Report", must be available to the public upon request and be posted for viewing on the City of Barrie website.
 - b) Schedule 22 requires a summary report be prepared not later than March 31st of each year and a copy forwarded to members of Council to enable the Owner of the System to assess the capability of the System to meet existing and planned uses of the System. This report entitled, "Municipal Summary Report", lists the non-compliances in respect to the Safe Drinking Water Act, O.Reg. 170/03, the Municipal Drinking Water License, the Drinking Water Works Permit, orders applicable to the System received, and any corrective measures that were taken in respect of the non-compliances. It also summarizes the quantities of the water supplied during the reporting year, including monthly average and maximum daily flows, along with a comparison to the related capacities.
 5. In addition, under the Drinking Water Quality Management Standard, there is an obligation for the Operating Authority to report the results of the management reviews, the identified deficiencies, decisions, and action items to the Owner.

ANALYSIS

6. The System consists of a Surface Water Treatment Plant and associated Low Lift Pumping Station, 12 groundwater wells, three (3) in-ground storage facilities, three (3) elevated storage reservoirs and seven (7) booster stations, distribution watermains and associated hydrants, valves, and appurtenances in five (5) major pressure zones throughout the City of Barrie (City). Source water for the Surface Water Treatment Plant is drawn from Kempenfelt Bay of Lake Simcoe. Water supplied from the groundwater system relies on wells drilled into a deep aquifer that is not under the direct influence of surface water. The distribution system consists of approximately 3,948 hydrants and 660 km of watermain and transmission main serving approximately 44,908 services providing water to approximately 152,959 residents.
7. The total annual production was 13,733 ML with an average daily flow of 37 ML and a maximum daily flow of 90 ML.
8. The total cost to operate the System was approximately \$1,513.08/ML. Of that total, the cost of production and treatment amounted to approximately \$492.50/ML. The proportion of the total attributable to distribution system operating costs amounted to approximately \$3,970.65/km of watermain.

The raw and calculated data associated with these costs can be found in Table 1.

Table 1 Raw and Calculated Costs

Raw Data				Calculated Data		
	Expenses	Total Volume Produced in 2021 (ML)	Total km of Watermain	Cost to Operate per ML	Total Cost of Production and Treatment Services	Total Distribution Costs per km
GWS + SWS	\$6,763,565.30	13,733	660.40	Total Expense /Total Volume= \$1,513.08/ML	GWS+SWS expenses/volume produced= \$492.50/ML	WDS Expenses / km of watermain= \$3970.65/km
WDS	\$2,622,218.10					
Other	\$11,393,402.50					
Total Expenses	\$20,779,185.95					

*Note: "Other" expenses include Water Customer Services, Compliance and Technical Support, and Water Operations Administration
 GWS = Groundwater Supply
 SWS = Surface Water Supply
 WDS = Water Distribution Services

9. Approximately 93% of the projected operating budget was expended.
10. More than 2,900 samples were collected for independent laboratory analysis under the regulatory sampling program for chemical and microbiological parameters. The analytical results are used to assess and optimize system performance, develop corrective actions, ensure safe water for consumption and to meet legislative requirements.
11. Seven (7) Adverse Water Quality Incidents (AWQIs) were reported. Each were promptly resolved to the satisfaction of the Ministry of Environment, Conservation and Parks (MECP) and Simcoe Muskoka District Health Unit.
12. The MECP conducted a focused inspection of the System. The inspection covered the period from September 2020 to September 2021. Following the System inspection, the MECP issued a report summarizing the findings, including regulatory non-compliances. There were no findings of non-compliance with regulatory requirements and no recommendations reported. The MECP Final Inspection Rating for 2021 was 100%.
13. The Quality Management System was subject to an external audit in November 2021. The re-accreditation audit consisted of an off-site desktop and on-site audit of the Operational Plan. There were zero (0) non-conformances or opportunities for improvement identified by the external auditor and reaccreditation was maintained until 2025.

ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS

14. There are no environmental and climate change impact matters related to the recommendation.

ALTERNATIVES

15. As this Staff Report is being presented as a legislative requirement, and for information purposes only, no alternatives are presented.

FINANCIAL

16. There are no financial implications for the Corporation resulting from the proposed recommendation.

LINKAGE TO 2018–2022 STRATEGIC PLAN

17. The recommendation(s) included in this Staff Report support the following goals identified in the 2018-2022 Strategic Plan:
- Fostering a Safe and Healthy City
18. The Staff Report is a compilation of information that demonstrates the commitment of the Branch in providing safe drinking water thereby ensuring the health and safety of the residents of the City of Barrie.