



INFORMATION REPORT

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| TO: | Chair and Members Public Works Committee |
| COMMITTEE DATE: | March 21, 2016 |
| SUBJECT/REPORT NO: | 2015 Annual Drinking Water Report (PW16018)- (City Wide) |
| WARD(S) AFFECTED: | City Wide |
| PREPARED BY: | Dan McKinnon 905-546-2424, Extension 5941 |
| SUBMITTED BY: | Gerry Davis, CPA,CMA General Manager Public Works Department |
| SIGNATURE: | |

Council Direction:

Not Applicable

Information:

Under the Safe Drinking Water Act, there are several annual reporting requirements related to the operation and management of the City of Hamilton’s five Drinking Water Systems (as identified below).

| Licence Number | Drinking Water System (DWS) | Expiration |
|----------------|-----------------------------|--------------|
| 005-101 | Hamilton DWS | May 29, 2019 |
| 005-102 | Freelton DWS | May 29, 2019 |
| 005-103 | Greenville DWS | May 29, 2019 |
| 005-104 | Carlisle DWS | May 30, 2019 |
| 005-105 | Lynden DWS | May 29, 2019 |

This Information Report provides a summary of these requirements and highlights key information. More detailed information is provided in the attached two Appendices (A & B).

Summary Report for Municipalities (Appendix A)

As per the Safe Drinking Water Act, Ontario Regulation, 170/03, Schedule 22, Council must receive an annual drinking water summary report by March 31st of each year. This 2015 summary report has been prepared in accordance with the requirements as defined in Schedule 22, for each of the City of Hamilton's five DWSs. Specifically provided are lists of major capital upgrades initiated in 2015 as well as those planned for 2016. During this period there were no Provincial Officer's Orders issued. All confirmed Adverse Water Quality Incidents were reported to the Ontario Ministry of Environment and Climate Change's (MOECC) Spills Action Centre (SAC) and Public Health Services (PHS) and are provided in the report. All water taking quantities and flow rates were within approved rated capacities and provincial water taking limits. Data related to the water quantities, flow rates and monthly average and maximum daily flows (in comparison to approved flow rates) for the five DWSs is also provided.

Drinking Water Quality Management System - Summary Report (Appendix B)

The submission of the Drinking Water Quality Management System (DWQMS) Summary Report satisfies requirements of the Drinking Water Quality Management System Standard.

The purpose of the DWQMS Summary Report is to inform Mayor and Council (Owners) of the performance and major milestones achieved in the City's DWQMS. Specifically, the Hamilton Water Division (Operating Authority) is required to inform Top Management (General Manager of Public Works and Director of Hamilton Water Division) and the Owner of the outcomes of the infrastructure and management reviews. The DWQMS Summary Report (Appendix B) exceeds these requirements and includes additional information relating to DWQMS audits and other milestones of the DWQMS.

Corrosion Control Program

The City of Hamilton conducted its Legislated Community Lead Sampling Program for the Woodward DWS between 2008 and 2009. The results of the sampling program indicated that greater than 10 percent of tap water samples collected from residential and non-residential plumbing systems ("at the tap") exceeded 10 micrograms per litre ($\mu\text{g/L}$) in all four sampling rounds and as such the MOECC required the City of Hamilton to prepare and submit a Corrosion Control Plan (CCP) for the Woodward DWS. A CCP was developed and accepted by the Ministry of the Environment (MOE) on June 7th, 2011.

Based on the recommendations of the CCP, a phosphate-based treatment approach was identified as the most optimal solution for corrosion control in the Woodward DWS. In 2012 and 2013, the Operating Authority conducted a Corrosion Control Pilot Study, which was subsequently peer reviewed, to ensure that the most appropriate phosphate-based additive was chosen to address the corrosion issue in Hamilton. The results of this work recommended that the City proceed to full-scale implementation with orthophosphate for corrosion control, using phosphoric acid as the source additive.

At the November 25, 2015 Council meeting Report 15-015, Corrosion Control Program

for the Woodward Drinking Water System, was adopted. The primary recommendation of the report was to gain authorization to implement corrosion control within the Woodward Drinking Water System (DWS) using a phosphate-based treatment approach as the method for corrosion control, and phosphoric acid as the treatment additive.

The City of Hamilton updated the MOECC of Council's approval in January 2016 and is moving forward with the implementation of the CCP as outlined in Report 15-015.

Financial Plan

The need to prepare a Financial Plan is, in part, a regulatory compliance requirement specific to the water licensing conditions defined within the DWQMS and more specifically detailed under Regulation 453/07 - Financial Plans made under the Safe Drinking Water Act, 2002. The required Financial Plan must address a minimum six-year time-frame. Council approved a revised Financial Plan on January 29, 2014, covering a ten-year period. The plan was sent to the Ministry of Municipal Affairs and Housing on January 31, 2014. Circumstances that have occurred over the last few year that include declining revenue from lower community consumption as well as upward pressure on operating and capital budgets within the Water system have resulted in a divergence from the approved plan. Specifically, the approved plan anticipates an increase of 4.25 % per year for water rates as well as growth in demand that combined reflect an approximate increase of approximately 5.5% in water revenues. Lower community demand and revised rate forecast has delivered closer to 3.7% and as such a revised plan will be required that seeks to either increase revenues or revise the plan.

