



# **Town of Witchurch-Stouffville Operational Plan**

## **Ballantrae/Musselman Lake Class I Water Distribution System & Stouffville Class I Water Distribution System**

**Version 5  
Revised: February 11, 2020**

Town of Witchurch-Stouffville  
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## **DEFINITIONS**

The following definitions will be used throughout this Operational Plan, its appendices and procedures:

**Administration Staff** – A person employed or contracted by the Town of Whitchurch-Stouffville who performs administrative or technical duties related to the water distribution systems

**Annual Report** – Legislated under O. Reg. 170/03, summarizes a water distribution system's performance throughout the previous year. This document is required to be available to the public no later than February 28<sup>th</sup> of each year.

**Audit** - A systematic and documented verification process that involves objectively obtaining and evaluating documents and processes to determine whether a quality management system conforms to the requirements of the Drinking Water Quality Management Standard (DWQMS)

**Competence** – The combination of observable and measurable knowledge, skills and abilities which are required for a person to carry out assigned responsibilities

**Conformance** – the fulfillment of a DWQMS requirement

**Consumer** – The drinking water end user. Includes residential, commercial, institutional and industrial users

**Controlled Document** – A Quality Management System (QMS) document located at a specific location stated in the Document Control Table and managed as outlined in this procedure

**Corrective Action** – action to eliminate the cause of a detected non-conformance with the QMS, with the requirements of the DWQMS or other undesirable situations

**Critical Control Limit** - The point at which a critical control point response procedure is initiated

**Critical Control Point (CCP)** - An essential step or point in the subject system where some sort of control is applied to prevent or eliminate a drinking water health hazard or reduce it to an acceptable level

**Document** – Is information recorded or stored by means of any device. It may include a sound recording, video tape, film, photograph, chart, graph, map, plan, survey, book of account, and information recorded or stored by means of any device



**Drinking Water Quality Management Standard (DWQMS)** - The quality management standard approved by the Minister in accordance with section 21 of the Safe Drinking Water Act, 2002 (SDWA)

**Form** - a document with blank spaces to be filled in with particulars

**Hazard** – A source of danger or a property that may cause drinking water to be unsafe for human consumption. The hazard may be biological, chemical, physical or radiological in nature.

**Hazardous Event** – An incident or situation that can lead to the presence of a hazard

**Infrastructure** – the set of interconnected structural elements that provide the framework for supporting the operation of the drinking water system including watermains and appurtenances and supporting services such as transportation or communication

**Municipal Office** - The Town of Whitchurch-Stouffville main office

111 Sandiford Dr, Stouffville ON, L4A 0Z8

**Municipal Website** - The Town of Whitchurch-Stouffville website: [www.townofws.ca](http://www.townofws.ca)

**Non-Conformance** – the non-fulfillment of a DWQMS requirement

**Objective Evidence** – Records, statements of fact or other information which are relevant to audit criteria and verifiable

**Operating Authority** – The Town of Whitchurch-Stouffville’s Public Works Department is the Operating Authority for the Ballantrae/Musselman’s Lake and the Stouffville water distribution systems (subject systems). The Public Works Department has been given the responsibility by the Owner for the operation, management, maintenance or alteration of the subject systems.

**Operations Centre** - The Town of Whitchurch-Stouffville Public Works Yard, 5061 Bethesda Rd, Stouffville ON

**Operator** – A person employed or contracted by the Town of Whitchurch-Stouffville who directly works with the water distribution systems

**Owner** - The Corporation of the Town of Whitchurch-Stouffville, represented by the Mayor and Councillors.

**Preventative Action** – action intended to eliminate the cause or causes of potential non-conformance(s)



**Quality Management System (QMS)** - A system to:

- a) Establish policy and objectives, and to achieve those objectives, and
- b) Direct and control an organization with regard to quality.

**QMS Document** – Any document required by the Town of Whitchurch-Stouffville’s QMS as identified in this procedure and in the Document Control Table, located in QMS-APP-05-01

**QMS Form** – a document with blank spaces used to record information stating results achieved or providing proof of activities performed such as regulatory information

**QMS Record** – Any record required by the Town of Whitchurch-Stouffville’s QMS as identified in this procedure and in the Record Control Table, located in QMS-APP-05-02

**Record** - A form stating results achieved or providing proof of activities performed

**Rehabilitation** – The process of repairing and refurbishing an infrastructure element

**Renewal** – The process of replacing the infrastructure element with new elements

**Retention Period** – Length of time that a document must be kept; starts from the point of time when a QMS document is replaced by a new or amended document

**Risk** – The probability of identified hazards causing harm, including the magnitude of that harm or its consequences.

**Risk Assessment** – An orderly methodology of identifying hazards or hazardous events that may affect the safety of drinking water and evaluating the significance of the hazard of hazardous event.

**Summary Report** – Legislated under O. Reg. 170/03, a report prepared annually that is submitted to the Owner to outline the water distribution performance throughout the previous year, no later than March 31 of each year.

**Supplier** – An organization or person that provides a product or service to assist with the operation or maintenance of the Town’s water distribution systems

**The Town** - The Town of Whitchurch-Stouffville

**Top Management** - The Director of Public Works and Chief Administrative Officer (CAO) represent the highest management level of the operating authority. The position is responsible for making decisions about the QMS and recommendations to the Owner about the Ballantrae/Musselman’s Lake and the Stouffville water distribution systems.



**Uncontrolled Document** – A copy of a QMS document outside of the locations specified in the Document Control Table

**Vendor** – A supplier of an essential service required for the operation and maintenance of the Ballantrae/Musselman’s Lake and the Stouffville water distribution systems. These include, but are not limited to, hydrant and valve suppliers, emergency contractors, potable water suppliers etc.



## **Element 1 – Operational Plan Overview**

### ***Purpose***

The Town of Whitchurch-Stouffville owns and operates two separate municipal drinking water distribution systems. The Ballantrae/Musselman's Lake water distribution system services residents and businesses in the communities of Ballantrae and Musselman's Lake. The Stouffville water distribution system services residents and businesses in the Community of Stouffville and a small rural area outside of the community of Stouffville along Highway 48 at Bloomington Road.

The Operational Plan is comprised of a compilation of documents and procedures that outlines the processes and procedures for the overall quality management of the Town's drinking water systems. The Operational Plan applies to both systems, except where noted. The Operational Plan provides the means to continually review and improve the Quality Management System (QMS) and is written to meet or exceed the requirements of the Ministry of the Environment, Conservation and Parks (MECP) Drinking Water Quality Management Standard (DWQMS), as amended.

### ***Responsibility***

Applies to all employees of the Operating Authority

### ***Procedure***

The Operational Plan is comprised of Elements that define the Quality Management System (QMS). Each Element include associated Forms and Appendices that are intended to complement the Procedure as applicable. Appendices to compliment the Operational Plan have been created as required. Appendices are identified by a Procedure Number including the label APP (i.e. QMS-APP-01-01 – QMS Activity Schedule). The Operational Plan is further supported by Standard Operating Procedures for operation and maintenance of the drinking water systems. The Standard Operating Procedures are identified with the label SOP (i.e. QMS-SOP-15-03 Watermain Flushing).

Top Management is responsible for ensuring that a QMS in place that meets the requirements of the Drinking Water Quality Management Standard (DWQMS) and for determining, obtaining or providing the resources needed to maintain and continually improve the QMS.

The Operational Plan, Appendices and the Standard Operating Procedures may reference other documents, reference material, policies and procedures that are used by Staff in the Operating Authority. These referenced materials are stated at the end of each procedure.



Scheduling of activities related to the QMS are documented in QMS-APP-01-01 – QMS Activity Schedule. This schedule is reviewed annually by the QMS Representative and updated as required.

**References**

None

**Appendices**

QMS-APP-01-01 – QMS Activity Schedule

**Forms**

None



## **Element 2 – Quality Management System Policy**

### ***Purpose***

The DWQMS requires the development of a QMS policy. The policy is the driver for the quality management system, it is a firm documented commitment demonstrating the operating authority's assurance that quality management is important.

### ***Scope***

Applies to the operation of the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems.

