

City of Cambridge



2005 Water Summary Report

Presented to Council March 20, 2006.

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Background

The delivery of potable water in Ontario is regulated by the Ministry of Environment (MOE) under the Safe Drinking Water Act (formerly the Ontario Water Resources Act). On June 1, 2003 O. Reg. 170/03 came into affect. This regulation prescribes requirements for owners and operators of municipal drinking water systems.

Among the obligations, O. Reg. 170/03 prescribes the need for all owners of licensed water works to produce a Summary Report as indicated in Schedule 22. The Report is required to contain the following information:

- ✚ List of requirements of the Act, regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report and specify the duration of the failure and describe the measures taken to correct the situation.
- ✚ Summary of quantities of water used for the period covered by the report.
- ✚ The Summary Report must be presented and accepted by Council by March 31st of each year.

System Description

The City of Cambridge maintains and operates 469 kilometers of watermains within the City's boundaries. The City owns a total of 411 km with the remaining 58 km being shared with the Region of Waterloo, with some dual use components. Within the network, there are nearly 36,200 service connections supplying water to approximately 120,000 residents and various business and industrial locations.

The distribution system is divided into five individual pressure zones based on the water supply components and the varying elevations throughout the City.






Water is supplied to the City by the Region of Waterloo through a network of wells, treatment plants, pumping stations, control valves, and reservoirs. Treated water from this supply network is monitored on-line, 24 hours per day by operators through the Regional SCADA (System Control and Data Acquisition) system.

Legislation

Since the issuance of the Walkerton Reports I and II in 2002, many legislative and regulatory changes have occurred for those supplying drinking water in Ontario. The following are the primary pieces of legislation that have directly affected the operation of the City of Cambridge's water distribution system.

Safe Drinking Water Act

As recommended by Commissioner O'Connor, the government passed the Safe Drinking Water Act in 2002, which expands on existing policy and practice and introduces new features to protect drinking water in Ontario. The act's purpose is to protect human health through the control and regulation of drinking-water systems and drinking-water testing. The act also provides legislative authority to implement 50 of the 93 recommendations made in Commissioner O'Connor's Part Two Report. It also has the benefit of gathering in one place all legislation and regulations relating to the treatment and distribution of drinking water. Parts of the act address:

-  Accreditation of operating authorities
-  Municipal drinking water systems
-  Drinking water testing
-  Inspections
-  Compliance and Enforcement

Ontario Regulation 170/03: Drinking Water Systems Regulation

The Drinking Water Systems Regulation (O. Reg. 170/03) regulates municipal and private water systems that provide water to year-round residential developments. This regulation stipulates treatment equipment usage, operational checks and sampling, chemical and microbiological testing requirements, corrective actions, and reporting requirements.

Ontario Regulation 128/04: Certification of Drinking-Water Operators and Water Quality Analysts

The Water Operator Certification Program was initiated for drinking water operators in 1987 as a voluntary program. On May 14, 2004, O. Reg. 128/04 was issued, increasing the requirements for drinking water operators' certification. The regulation also establishes ongoing training requirements for these operators. Details note the different types of licenses, reissuance and transferability, overall and operator in charge responsibilities, record keeping, and operations/maintenance manuals.

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Future Considerations

On November 28, 2005, The Ontario Ministry of the Environment posted the Drinking Water Quality Management Standard on the Environmental Registry for comment until January 27, 2006. The purpose of this Standard is to assist owners and operating authorities in the effective management and operation of their municipal residential drinking water systems. This Standard outlines requirements for a quality management system to ensure high quality drinking water. An implementation date has not yet been set; as such, City staff have reviewed the potential impacts of this draft Standard and are confident that compliance will be achieved.

Non-Compliances with Legislation

Schedule 22 requires that all non-compliance with applicable legislation be discussed in the Summary Report. The following issues were noted and addressed during the Ministry of the Environment's annual system inspection.

Table 1: Non-Compliances

Requirement	Non-Compliance	City Action
Logbooks	The record system did not allow the reader to unambiguously identify the person who made the logbook entry.	On May 20, 2005, a Standard Operating Procedure was developed to address this issue. On December 5, 2005, the SOP was reviewed by the Compliance Manager to verify that all regulatory requirements were addressed. Following this, all active licensed water operators were trained.
	For every operational test, a record was not made of the date, time, location and name of the person who performed the test and the results.	On May 26, 2005, a Standard Operating Procedure was developed to address this issue. On December 5, 2005, the noted SOP was reviewed and modified by the Compliance Manager to address the regulatory requirements, specifically the inclusion of date, time, location, and the name of the operator carrying out the test and the results of that test. Following this, all active licensed water operators and water quality analysts were trained.
Water Quality Monitoring	The disinfectant residual was not measured and recorded daily for the distribution system, which was noted in the previous inspection.	All daily chlorine residuals have been taken since January 22, 2005 and a revision of the appropriate Standard Operating Procedure was carried out on December 8, 2005. Following this, all active licensed water operators and water quality analysts were trained.

With the exception of the noted issues, the City of Cambridge is not aware of any additional non-compliances within the distribution system for 2005.

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Water Usage

From January 1 to December 31, 2005, the City of Cambridge received a total of 18,792,224 cubic metres of water from the Region of Waterloo (supplier). This compares to 19,012,063 cubic metres from the previous year (a decrease of 1.1%).

Table 2: Monthly Water Consumption

Month	Consumption (m ³)	Ave. Daily Consumption (m ³)
January	1,552,658	49,000
February	1,388,165	49,570
March	1,544,870	49,828
April	1,491,335	49,704
May	1,562,063	50,382
June	1,749,769	58,318
July	1,716,760	55,371
August	1,626,449	52,489
September	1,531,630	51,047
October	1,522,419	49,103
November	1,472,115	49,063
December	1,633,991	52,702
2005 Total	18,792,224	51,381

Chart 1: Monthly Water Consumption

