



INFORMATION REPORT

TO:	Chair and Members Public Works Committee
COMMITTEE DATE:	March 20, 2017
SUBJECT/REPORT NO:	2016 Annual Drinking Water Report (PW17023) (City Wide)
WARD(S) AFFECTED:	City Wide
PREPARED BY:	Cari Vanderperk 905-546-2424 ext. 3250
SUBMITTED BY:	Mark Bainbridge Acting Director, Hamilton Water 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 (DWS) (as identified below).

Licence Number	Drinking Water System (DWS)	Expiration
005-101	Hamilton DWS	May 29, 2019
005-102	Freelton DWS	May 30, 2019
005-103	Greensville DWS	May 29, 2019
005-104	Carlisle DWS	May 29, 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.

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This 2016 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 2016 as well as those planned for 2017. 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 as required by Schedule 15.1 of Ontario Regulation, 170/03. 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.

The Public Works Committee (15 - 015) recommended that the Corrosion Control Program (Report 15 - 79) for the Woodward Drinking Water System be approved by Council. Council adopted the recommendation on November 25, 2015 in Report 15-026.

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The City of Hamilton updated the MOECC of Council's approval in January 2016 and on the status of the project on July 27, 2016. The implementation of the CCP as outlined in Report 15-079 is progressing.

On October 12, 2016, Council ratified GIC Report 16-023 which included Report FCS16083 regarding the Public Transit Infrastructure Fund (PTIF) and Clean Water and Wastewater Fund (CWWF) Grant Programs. One of the recommendations contained within Report 16-023 reads as follows:

“(b) That the projects, as listed in Appendix “C” to Report 16-023, be approved as the City of Hamilton's submission for consideration to Infrastructure Ontario for the requested funding amount of \$32,918,072, in accordance with the terms and conditions associated with the Clean Water and Wastewater Fund (CWWF);”

One of the projects identified in that report was the Water Treatment Plant (New Corrosion Control Building). Hamilton Water wishes to leverage the funding opportunity which supports 75% of the project cost. For this particular project that represents \$2,310,000 for a new chemical feed and storage facility in order to reduce lead concentrations in the distribution system.

To monitor the progress of the Corrosion Control Program it is required to have baseline data of the Woodward DWS. The first round of baseline sampling was completed on September 20, 2016. The data was compiled and reviewed by staff on December 8th and after analysis determined that no data stood out as unusual. The second round of sampling is currently underway and scheduled to be completed by February 2017. Data will continue to be collected throughout the life of the corrosion control program.

Financial Plan:

The need to prepare a Financial Plan is, in part, a regulatory compliance issue specific to the water licensing requirements 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. The Financial Plan will be revised in 2018.

Risk Assessment Review:

The DWQMS Standard requires that the Risk Assessment be reviewed on an annual basis to verify that the information is current and valid 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 and 2016 Risk Assessments were interim reviews by a condensed review team comprised of the Managers of Plant Operations, Plant Maintenance and Technical Services and Water Distribution & Wastewater Collection along with the Overall Responsible Operator (ORO) -Treatment and ORO-Distribution. The team reviewed new and upgraded infrastructure (e.g. horizontal, vertical, including wells). The

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DWQMS Summary Report summarizes the outcomes of the 2016 risk assessment process.

Infrastructure Review:

Hamilton Water 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 (wells, 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 2016 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. There was significant discussion about ensuring that sufficient capital funds were available for long-term infrastructure grades and maintenance. The DWQMS Summary Report includes the major recommendations from the 2016 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 May 2016, QMI-SAI Global conducted an off-site documentation surveillance audit. There were no non-conformances or Opportunities for Improvement found.

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 evidence was provided to Corporate Audit Services in November 2016 for final closure.

The Hamilton Water Internal Audit Team conducted a full internal audit of the DWQMS from September 14 to October 31, 2016. The audit assessed the implementation of all 21 elements of the DWQMS Standard with an emphasis on Level IV and V documentation and the knowledge of front-line staff. The results of the annual DWQMS Internal Audit conducted in September/October 2016 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. The Hamilton Water DWQMS contains the required procedures

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and records to illustrate the establishment and continual improvement of the management system.

Hamilton Water's Compliance & Regulations staff will be developing an Audit Plan for the 2017 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 2016, the DWQMS Top Management Review was held on December 1st. 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 2016 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 Public Works Acting General Manager and Councillor Skelly in 2016.

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 2017 are included in Appendix B.

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