### ***Responsibility***

The QMS Policy applies to all employees of the Operating Authority, contractors and vendors involved with the water distribution systems.

### ***Procedure***

As the Owners and Operators of the drinking water systems, we are committed to:

- Ensuring a consistent supply of safe, high quality drinking water for our residents and businesses;
- Keeping open communication between Town Council, Staff and the Public concerning matters of drinking water quality;
- Continuous Staff development and training;
- Continuous improvement of the Quality Management System;
- Operation and Maintenance of the water distribution systems to comply with or surpass the requirements of applicable legislation and regulations;
- Maintenance of a Quality Management System that is consistent with this policy.

Endorsement of the Operational Plan by the Owner includes endorsement of the QMS Policy.

The QMS Policy is posted at the Operations Centre and on the municipal website.

### ***References***

None

### ***Appendices***

None

### ***Forms***

None





## **Element 3 – Commitment and Endorsement**

### ***Purpose***

The purpose of this Element is to ensure that the Owner and Operating Authority are committed to the implementation, maintenance and continual improvement of a Quality Management System that meets the requirements of the Drinking Water Quality Management Standard. Endorsement by the owner and top management acknowledges the need for and supports the provision of sufficient resources to maintain and continually improve the QMS.

### ***Scope***

Applies to the Quality Management System for the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems.

### ***Responsibility***

Owner  
Top Management

### ***Procedure***

The Operational Plan is endorsed by the Owner during each term of Council through a Council Resolution. Staff prepare a report to Council outlining the purpose and content of the Operational Plan with the recommendation for Council to endorse the plan for use by the Operating Authority. Council endorses the Operational Plan within the first year following the start of each new term of Council. The Owner's commitment to an effective QMS is evidenced by the resources provided during implementation and maintenance of the Operational Plan and QMS. Evidence of Council endorsement can be found on the Town's website under Council Agendas & Minutes (by year).

Element 20 documents the Management Review procedure. Top Management is responsible for determining, obtaining or providing the resources needed to maintain and continually improve the QMS, and reporting these requirements to Council. Top Management endorses the Operational Plan within the first year following the start of each new term of Council or within the first year following changes to Top Management.

Top Management's commitment to an effective QMS is evidenced by:

- a) Ensuring that a QMS is in place that meets the requirements of the DWQMS;
- b) Ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements;
- c) Communicating the QMS according to procedures, and;
- d) Determining, obtaining or providing the resources needed to maintain and continually improve the QMS.



Top Management appoints the QMS Representative whose duties include ensuring staff are made aware of all applicable legislation and regulations. The QMS Representative monitors changes made to legislation or regulations via the Environmental Bill of Rights and notifications from MECP and communicates any changes to staff.

Element 12 documents the communication procedure. Top Management ensures that all staff adhere to the procedure.

**References**

Element 12 – Communications

Element 20 – Management Reviews

Town Website: <https://whitchurch.civicweb.net/filepro/documents>

**Appendices**

QMS-APP-03-01 - Top Management Endorsement

**Forms**

None



## **Element 4 – QMS Representative**

### ***Purpose***

To identify a Quality Management System Representative and their specific responsibilities.

### ***Scope***

Not Applicable

### ***Responsibility***

Top Management

### ***Procedure***

Top Management appoints and provides authority to the Quality Management System Representative, irrespective of their other responsibilities. The authority, roles and responsibilities are provided in document QMS-APP-09-02 - Roles Responsibilities and Authorities. A notice of appointment of the QMS Representative is signed by Top Management and available in QMS-APP-04-01.

Top Management appoints the QMS Representative within the first year following the start of each new term of Council, within the first year following changes to Top Management or if the Staff position held by the QMS Representative becomes vacant, within a reasonable amount of time.

### ***References***

None

### ***Appendices***

QMS-APP-04-01 Notice of Appointment – QMS Representative  
QMS-APP-09-02 - Roles Responsibilities and Authorities

### ***Forms***

None



## **Element 5 – Document and Records Control**

### ***Purpose***

To describe the procedure for ensuring the Town of Whitchurch-Stouffville's documents and records associated with the QMS are kept current, legible, readily identifiable, retrievable, stored, protected, retained and disposed of in an appropriate manner.

### ***Scope***

This procedure applies to the management of all Quality Management System Documents, records and forms.

### ***Responsibility***

Applies to all employees of the Operating Authority

### ***Procedure***

#### ***General Information***

The documents and records contained within the Document Control Table, located in QMS-APP-05-01 and the Record Control Table, located in QMS-APP-05-02, are identified as documents and records applicable to this Quality Management System.

The Document Control Table and the Record Control Table ensures controlled document and record locations are identified and accessible to staff, internal auditors and external auditors. Controlled document and record locations are designated to allow authorized access and to prevent damage, deterioration, loss and ensure use of current documents and records.

It is the responsibility of the user to ensure that only controlled documents are used. Copies of documents located outside of designated control locations are considered uncontrolled documents and are the responsibility of the user to replace and dispose of in an appropriate manner.

#### ***Document and Form Creation***

To ensure legibility, documents and forms for use within the Operating Authority are created electronically in Microsoft Word or Excel.

The document title, Town logo and revision date are in the title block or title page of the Operational Plan, Appendices, Standard Operating Procedures and Emergency Procedures. Page X of X are in the header on all pages. Revision number and approval date of the document is in the footer on all pages.

All documents and forms created are password protected to ensure editing is made only by authorized staff. The latest version of documents and forms can be viewed, printed,



and electronically transmitted. If a document is printed from a read-only or PDF file, then the document is considered uncontrolled and not subject to revision.

File storage of digital and hard copy files shall follow the Town's approved TOMRMS system.

Review and approval authorities are outlined in the Document Control Table.

### ***Annual Document Review***

All documents outlined in the Document Control Table undergo an annual review by the QMS Representative or designate for any changes required by new legislation and/or operational practices. Scheduling of the document review is outlined in QMS-APP-01-01 - QMS Activity Schedule. Outcomes from the annual review are recorded on QMS-FRM-21-01 – Continual Improvement as evidence the review was complete.

### ***Record Creation and Storage***

The following information applies to records:

- The record body is legible, written in ink only and used to record data information. On digital forms, the Operator must type in their full name (no pull-down menus) to ensure MECP compliance;
- The name of the recorder, date and the time (if appropriate) is added when the record is created;
- The storage locations identified in the Record Control Table are designated for record storage and all hard copy records are kept in filing cabinets or approved filing boxes. File storage of digital and hard copy files shall follow the Town's approved TOMRMS system;
- Manual records are filed in a timely matter in the appropriate location. These records are kept in accordance with the record retention times outlined in the Record Control Table;
- Records are to be readily available and retrievable within one (1) business day of being requested.

All staff are responsible for ensuring that documents and records remain legible and readily identifiable.

### ***Updates and Revisions***

If an employee has a suggestion to modify an existing or create a new document or form, the QMS Representative is notified by means of an email with a detailed description of the change/new document. The need for new or updated documents or forms may also be identified through the Management Review or system audits. The QMS Representative will review all suggestions and proposed revision(s) to the QMS with the employee and Water/Wastewater Supervisor.



One member of Top Management approves changes to the Operational Plan and Appendices. Approval of changes by Top Management are communicated to the QMS Representative or designate via email.

The QMS Representative approves changes to the Standard Operating Procedures, Emergency Procedures and QMS Forms.

Any new or updated documents or forms are communicated to staff as outlined in the QMS Communications Procedure, located in Element 12 – Communications.

Updates, new documents and forms are tracked on QMS-FRM-21-01 – QMS Continual Improvement.

A revision history box located at the end of each document will track the following information:

- Version Number of document
- Date of document change
- Brief description of change

### ***Retention***

Retention of obsolete digital copies of the Operational Plan, Emergency Procedures, and Standard Operating Procedures are retained in accordance with the minimum requirements for Operational Plans (10 years). Any other QMS documents (digital or paper) are retained in accordance with the current Town of Whitchurch-Stouffville Record Retention By-Law 2009-154-RE, as amended. Refer to the QMS-APP-05-01 – Document Control Table for the location of this document.

