
TO: GENERAL COMMITTEE

SUBJECT: WATER OPERATIONS BRANCH 2016 ANNUAL REPORT TO COUNCIL

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

SUBMITTED BY: J.F. THOMPSON, P ENG., CMM III IP, PMP
DIRECTOR OF ENVIRONMENTAL SERVICES

GENERAL MANAGER APPROVAL: RICHARD FORWARD, MBA, M.Sc., P.ENG.
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CHIEF ADMINISTRATIVE OFFICER APPROVAL: CARLA LADD, CHIEF ADMINISTRATIVE OFFICER

RECOMMENDED MOTION

1. That the Water Operations Branch' Drinking Water System, Annual Report for the period of January 1st to December 31st, 2016, including Appendices "A" – "L", be received for information purposes.

PURPOSE & BACKGROUND

Report Overview

2. The purpose of Staff Report ENV002-17 is as follows:
 - a) To summarize the System operating year of January 1, through to December 31st, 2016; provide information to the 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 to end users while being transparent and financially accountable; and
 - b) To solicit from Council an acknowledgement of their receipt of the Annual Report to Council, including the supporting documentation.
3. The "Water Operations Branch, Annual Report to Council (for the period of January 1st to December 31st, 2016)" summarizes the operating year of January 1, 2016, through to December 31, 2016.
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; a summary of adverse reports and corrective actions taken. In addition, the Report entitled, "2016 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 municipal council to enable the owner of the drinking water 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 MDWL, the DWWP, and orders applicable to the System received, and the corrective measures that were taken in respect to 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 ground water wells, three (3) in-ground storage facilities, three (3) elevated storage reservoirs and seven (7) booster stations, distribution water mains and associated hydrants, valves, and appurtenances in five (5) major pressure zones throughout the City. Source water for the SWTP is drawn from Kempenfelt Bay (the 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 3,731 hydrants and approximately 625 km of water main and transmission main serving approximately 43,729 services providing water to approximately 147,000 customers.
7. The total annual production for 2016 was 13,853 ML (megalitres), a very modest increase from 2015 with an average daily demand of 38 ML and a maximum day demand of 59 ML in the month of June 2016.
8. The total cost to operate the System was approximately \$1,280.06/ML. The total production and treatment costs amounted to approximately \$393.40/ML. Total distribution system operating costs amounted to approximately \$4,624/km of watermain. The total cost of customer care amounted to approximately \$22.15/service or \$6.59/population served.
9. Approximately 90% of the projected budget was consumed and approximately 102% of the projected water revenues were collected; therefore, approximately \$8,257,838 was transferred to the Water Rate Reserve Fund.
10. More than 3,000 samples were collected for independent laboratory analysis under the regulatory sampling program for chemical and microbiological parameters in 2016. 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. Fourteen (14) Adverse Water Quality Incidents (AWQIs) were reported in 2016. All were resolved to the satisfaction of the MOECC and Simcoe Muskoka District Health Unit (SMDHU). The following AWQIs reported in 2016 were of note:
 - a) AWQI No. 130948, 130960 and 130966 were issued by the MOECC on August 25, 26 and 27, 2016, respectively, as a result of reported laboratory results that exceeded the applicable standards stipulated in O.Reg. 169/03. The samples were collected for final tie-ins as part of watermain commissioning, in accordance with the MOECC Watermain Disinfection Procedure.

- b) AWQI No 131564 was issued by the MOECC on October 16th, 2016, following the break of both a watermain and sanitary line within the same trench, with suspected cross-contamination. Subsequently, the Simcoe Muskoka District Health Unity (SMDHU) issued a Boil Water Order (the Order) on October 18th, 2016. The Branch responded to the incident immediately and resolved the incident in consultation with the SMDHU and the local MOECC Inspector. Impacted services were provided an alternate water supply until the infrastructure was repaired and the situation was remediated, including receipt of adequate analytical laboratory results confirming the potable water infrastructure was acceptable for use. The Order was rescinded on November 24th, 2016.
12. The MOECC conducted an annual inspection of portions of the System from November 2015 to February 2016, inclusive. Following the System inspection, the MOECC issued a report summarizing the findings, including regulatory non-compliances and recommendations and best practice issues, if applicable. One (1) recommendation was reported in the 2015 MOECC Inspection Report issued on March 2nd, 2016. The inspection findings noted a recommendation to which the Branch promptly responded.
13. The MOECC conducted an annual inspection of portions of the System from November 2016 to February 2017, inclusive. The Report detailing the findings of the inspection and regulatory non-compliances and recommendations and best practice issues, if applicable was not available at the time of preparation of this Report.
14. The QMS was subject to an external audit in December 2016. The re-accreditation audit included an off-site desktop audit of the Operational Plan. There were zero (0) non-conformances identified by the external auditor, indicating 100% conformance with regulatory requirements, and accreditation was maintained for the 2016/2017 operating year.
15. Pursuant to the SDWA, the MDWL and DWWP were issued on October 21st, 2014, with an expiry date of October 20th, 2019.
16. In 2016, the City was awarded the “Exemplary User Award” honouring outstanding efforts and achievements from within the Computerized Maintenance Management System (CMMS) user community and was presented to the City due to extraordinary use of the CMMS, addressing the critical needs of the community and for providing support and guidance to fellow CMMS users.

ENVIRONMENTAL MATTERS

17. There are no environmental matters related to the recommendation other than regulatory compliance.

ALTERNATIVES

18. As this Report is being presented as required legislatively, and for information purposes only, no alternatives are presented.

FINANCIAL

19. There are no direct financial implications associated with the recommended motions.

LINKAGE TO COUNCIL STRATEGIC PRIORITIES

20. The recommendations included in this Staff Report are not specifically related to any of City Council's Strategic Priorities but is a requirement of ongoing service delivery.

Attachments:

Appendix "A" – 2016 Annual Report to Council;
Appendix "B" – 2016 Annual Report, Section 11, Ontario Regulation (O.Reg.) 170/03;
Appendix "C" – 2016 Lead Testing Report, Schedule 15.1, O.Reg. 170/03;
Appendix "D" – 2016 Municipal Summary Report, Schedule 22, O.Reg. 170/03;
Appendix "E" – O.Reg. 170/03 Drinking Water Systems (the Regulation);
Appendix "F" – City of Barrie Municipal Drinking Water Licence (MDWL);
Appendix "G" – City of Barrie Drinking Water Works Permit (DWWP);
Appendix "H" – City of Barrie Permit to Take Water (PTTW);
Appendix "I" – Ministry of Environment and Climate Change (MOECC) Standard of Care
Appendix "J" – MOECC Guide for Councils;
Appendix "K" – Quality Management System (QMS) Management Review Meeting Minutes; and
Appendix "L" – Municipal Drinking Water System (the System) Financial Plan.