Risk Assessment Review

The DWQMS Standard requires that the Risk Assessment be reviewed on an annual basis to verify the currency and validity of the information and that the risk assessment process and outcomes be re-evaluated every three years. A re-evaluation of the Risk Assessment scope, criteria, data fields and update of risk assessment data was conducted in 2014 as it was the 3 year "redo" milestone for the Risk Assessment. The 2015 Risk Assessment was an interim review by a condensed review team comprised of the Managers of Plant Operations and Water Distribution & Wastewater Collection along with the Overall Responsible Operator (ORO) -Treatment and ORO-Distribution. Since a new ORO-Distribution was hired in December 2015, a Risk Assessment Coordination meeting was held on January 28, 2016 to ensure that the ORO-Distribution was aware of the identified risks. The team also reviewed the outcomes from 2014 and focused on new and upgraded infrastructure (e.g. horizontal, vertical, including wells). The DWQMS Summary Report summarizes the outcomes of the 2015 risk assessment process.

Infrastructure Review

The Operating Authority must ensure and verify, on an annual basis, the adequacy of water related infrastructure. In order to satisfy the requirements of the DWQMS Standard, the Operating Authority conducted a formal annual review of its vertical (water treatment, storage and pumping) and horizontal (watermains) infrastructure. The

scope of the review also considered the operation, maintenance and replacement of existing infrastructure assets as well as new infrastructure planned for the immediate and long-term future.

The evaluation of programs indicates that appropriate processes are in place to identify infrastructure needs. Based on the results of the 2015 infrastructure review, it can be concluded that vertical and horizontal infrastructure is generally found to be available, when needed, and maintained and improved, when necessary. The DWQMS Summary Report includes the major recommendations from the 2015 Infrastructure Review.

Audit Program

The DWQMS accreditation process requires both 3rd Party Accreditation Audits and annual internal audits by the Operating Authority.

Hamilton Water utilizes the services of QMI-SAI Global as the Accreditation Body for the DWQMS. In March 2015, QMI-SAI Global conducted an off-site documentation surveillance audit. There were no non-conformances or Opportunities for Improvement found. Because this was the third year of the audit cycle, 2015 included an on-site reaccreditation audit in April 2015. Hamilton Water was recommended for re-accreditation with 2 minor non-conformances and 1 opportunity for improvement.

Corporate Audit Services conducted an audit of Hamilton Water with regards to water supply compliance and conformance in Q1 2015. The Close Out meeting was held on May 7, 2015 and the Final Report was adopted by Council on June 24, 2015. It was noted in the report, that given the large volume of audit and inspection reports that were reviewed, there was a very low volume of non-compliance/non-conformance items detected. Hamilton Water provided evidence that all compliance requirements were met. Two findings were identified regarding conformance activities of which one was closed in 2015 and the second will be closed by the November 2016 deadline.

The Internal Audit Team conducted a full internal audit of the DWQMS from September 25 to October 26, 2015. The audit assessed the implementation of all 21 elements of the DWQMS Standard with an emphasis on Level IV and V documentation and front-line staff. The results of the annual DWQMS Internal Audit demonstrate that the City of Hamilton's DWQMS is a maturing system and that opportunities to improve the DWQMS continue to be identified to ensure that the system is relevant and appropriate for Hamilton Water.

Compliance & Regulations staff will be developing an Audit Plan for the 2016 DWQMS internal audit.

Management Review

The DWQMS Standard requires that Top Management participate in a management review of the DWQMS at least once per year. The Management Review is a formal presentation of compliance, operational, water quality, communication and infrastructure data. In 2015, the DWQMS Top Management Review was held on December 3rd. Overall, meeting participants concluded that the DWQMS is suitable, adequate and effective. Continual improvement actions were identified and target dates for

completion were determined. The DWQMS Summary Report (Appendix B) provides an overview of the results, a record of decisions and action items from the 2015 Management Review.

Standard of Care Training

Standard of Care requirements for Owners and Managers of municipal DWSs came into effect as of January 1st, 2013. Standard of Care is a statutory due diligence requirement identified in Section 19 of the Safe Drinking Water Act. Previously, all Owners (Mayor and Council) received Standard of Care training in 2012. Training was provided to the new Mayor and Council members in early 2015 and the Commitment and Endorsement of the DWQMS was resigned in the Operational Plan Summary Report.

Update and Going Forward

The outcomes from the Management Review and internal and external DWQMS audits concluded that the DWQMS is adequate, suitable and effective and conforms to the requirements of the DWQMS Standard. Corrective action plans from audits and action items from the Management Review will be implemented to ensure continual improvement of the DWQMS. Major next steps related to the maintenance of the DWQMS in 2016 are included in Appendix B.