Electronic records are only kept on the Town of Whitchurch-Stouffville's network servers. Servers are routinely backed up as per corporate policy and the requirements of the record retention policy.

Minimum retention times for all records shall be maintained as outlined in the applicable Provincial regulations. Retention times are also outlined in the Records Control Table and the Town of Whitchurch-Stouffville Record Retention By-Law 2009-154-RE, as amended. If any discrepancies exist between the Provincial regulations and the Records Control Table or By-Law, the Provincial regulation shall govern.

Documents and records are reviewed for evidence of control during each internal system audit, outlined in Element 19 – Internal Audits.

### ***Disposal of Obsolete Documents and Records***

The QMS Representative or designate collects and replaces the controlled copies of QMS documents or QMS forms. An email is circulated to staff advising of any document



or form changes. It is the responsibility of staff to replace any uncontrolled copies and destroy obsolete copies.

Obsolete digital copies of QMS documents or QMS forms outlined in QMS-APP-05-01 – Document Control Table and QMS-APP-05-02 – Record Control Table are to be deleted after the retention requirements have been met.

The obsolete QMS document or QMS Form is renamed to “OBSOLETE (QMS document/QMS form name) DATE” (i.e. OBSOLETE QMS-APP-05-01 – Document Control Table June 6, 2019.docx).

The QMS Representative or designate is responsible for moving the “OBSOLETE (QMS document/QMS form name) DATE” file to the applicable Archive folder in S:\ENVIRONMENTAL SERVICES - E\E08 Water Works.

Obsolete paper copies of QMS documents or QMS forms outlined in QMS-APP-05-01 – Document Control Table and QMS-APP-05-02 – Record Control Table are to be disposed of in an appropriate manner (recycling, shredding etc).

### **References**

Element 12 – Communications

Element 19 – Internal Audits

Town of Whitchurch-Stouffville Record Retention By-Law 2009-154-RE, as amended

### **Appendices**

QMS-APP-01-01 - QMS Activity Schedule

QMS-APP-05-01 – Document Control Table

QMS-APP-05-02 – Records Control Table

### **Forms**

QMS-FRM-21-01 – QMS Continual Improvement



## **Element 6 – Ballantrae/Musselman’s Lake and Stouffville Water Distribution Systems Description**

### ***Purpose***

The purpose of Element 6 is to provide an overview of the drinking water systems and the water sources.

### ***Scope***

Ballantrae/Musselman’s Lake and the Stouffville Drinking Water Distribution Systems.

### ***Responsibility***

Owner

Operating Authority

### ***Ballantrae/Musselman’s Lake Water Distribution System***

#### ***General Information***

The Ballantrae/Musselman’s Lake water distribution system, waterworks number WW260006737, distributes water in the communities of Ballantrae and Musselman’s Lake. This system is classified as a “Large Municipal Residential System,” Class I water distribution system, and is owned and operated by the Town of Whitchurch-Stouffville. The Town is responsible for the operation and maintenance of the distribution watermains, valves, hydrants, service connections and other water distribution appurtenances. The Ballantrae/Musselman’s Lake Water Distribution System does not include equipment that provides primary or secondary disinfection.

The performance of the Ballantrae/Musselman’s Lake water distribution system is outlined in the Ballantrae/Musselman’s Lake water distribution system Annual Report. A copy of the Annual Report is available for public viewing prior to the end of February each year in accordance with O. Reg. 170/03. In addition, a Summary Report is communicated to the Owner in the form of a council report prior to the end of March each year. Both reports are available for Public viewing on the Municipal website (<http://www.townofws.ca/en/residents/water-quality.asp>).

The procedure to monitor chlorine residuals for the Ballantrae/Musselman’s Lake Water Distribution System to ensure disinfection residuals are maintained is located in Element 16 – Sampling, Testing and Monitoring.

Figure 1 contains a schematic of the Ballantrae/Musselman’s Lake drinking water distribution system.





### ***York Region System Supply and Treatment***

The York Region owns, operates and maintains three (3) groundwater wells and treatment systems which supply water to the Ballantrae/Musselman's Lake water distribution system. The Region also owns and operates an elevated tank located on Ninth Line north of Bloomington Road. Raw water information is available from the Region of York. The treated water provided by the York Region to the Ballantrae/Musselman's Lake water distribution system is not connected to any other municipal systems.

The York Region treats the water before the water enters the distribution system. Water treatment for the Ballantrae/Musselman's Lake water supply consists of disinfection through chlorination and the addition of sodium silicate. Sodium silicate is added to control the presence of iron. Secondary disinfection is provided by free chlorine residual. Details of the treatment processes are available from the York Region.

### ***Operational Challenges***

Within the community there is a large private condominium serviced by the municipal drinking water system. The private condominium has numerous residents that occupy their homes on a seasonal basis, and therefore the system could have the potential for low chlorine residuals due to decay of the chlorine during periods of reduced demands in the winter. Additional watermain flushing is required to maintain levels of chlorine between November and April.

### ***Stouffville Water Distribution System***

#### ***General Information***

The Stouffville water distribution system, waterworks number WW260003162, supplies water to the Community of Stouffville and a portion of rural area on Highway 48 at Bloomington Road. This system is classified as a "Large Municipal Residential System," Class I water distribution system, and is owned and operated by the Town of Whitchurch-Stouffville. The Town is responsible for the operation and maintenance of the distribution watermains, valves, hydrants, service connections and other water distribution appurtenances. The Ballantrae/Musselman's Lake Water Distribution System does not include equipment that provides primary or secondary disinfection.

The performance of the Stouffville water distribution system is outlined in the Stouffville water distribution system Annual Report. A copy of the Annual Report is available for public viewing prior to the end of February each year in accordance with O. Reg. 170/03. In addition, a Summary Report is communicated to the Owner in the form of a council report prior to the end of March each year. Both reports are available for Public viewing on the Municipal website (<http://www.townofws.ca/en/residents/water-quality.asp>).



The procedure to monitor chlorine residuals for the Stouffville Water Distribution System to ensure disinfection residuals are maintained is located in Element 16 – Sampling, Testing and Monitoring.

Figure 1 contains a schematic of the Stouffville drinking water distribution system.

### ***York Region System Supply and Treatment***

The York Region owns, operates and maintains six (6) groundwater wells and treatment systems which supply water to the Stouffville water distribution system. The Region also owns and operates two (2) pressure booster pumping stations, three (3) underground reservoirs, two (2) elevated storage tanks and the water transmission system associated with the Stouffville well water supply.

In addition to the Region well water supply, treated water is purchased from the City of Toronto and Region of Peel Lake Ontario based supply. The Region owns and operates the York Water System, which includes a network of underground reservoirs and water transmission systems associated with the lake-based supply.

The York Region treats the water before the water enters the distribution system from the well supplies. Water treatment consists of disinfection through chlorination, and the addition of sodium silicate. Sodium silicate is added to control the presence of iron. Secondary disinfection is provided by free chlorine residual.

