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**TO:** **GENERAL COMMITTEE**

**SUBJECT:** **WATER OPERATIONS BRANCH 2019 DRINKING WATER SYSTEM REPORTS**

**PREPARED BY AND KEY CONTACT:** **C. MARCHANT, MANAGER OF WATER OPERATIONS, EXT. 6145**

**SUBMITTED BY:** **B. ARANIYASUNDARAN, P.ENG., PMP  
DIRECTOR OF INFRASTRUCTURE**

**GENERAL MANAGER APPROVAL:** **A. MILLER, RPP  
GENERAL MANAGER OF INFRASTRUCTURE AND GROWTH  
MANAGEMENT**

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

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**RECOMMENDED MOTION**

1. That Staff Report INF001-20 regarding the City of Barrie's Drinking Water System and the following Schedules 'A' – 'E' attached to Staff Report INF001-20 be received for information purposes:
  - a) Schedule 'A' – 2019 Drinking Water System Operations Report;
  - b) Schedule 'B' – 2019 Annual Report, Section 11, Ontario Regulation (O.Reg.) 170/03;
  - c) Schedule 'C' – 2019 Municipal Summary Report, Schedule 22, O.Reg. 170/03;
  - d) Schedule 'D' – Ministry Environment, Conservation and Parks (MECP) Standard of Care; and
  - e) Schedule 'E' – Quality Management System (QMS) Management Review Meeting Minutes.

**PURPOSE & BACKGROUND**

2. The purpose of this Staff Report is:
  - a) To summarize the Drinking Water System (the System) operating year of January 1<sup>st</sup>, 2019 through to December 31<sup>st</sup>, 2019; to provide information to City Council on the performance of the System; and to satisfy the regulatory requirements of the Safe Drinking Water Act (SDWA), including the Drinking Water Quality Management Standard (DWQMS) 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; and
  - b) To solicit from Council an acknowledgement of their receipt of the Annual Report and Municipal Summary Report.
3. The "2019 Drinking Water System Operations Report" summarizes the operating year of January 1<sup>st</sup>, 2019, through to December 31<sup>st</sup>, 2019.
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 28<sup>th</sup> 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,

“2019 Drinking Water System Operations 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 31<sup>st</sup> 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 SDWA, 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 rated capacities.
5. In addition, under the DWQMS, 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 (SWTP) and associated Low Lift Pumping Station (LLPS), 12 groundwater wells, three (3) in-ground storage facilities, three (3) elevated storage reservoirs and seven (7) booster stations, distribution watermain and associated hydrants, valves, and appurtenances in five (5) major pressure zones throughout the City of Barrie (City). Source water for the SWTP 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 3,817 hydrants and 640 km of watermain and transmission main serving approximately 44,426 services providing water to approximately 149,900 residents.
7. The total annual production for 2019 was 13,166 ML with an average daily flow of 36 ML and a maximum daily flow of 95 ML.
8. The total 2019 cost to operate the System was approximately \$1,617.89/ML. Of that total, the cost of production and treatment amounted to approximately \$504.12/ML. The proportion of the total attributable to distribution system operating costs amounted to approximately \$4,397.14/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 2019 (ML)	Total km of Watermain	Cost to Operate per ML	Total Cost of Production and Treatment Services	Total Distribution Costs per km
GWS + SWS	\$ 6,637,297.07	13,166	640	Total Expense / Total Volume = <b>\$1,617.89/ML</b>	GWS + SWS expenses / volume produced= <b>\$504.12/ML</b>	WDS Expenses / km of watermain= <b>\$4,397.14/km</b>
WDS	\$ 2,814,167.41					
Other	\$ 11,849,717.85					
Total Expenses	\$ 21,301,182.33					

\*Note: “Other” expenses include Water Customer Services, Compliance and Technical Support, and WOB Manager.

GWS = Groundwater Supply    SWS = Surface Water Supply    WDS = Water Distribution Services

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9. Approximately 99% of the projected operating budget was expended in 2019.
  10. More than 2,900 samples were collected for independent laboratory analysis under the regulatory sampling program for chemical and microbiological parameters in 2019. 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. Three (3) Adverse Water Quality Incidents (AWQIs) were reported in 2019. Each were promptly resolved to the satisfaction of the MECP and Simcoe Muskoka District Health Unit (SMDHU).
  12. The MECP conducted an annual inspection of portions of the System from December 2018 to January 2019. Following the System inspection, the MECP issued a report summarizing the findings, including regulatory non-compliances. One (1) non-compliance with regulatory requirements and one (1) recommendation were reported in the 2018 MECP Inspection Report issued on February 13<sup>th</sup>, 2019, which the Branch promptly responded to.
  13. The QMS was subject to an external audit in November 2019. The surveillance audit consisted of an off-site desktop audit of the Operational Plan. There were zero (0) Non-conformances or Opportunities for Improvement identified by the external auditor.

#### **ENVIRONMENTAL AND CLIMATE CHANGE IMPACT MATTERS**

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

#### **ALTERNATIVES**

15. As this 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 COUNCIL STRATEGIC PRIORITIES**

17. The information contained in this report relates to the following 2018-2022 Council Strategic Plan priority:  
  
☒ Fostering a Safe and Healthy City
18. This 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.