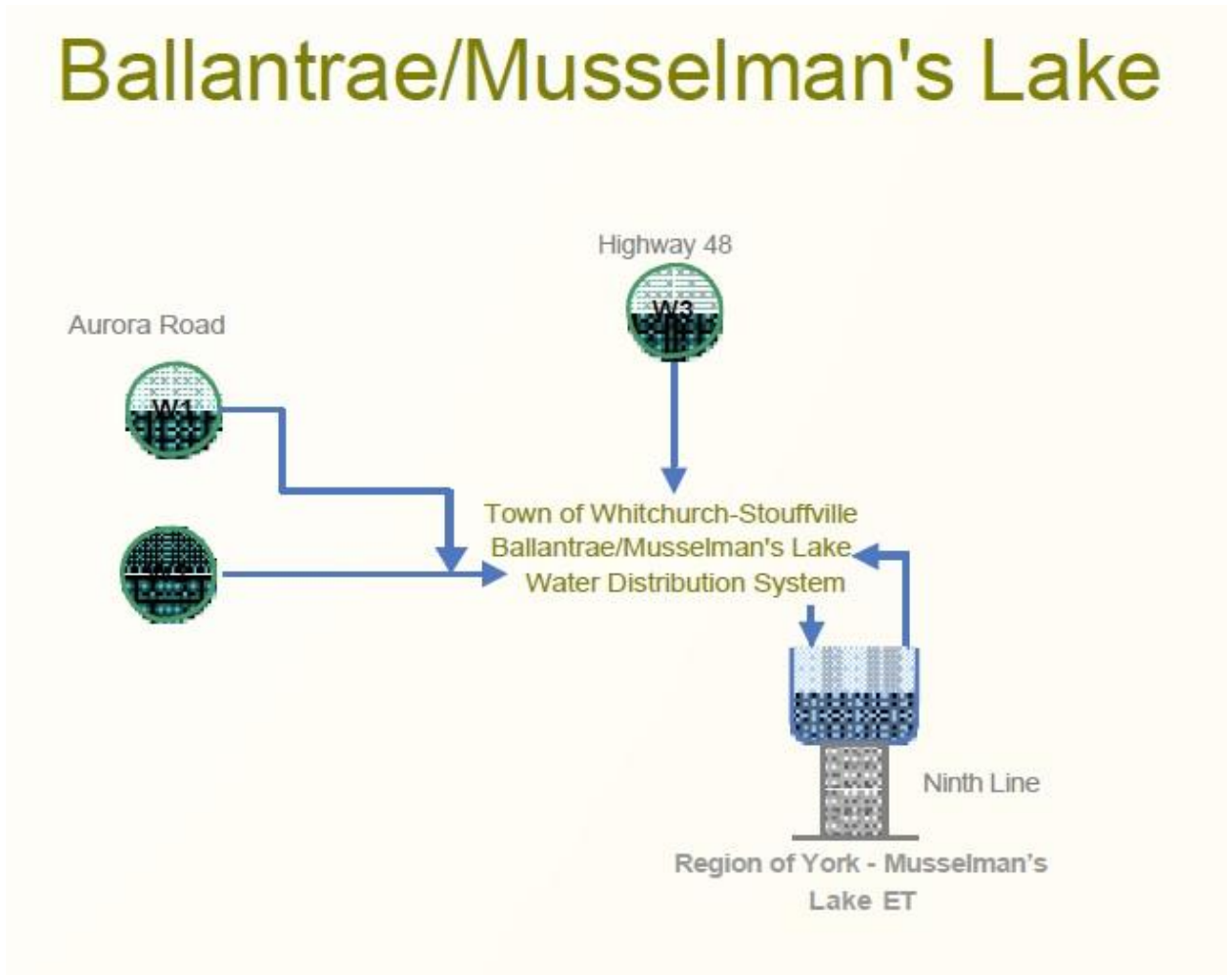
The Region converts the lake-based supply from a chloraminated system to a free chlorine residual system for secondary disinfection at the McCowan Road reservoir. Details of the treatment processes are available from the York Region.

### ***Pressure Zones***

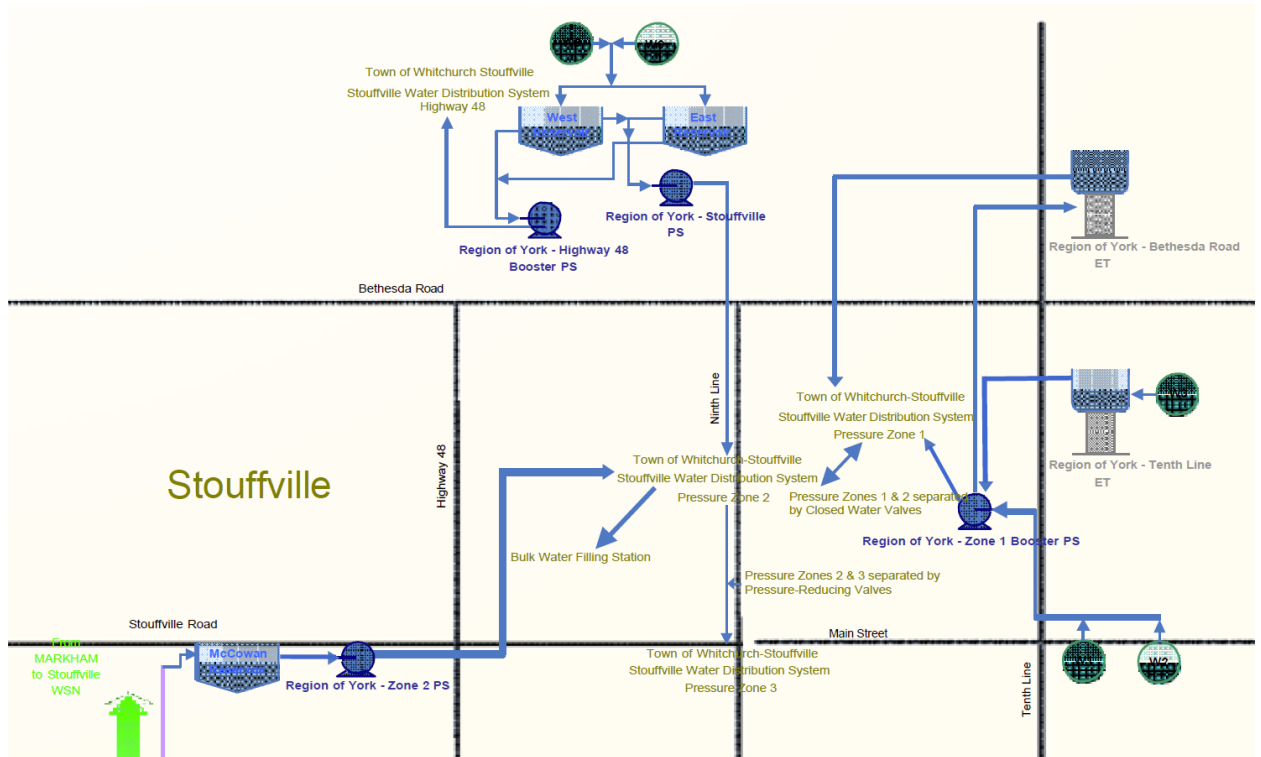
The Stouffville water distribution system consists of three (3) pressure zones. Pressure Zone 1 and Pressure Zone 3 are relatively small zones located in the north east and south west quadrants of the distribution system respectively. Pressure Zone 2 is the largest zone which is situated in the central part of town. Closed watermain valves isolate zones 1 and 2, and pressure reducing valves control zones 2 and 3. Details for the current pressure zone boundaries are available in the Town's internal GIS system, WSMAPS.

The rural area along Highway 48 is within its own pressure zone and is not associated with the rest of the system.

Figure 1: Ballantrae/Musselman's Lake Water Distribution System



**Figure 2: Stouffville Water Distribution System**



**References**

Element 16 – Sampling, Testing and Monitoring

**Appendices**

QMS-APP-06-01 – Subject System Description Form – Ballantrae Musselman’s Lake Water Distribution System

QMS-APP-06-02 – Subject System Description Form – Stouffville Water Distribution System

**Forms**

None



## **Element 7 – Risk Assessment**

### ***Purpose***

To document the procedure used to complete a risk assessment for the drinking water system. The risk assessment process will:

- identify potential hazardous events and associated hazards
- assess and rank the risks associated with the hazards
- identify control measures to address the hazards
- identify critical control points within the drinking water system
- identify a method to verify the risk assessment validity and assumptions at least once per calendar year
- ensure a risk assessment is conducted at least once every three years
- consider the reliability and redundancy of the equipment

### ***Scope***

Applies to the operation of the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems.

### ***Responsibility***

Risk Assessment Team

- Director of Public Works
- Manager of Operations
- Water/Wastewater Supervisor
- Operations Technologist
- Minimum two (2) Certified Operators
- Others deemed necessary

### ***Procedure***

#### ***Annual Review Process***

At least once per calendar year, or following a major process change, the QMS Representative facilitates a review of the currency of the information and validity of the assumptions used in the risk assessment process for the drinking water system. This is undertaken by the Risk Assessment Team. The QMS Representative shall ensure that all members of the Risk Assessment Team are available and present at the annual review.

When reviewing the currency of the risk assessment information, the following may be considered:

- process changes;
- reliability and redundancy of equipment;
- emergency situations;
- critical control point deviations;



- QMS non-conformances related to standard operating procedures.

**Risk Assessment Process**

The Risk Assessment Team assembles and conducts a new risk assessment every three (3) years. Scheduling is outlined in the QMS-APP-01-01 - QMS Activity Schedule. The Risk Assessment Team identifies the potential hazards (biological, chemical, physical, radiological) and hazardous events which could adversely affect the Town’s ability to provide safe drinking water to its customers. The Risk Assessment Team also considers potential hazardous events and associated hazards as identified in the MECP document titled Potential Hazardous Events for Municipal Residential Drinking Water Systems.

As the first step of the risk assessment, the Risk Assessment Team identifies, reviews and assesses potential hazards and hazardous events associated with each of the water distribution systems as they affect water quality. The following are to be identified for each hazard or hazardous event:

- Monitoring
- Control measures
- Available emergency procedures or contingency plans

The risk assessment team ranks the risk associated with the hazards and hazardous events on the basis of likelihood, severity and detectability.

**Table 1: Ranking of Hazards**

<b>Rank</b>	<b>Likelihood</b>	<b>Rank</b>	<b>Severity</b>	<b>Rank</b>	<b>Detectability</b>
<b>1</b>	<b>Rare</b> May occur in exceptional circumstances Has not occurred in the past	<b>1</b>	<b>Insignificant</b> Insignificant impact Little public exposure Little or no health risk	<b>1</b>	<b>Very Detectable</b> Visual
<b>2</b>	<b>Unlikely</b> Historically has occurred less than once every 5-10 years	<b>2</b>	<b>Minor</b> Limited public exposure Minor health risk	<b>2</b>	<b>Moderately Detectable</b> Casual observation Ad-hoc inspection
<b>3</b>	<b>Possible</b> Has occurred or may occur once or more a year	<b>3</b>	<b>Moderate</b> Minor public exposure Minor health risk	<b>3</b>	<b>Normally Detectable</b> Visually detectable on routine inspection



<b>4</b>	<b>Likely</b> Has occurred or may occur on a monthly or more	<b>4</b>	<b>Major</b> Large population at risk Difficult to manage	<b>4</b>	<b>Poorly Detectable</b> Visually detectable but not inspected on a regular basis
<b>5</b>	<b>Very Likely</b> One or more occurrences on a monthly or more frequent basis	<b>5</b>	<b>Catastrophic</b> Major impact for large population Complete failure of systems	<b>5</b>	<b>Undetectable</b> Cannot detect

For each potential hazard or hazardous event, the control measures are identified along with a total risk ranking. Critical Control Points (CCPs), the Critical Control Limits and the associated methods of monitoring critical limits and responding to deviations are identified if applicable. CCPs are essential steps or points in the subject system where a control is applied to prevent or eliminate a drinking water health hazard, or to reduce it to an acceptable level.

The total risk rating is determined by adding together the ranking for likelihood, severity and detectability from Table 1. A higher number translates to a greater risk to the water distribution systems. All potential hazards and hazardous events which have an overall risk rating equal to or greater than 7 and can be controlled are considered a CCP. For each potential hazard or hazardous event with a risk ranking equal to or greater than 7 and is not a CCP due to lack of control, an associated contingency procedure or response shall be implemented. The Town’s minimum CCP includes regulatory sampling.

The outcomes of the risk assessment for the Town of Whitchurch-Stouffville are outlined in the Risk Assessment Outcomes, located in QMS-APP-08-01. Separate ratings shall be determined for the Ballantrae/Musselman’s Lake and Stouffville water distribution systems.

**References**

MECP Potential Hazardous Events for Municipal Residential Drinking Water Systems, Element 8 – Risk Assessment Outcomes

**Appendices**

- QMS-APP-01-01 - QMS Activity Schedule
- QMS-APP-08-01 - Risk Assessment Outcomes

**Forms**

None



## **Element 8 – Risk Assessment Outcomes**

### ***Purpose***

To document the outcomes of the risk assessment for the drinking water systems and identifying the Control Points (CP) and Critical Control Points (CCP).

### ***Scope***

Applies to the operation of the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems.

### ***Responsibility***

Risk Assessment Team

- Director of Public Works
- Manager of Operations
- Water/Wastewater Supervisor
- Operations Technologist
- Minimum two (2) Certified Operators
- Others deemed necessary

### ***Procedure***

The risk assessment outcomes and the identified CCPs are summarized in QMS-APP-08-01– Risk Assessment Outcomes. QMS-APP-08-01 – Risk Assessment Outcomes is updated following the Annual Review (as required) and the 3-year Review of this element.

All deviations from the critical control limits will be reported by the Operators to the Water/Wastewater Supervisor. The report may be written and/or verbal, and will include information relating to the condition or response deviated, the location, the date and time that the deviation was noted, the expected duration and reason for deviation. The Water/Wastewater Supervisor will record all CCP deviations on QMS-FRM-21-01 - QMS Continual Improvement, which will be maintained as an electronic document.

The Water/Wastewater Supervisor, the Manager of Operations and/or the Operations Technologist will monitor the form to ensure that all deviations are returned to normal operating conditions as soon as reasonably possible. The person verifying the information shall record the date that service was returned to normal and their initials as confirming the item is closed.

The deviations will be reported to Top Management during the Management Review process.

### ***References***

None





**Appendices**

QMS-APP-08-01 – Risk Assessment Outcomes

**Forms**

QMS-FRM-21-01 - QMS Continual Improvement



## **Element 9 – Organizational Structure, Roles, Responsibilities, Authorities**

### ***Purpose***

To document a procedure ensuring that the Owner, Operating Authority, and Top Management are defined. The organizational structure of the Operating Authority is described. The roles, responsibilities and authorities of Top Management and key positions within the Operating Authority are identified.

### ***Scope***

Applies to the staff of the Operating Authority

### ***Responsibility***

Top Management

### ***Procedure***

#### ***Organizational Structure***

The organizational structure of the Owner and the Operating Authority is presented in QMS-APP-09-01 - QMS Organizational Structure.

The Owner of the drinking water system(s) is the Corporation of the Town of Whitchurch-Stouffville. The Mayor and Council approve recommendations from Top Management on behalf of the Owner.

The Operating Authority for the drinking water system(s) is the Town of Whitchurch-Stouffville Public Works Department. Top Management of the Operating Authority is comprised of the Chief Administrative Officer (CAO) and the Director of Public Works. All operational activities related to the drinking water distribution system(s) are performed by or under the supervision of Public Works staff. Other duties related to alteration, extension of the drinking water systems and administration and management of the drinking water system(s) are provided by staff within Town as outlined in in QMS-APP-09-02- Roles, Responsibilities and Authorities.

The QMS Representative is appointed by Top Management, and irrespective of other responsibilities, shall have specific QMS related responsibilities as outlined in QMS-APP-09-02- Roles, Responsibilities and Authorities. The appointment letter for the QMS Representative is included in procedure Element 4 – QMS Representative.

QMS-APP-09-02 - Roles, Responsibilities and Authorities provides a summary of the overall roles, responsibilities and authorities related to the provision of safe drinking water in the drinking water system.



**References**

Element 4 - QMS Representative

**Appendices**

QMS-APP-09-01 – QMS Organizational Structure

QMS-APP-09-02 – Roles, Responsibilities and Authorities and Competencies

**Forms**

None



## **Element 10 – Competencies**

### ***Purpose***

To document a procedure that identifies:

- a) Competencies required for personnel performing duties directly affecting drinking water quality;
- b) Activities to develop and maintain competencies for personnel performing duties directly affecting drinking water quality; and
- c) Activities to ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water.

### ***Scope***

Personnel performing duties directly affecting drinking water quality within the Operating Authority

### ***Responsibility***

Director of Public Works  
Manager of Operations  
Manager of Capital Projects

### ***Procedure***

#### ***Competencies***

The level of competency required for personnel with duties affecting drinking water quality are identified in QMS-APP-09-02 – Roles, Responsibilities, Authorities and Competencies.

Job descriptions are developed by the Director and Manager in conjunction with Human Resources. All job descriptions are reviewed periodically for currency. The job descriptions include identification of responsibilities and education and experience requirements.

Competency is demonstrated by having appropriate education, training, skills and experience required for each relevant position.

There is a probationary period for new or transferred employees and at the end of the probationary period the Director or Manager of each department evaluates the employee's competency as outlined in Town procedure AP15 – Performance Review.

Competency for all staff is reviewed at least annually during performance reviews conducted by the Manager or Supervisor.



### ***Training Needs Identification***

The Manager of Operations, Water/Wastewater Supervisor and Operations Co-Ordinator identify training needs for employees performing duties directly affecting drinking water quality based on the identified competencies.

The need for training to ensure that competency is maintained may also be determined based on the following:

- Comparison of the person's skills and abilities with the requirements of the job description and qualifications, in particular for new, temporary and transferred employees;
- Corrective action (e.g., resulting from internal audits or non-conformances) if the need for training is found to be a root cause (Element 21 – Continual Improvement);
- Changes due to updates to the risk assessment outcomes (Element 8 – Risk Assessment Outcomes); and
- Changes in legislative/regulatory requirements.

### ***Training Plan***

The Manager of Operations, Water/Wastewater Supervisor and Operations Co-Ordinator meet annually to plan out the training for various positions affecting drinking water quality for the next year. They refer to the required competencies, the completed training from previous years, and other currently available courses to develop the training plan for that year. QMS-APP-09-02 – Roles, Responsibilities, Authorities and Competencies is a guide for the level of competency that staff should obtain and provides the Manager with some guidance on the type of courses that staff may need to take in order to achieve and/or maintain the level of competency. The Manager of Operations or designate ensure employee competencies are met.

### ***Training for Licensed Water Operators***

For Licensed Water Operators the Training Plan addresses the completion of mandatory courses, number of CEU's and on-the-job training hours. The Manager of Operations or designate reviews the training schedule twice per year to determine additional requirements (e.g., CEUs, on-the-job training) and to assist in monitoring the required training hours for positions with duties directly affecting the drinking water quality.

Records of all completed training is entered in the Staff Training database. Copies of operators' current licences and certificates are maintained on the Town's computer network. Training Records are maintained as per Element 5 - Document and Records Control.



### **Employee DWQMS Orientation**

The QMS Representative ensures a Drinking Water Quality Management Standard (DWQMS) awareness session is provided to new employees or newly transferred employees to Public Works within 6 months of their first day of employment. The following types of information are included in the DWQMS awareness session:

- Introduction to management systems;
- The role of the QMS Representative;
- Review of the Operational Plan, Standard Operating Procedures and Emergency Procedures; and
- Review of QMS policy and ensuring that personnel are aware of the relevance of their duties and how they affect safe drinking water.

### **Training Methods**

Competency requirements can be satisfied through the use of:

- in-house training;
- off-site or on-line training;
- attendance at seminars/conferences;
- presentations by subject matter experts;
- on-the-job training;
- job shadowing.

Once staff have demonstrated a sufficient level of competency, they can perform that task without direct supervision.

### **Effectiveness of Training**

When external trainers conduct courses, the trainer may review and verify training effectiveness through various means (e.g., examinations or quizzes are undertaken for CEU courses). If the employee is knowledgeable and able to demonstrate the skills, then the external trainer often issues a certificate to indicate the training was effective.

When internal training courses are conducted, the Manager and/or Supervisor monitors the performance of staff following completion of the course to determine the effectiveness of the training. In addition, the person setting up the training will ask the instructor to provide feedback on the trainee's understanding of the information.

Training gaps may be identified through the Continual Improvement process (Element 21) and documented on QMS-FRM-21-01 - QMS Continual Improvement. To address any identified training gaps, the Manager is responsible for ensuring the training is completed, competency is achieved and reported to the QMS Representative.

### **References**

Job Descriptions  
AP15 – Performance Review



Training Records  
Element 5 – Document and Record Control  
Element 8 – Risk Assessment Outcomes  
Element 21 – Continual Improvement

**Appendices**

QMS-APP-09-02 – Roles, Responsibilities, Authorities and Competencies

**Forms**

QMS-FRM-21-01 - QMS Continual Improvement



## **Element 11 – Personnel Coverage**

### **Purpose**

To document a procedure for ensuring that sufficient personnel meeting competency requirements are available for duties affecting water quality.

### **Scope**

This procedure is applicable to all drinking water activities for which the Town is responsible for as Owner and Operating Authority of the drinking water distribution systems.

### **Responsibility**

Top Management  
Manager of Operations  
Water/Wastewater Supervisor  
Transportation Supervisor

### **Procedure**

#### ***Regular Hours***

Regular working hours for Operators, including the Water/Wastewater Supervisor are 7:30 am to 4:00 pm Monday to Friday, excluding statutory holidays.

The Water/Wastewater Supervisor and Transportation Supervisor ensure that qualified staff are available for each shift and ensure sufficient coverage of duties, taking into account scheduled vacations or sick time. The policy for CUPE staff coverage is outline in the Public Works Procedure – C.U.P.E. Personnel Coverage.

#### ***On-Call-Operator***

The On-Call Operator schedule is prepared by the Manager of Operations or designate twice per year. All Public Works Roads & Water/Wastewater Operators are assigned to On-call duties. The On-Call Operator is equipped with a cell phone and is required to be available outside regular working hours to respond to emergencies.

When the assigned On-Call-Operator does not have a Drinking Water Operator Certificate, Class 1 or higher, the On-call Operator must call a licenced Water Operator to respond to duties in the drinking water systems. Licensed Operators are clearly identified on the call-out list.

The Town's Centralized Customer Service Centre (CCSC) receives calls from residents/businesses and distributes them to appropriate staff members during regular business hours.





Events requiring Operator attendance taking place outside of regular working hours are called into the Town of Whitchurch-Stouffville and received by an after-hours answering service. The answering service will call the On-Call Operator and provide details of the event. The On-Call Operator responds to the event following Standard Operating Procedures or Emergency Procedures as may be appropriate.

QMS-SOP-11-01 – On-Call-Operator Paging Procedure describes the notification and response of the On-Call-Operator in the event of an emergency outside regular working hours.

### ***Overall Responsible Operator***

The Overall Responsible Operator (ORO) must hold a certificate equal to or higher than the class of the subsystem. The Town of Whitchurch-Stouffville has designated the Public Works Department's Water/Wastewater Supervisor as the ORO for the Town's subsystems.

The Water/Wastewater Supervisor shall issue an email for every absence (i.e. vacation, lieu, medical) naming an Acting Water/Wastewater Supervisor. The email will include but is not limited to:

- Dates the ORO will be absent;
- Acting Water/Wastewater Supervisor during absence.

The memo shall be emailed to the Public Works Department and Customer Service. An acting ORO will only be assigned should the ORO be absent exceeding the time periods stated in O.Reg. 128/04 - Certification of Drinking Water System Operators and Water Quality Analysts.

In the event an acting ORO is designated, they must hold a certificate that is applicable to the classification type of the Town's subsystems, or that is not more than one (1) class lower than the Town's subsystem classification. An Operator-in-Training cannot be designated as an acting ORO.

Duties of the ORO are outlined in the MECP document Overall Responsible Operator vs. Operator-in-Charge, located at <https://www.ontario.ca/page/overall-responsible-operator-vs-operator-charge> as amended.

### ***Operator In Charge***

The Operator(s) in Charge (OIC) must hold a certificate equal to or higher than the class of the subsystem. Operator-in-Training cannot be designated as an OIC. The Town of Whitchurch-Stouffville has designated all Licensed Operators as OIC.

An OIC is authorized to:



- Set operational parameters for the subsystem or for a process that controls the effectiveness or efficiency of the subsystem; and
- Direct or instruct other operators in the subsystem to set such operational parameters.

An OIC shall:

- Take all steps reasonably necessary to operate the processes within their responsibility in a safe and efficient manner in accordance with the relevant operations manuals;
- Ensure that the processes within their responsibility are measured, monitored, sampled and tested in a manner that permits them to be adjusted when necessary;
- Ensure that records are maintained of all adjustments made to the processes within his or her responsibility.
- Ensure that all equipment used in the processes within his or her responsibility is properly monitored, inspected, tested and evaluated and that records of equipment operating status are prepared and available at the end of every operating shift.
- Record keeping by the OIC shall comply with section 27 of O. Reg. 128/04.

Public Works assigns an On-Call Operator outside of regular business hours and on statutory holidays on a rotating schedule. When the assigned On-Call-Operator does not have a Drinking Water Operator Certificate, Class 1 or higher, the On-call Operator must call a licenced Water Operator to respond to duties in the drinking water systems. The On-call Operator has a list of available Licensed Operators. The Licensed Operator responding to the emergency is the designated as the OIC. The OIC shall record this information on their timesheet and in the system logbook.

Duties of the OIC are outlined in the MECP document Overall Responsible Operator vs. Operator-in-Charge, located at <https://www.ontario.ca/page/overall-responsible-operator-vs-operator-charge> as amended.

### ***Administration Staff***

Personnel coverage is governed by the Town of Whitchurch-Stouffville administrative procedures for attendance and absences. Directors and Managers within each department are responsible to ensure personnel coverage meet the operational requirements of the Town.

### **References**

O.Reg. 128/04 - Certification of Drinking Water System Operators and Water Quality Analysts

Public Works Procedure – C.U.P.E. Personnel Coverage.

QMS-SOP-11-01 – On-Call-Operator Paging Procedure



**Appendices**

None

**Forms**

None



## **Element 12 – Communications**

### **Purpose**

To document a procedure for communication that describes how relevant aspects of the Quality Management System are communicated between Top Management and:

- the Owner;
- the Operating Authority personnel;
- Suppliers; and
- the Public.

This procedure does not include communication procedures used in Emergency situations.

### **Scope**

Communication between Top Management and:

- the Owner;
- the Operating Authority personnel;
- Suppliers; and
- the Public.

### **Responsibility**

Top Management

QMS Representative

### **Procedure**

#### ***Communication of QMS Policy***

The QMS Policy is made available to Operating Authority personnel, the public and the Owner:

- on the Town`s website,
- posted in the Town`s Municipal Office and Operations Centre
- is available to the public upon request, and
- to all suppliers of Essential Supplies and Services

#### ***Communication to and from Owner (Council)***

Communication to Council from Top Management is through the use of staff reports, information memos or presentations to Council following established corporate communication protocols. Communication during emergency situations may be made directly between Top Management and the Mayor.

A current copy of the Operational Plan is provided to Council for endorsement at the beginning of each term of Council or after a major revision to the Operational Plan.



Council can communicate directly to Top Management during Council Meetings. The CAO, and Director of Public Works (or their designate) are present at all Council and Committee meetings. The CAO may communicate directly with the Mayor and the members of Council separately from Committee meetings. Formal direction to staff is normally received from Council through the adoption of recommendations received from the Committee or through a separate Resolution of Council.

### ***Communication to and from Operating Authority Personnel***

Top Management communicates to and from the Operating Authority personnel (which includes the QMS Representative) through the following tiered approach:

- Top Management to the QMS Representative through various management meetings;
- QMS Representative is then responsible for relaying applicable information to staff, often in regular held staff meetings, internal memorandums or emails.

The QMS Representative monitors changes made to legislation or regulations via the Environmental Bill of Rights and notifications from MECP and communicates any changes to staff.

Other forms of communication between Top Management and Operating Authority personnel include:

- Staff Administrative Meetings
- written documentation, which is circulated to staff,
- emails,
- verbal discussions,
- training sessions,
- circulation of applicable procedures and other QMS documentation, and
- posting of material on bulletin boards.

### ***Communication to and from Suppliers***

Communication to Suppliers is done through the Manager of Operations, Supervisors and Procurement Coordinator through the issuance of tenders, contracts and/or purchase orders to suppliers. The QMS Policy and copies of specific standard operating procedures are provided to Suppliers of Essential Suppliers and Services along with the purchase orders, contracts or tender documents as required.

Communication from Suppliers to Top Management (via Town staff) can be through written correspondence, email, phone calls, and the procurement process.

Operating Authority personnel contact suppliers directly if problems occur with the supplier. For ongoing issues, the Town's Purchasing Coordinator will be contacted to deal with ongoing supplier related problems.



**Communication to and from York Region**

Communication to and from York Region for water supply and system operations is done through the Director of Public Works, Manager of Operations, Supervisors, and Operations Technologists. Staff meet regularly through various committees and formal meetings. Supervisors and licensed water operators communicate via telephone and email for daily operational requirements. The inter-municipal communication protocol is outlined in QMS-SOP-12-01 – Inter-Municipal Communication Protocol.

**Communication to and from the Public**

All non-emergency communication (related to water issues) to the public is achieved through:

- newspaper notification and/or media advisories;
- social media;
- hand delivered letters;
- posting on the Town’s website (e.g. annual reports, Policy);
- Reports to Committee/Council;
- Public Meetings.

The public can communicate water related issues/queries through:

- calling the Town’s main telephone;
- emails through website;
- letters; and
- faxes.

**References**

QMS-SOP-12-01 – Inter-Municipal Communication Protocol

**Appendices**

None

**Forms**

None



## Element 13 – Essential Supplies and Services

### **Purpose**

To document a procedure ensuring the quality of essential supplies and services affecting drinking water quality. The procedure shall include identification of these supplies and services and a means to ensure their procurement.

### **Scope**

Procurement of supplies and services that may affect drinking water quality.

### **Responsibility**

- Manager of Operations
- Manager of Engineering
- Manager of Capital Projects
- Water/Wastewater Supervisor
- Operations Technologists

### **Procedure**

#### ***Identification of Supplies & Services and Requirements***

Table 13-01 Essential Supplies and Services for drinking water identifies the essential supplies and services critical to the provision of safe drinking water. The table provides a description of the Procurement of Supplies or Services including:

- how availability is ensured, when required
- what requirements are needed to ensure quality of supply or service

**Table 13-01 - Essential Supplies and Services**

<b>Essential Supply or Service</b>	<b>Procurement of Supplies or Services</b>	<b>Quality Requirements</b>
repair clamps, valves, hydrants, pipes, main stops, material (e.g., pipe fittings, gravel & sand)	<ul style="list-style-type: none"> <li>• Limited inventory on hand</li> <li>• Inventory re-stocked by Supervisor or Lead Hand from local suppliers that have full inventory of all standard water system supplies.</li> <li>• Operators notify Supervisor if stock or product is taken/ used from inventory</li> <li>• 24 hour access to sub-</li> </ul>	<ul style="list-style-type: none"> <li>• Products on the Approved Materials List must meet the requirements for use in potable water systems (applicable AWWA, CSA, and NSF standards)</li> <li>• Products not listed on the Approved Products List may be used at the discretion of the Supervisor provided</li> </ul>



	<p>contractors with access to most materials</p> <ul style="list-style-type: none"><li>• Materials may be available by contacting local municipalities</li></ul>	<p>they meet the applicable standard</p>
pH readers	<ul style="list-style-type: none"><li>• pH meters on hand</li><li>• Access to local suppliers for delivery within 5 business days</li><li>• Meters may be available from local municipalities in an emergency situation</li></ul>	<ul style="list-style-type: none"><li>• Rush delivery available</li><li>• Industry standard devices used</li></ul>
Chlorine residual test kits	<ul style="list-style-type: none"><li>• Colorimeters on hand</li><li>• Access to local suppliers for delivery within 5 business days</li></ul>	<ul style="list-style-type: none"><li>• Rush delivery available</li><li>• Industry standard devices used</li></ul>
Chlorine Residual Test Kit Reagents	<ul style="list-style-type: none"><li>• Supply of reagents kept on hand</li><li>• Consumables ordered by the Supervisor as required</li><li>• Access to local suppliers for delivery within 5 business days</li></ul>	<ul style="list-style-type: none"><li>• Only reagents approved for use by the test kit manufacturer are used</li><li>• Supervisor monitors product expiry dates</li></ul>
Test kit calibration service (handhelds)	<ul style="list-style-type: none"><li>• Colorimeters, pH kits</li><li>• Calibration service performed by manufacturer's own technicians</li></ul>	<ul style="list-style-type: none"><li>• Meets manufacturer/equipment specifications</li></ul>
Tools to open/close valves	<ul style="list-style-type: none"><li>• Each truck is fully stocked with various lengths/types as required</li><li>• Extras kept at Operations Centre for emergencies and replenished if needed</li></ul>	<ul style="list-style-type: none"><li>• Products procured from reputable suppliers</li><li>• Products designed for individual Operators needs</li></ul>





	<ul style="list-style-type: none"><li>• Purchased through local suppliers</li></ul>	
liquid chlorine (12%)	<ul style="list-style-type: none"><li>• Kept in stock at the Operations Centre</li><li>• Obtained from local suppliers</li></ul>	<ul style="list-style-type: none"><li>• AWWA/NSF approved chemical</li><li>• Supervisor monitors product expiry date</li></ul>
dechlorinating pucks	<ul style="list-style-type: none"><li>• Kept in stock at the Works Yard</li><li>• Obtained from local suppliers</li></ul>	<ul style="list-style-type: none"><li>• Supervisor monitors product expiry dates</li></ul>
vehicles & equipment	<ul style="list-style-type: none"><li>• Town as a fleet of vehicles &amp; equipment available to staff dependent on job requirements</li></ul>	<ul style="list-style-type: none"><li>• Maintenance performed during regular business hours</li></ul>
Lab services	<ul style="list-style-type: none"><li>• Service agreement with York-Durham Environmental Lab</li><li>• Lab has contingency plans for work disruptions</li><li>• The York-Durham Environmental Lab is jointly owned and operated by the Regional Municipalities of York and Durham. The Town has access to the lab as a local municipality within York Region</li></ul>	<ul style="list-style-type: none"><li>• MECP Accredited (annually provide accreditation acknowledgement)</li></ul>
Leak detection service	<ul style="list-style-type: none"><li>• Access to local service providers when required</li></ul>	<ul style="list-style-type: none"><li>• Service evaluated by the Supervisor</li></ul>
Back flow preventer device testing and certification	<ul style="list-style-type: none"><li>• Local service providers</li></ul>	<ul style="list-style-type: none"><li>• Certified testers (backflow)</li></ul>
Repair contractor	<ul style="list-style-type: none"><li>• Contractor is retained through a Tendered Contract</li><li>• Contractor has crews available on standby</li></ul>	<ul style="list-style-type: none"><li>• Service provided by contractor is supervised by the Operator in Charge</li></ul>



	24/7, 365 days a year	<ul style="list-style-type: none"> <li>•Service provided by the contractor is evaluated annually by the Supervisor</li> <li>•Contractor follows the Town’s Standard Operating Procedures</li> <li>•Contractors are selected based on experience and ability</li> </ul>
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**Procurement Process**

The Town’s Procurement By-Law 2017-084-FI describes the methods by which supplies and services are purchased.

The Town's Engineering Design Criteria and Standard Details includes a listing of approved products and specifications.

**Routine Purchases**

Routine purchases are procured by the Water/Wastewater Supervisor. These purchases are generally from approved product lists or established suppliers that meet the Town’s criteria.

Most supplies required for emergency and routine repairs are kept in stock (e.g., repair clamps, odd-sized pipes, etc.) at the Operations Centre.

**Specialized Purchases**

The Public Works Department develops specifications and/or identifies certification requirements of products for supplies and services prior to issuance of Tenders, RFPs, etc. A copy of the relevant procedures/specifications and general information regarding the presence of a QMS are included in the appropriate contractual agreement.

**Evaluation Process**

A contact list for Essential Supplies and Services identifying approved suppliers and contractors is maintained. Annually the Manager of Operations and Water/Wastewater Supervisor updates the contact list.

The review of the Essential Supplies and Services list is recorded on form QMS-FRM-13-01 – Essential Supplier Checklist. The review includes, but not limited to, the following:

- Determination whether the supplier was utilized in the past year;
- Was the service/product delivered in a timely manner;
- Supplier performance throughout the review period;



- Adequacy of contractual arrangements.

Any issues related to a supplier are documented as they occur and included with the annual review. Continual deficiencies in quality of supplies or services may result in the supplier being removed from the Essential Supplies and Services List.

### **Emergency Purchases**

“Emergency (Extraordinary) Procurement” means an event or circumstance where the purchase of construction, Goods and/or Services requires immediate action to prevent or alleviate serious delay, a threat to staff and/or public health, safety or welfare, the disruption of essential Services or damage to public property or any other expenditure that is necessary to respond to any emergency of the Town or as required under the provincial Emergency Management and Civil Protection Act (as amended).

For the provision of supplies and/or services during emergency situations the OIC and/or ORO can contact appropriate suppliers and/or contractors from the approved list.

During emergency situations when a contractor is used that is not under contract to the Town, the Manager contacts the Director to inform them about what was done and the approximate costs. Directors are responsible for ensuring that Emergency Purchase, Sole Source and Single Source documents are filled out and supplied to the appropriate internal staff according to Schedule B Summary of Thresholds of Procurement of the Town’s current Procurement By-Law prior to the issuance of a Purchase Order.

During declared emergencies, the purchase process is at the discretion of the Mayor, Treasurer and/or CAO given the circumstances.

### **References**

Procurement By-Law 2017-084-FI  
Engineering Design Criteria and Standard Details

### **Appendices**

QMS-APP-13-01 – Essential Supplies and Services Contact List

### **Forms**

QMS-FRM-13-01 – Essential Supplier Checklist



## **Element 14 – Review and Provision of Infrastructure**

### ***Purpose***

To describe the annual review process to determine the adequacy of the infrastructure necessary to operate and maintain the drinking water system and to determine if the infrastructure is in place as needed. The procedure also describes how the findings of the review are communicated to the Owner.

### ***Scope***

Applies to the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems

### ***Responsibility***

Manager of Operations  
Manager of Engineering  
Manager of Capital Projects  
Water/Wastewater Supervisor

### ***Procedure***

Review and provision of the drinking water infrastructure needed is achieved through two different means:

- Existing infrastructure;
- Growth needs.

### ***Existing Infrastructure***

On an annual basis Public Works assesses the operational performance of the water distribution systems by looking at the number of breaks, repairs and other maintenance activities that have occurred during the previous years. This condition assessment also considers the age of pipes, materials, size available from the Tangible Capital Asset Inventory. The QMS Risk Assessment is reviewed to assist with the prioritization of projects which may have a higher risk factor as summarized in the Risk Assessment Outcomes.

Based on the information obtained a list of priority projects is developed for water distribution. This includes projects for new and/or replacement of infrastructure. Public Works identifies concurrent projects that will be undertaken each year (e.g. wastewater, roads), including projects by the York Region which may alter the timing of work.

### ***New Infrastructure***

The review process for new infrastructure is driven by the growth plan for the community. The results of the growth-related drinking water infrastructure needs review is documented in the following:

- Town's Official Plan and Secondary Plans



- Stouffville Functional Servicing Study
- Ballantrae/Musselman's Lake Servicing Report
- Region of York Transportation & Water and Wastewater Master Plans
- Functional Servicing/Development Area Studies
- Development Charge Background Study

Long term planning for growth related infrastructure starts with the development and updating of the Official Plan (OP), which provides the policy framework to guide the provision of infrastructure within the Town. The OP focuses on population projections, land use planning and environmental policies.

The Town has prepared Functional Servicing Studies to identify the servicing required to support the growth strategies identified in the OP. Water system modelling was completed for the communities and is regularly updated as development occurs. These studies have identified the system upgrades necessary, including extensions of the drinking water distribution system and watermain replacement/upsizing in the existing network.

The York Region Transportation and Water & Wastewater Master Plans guide the Region's infrastructure need for water, sewers, roads and transit. They typically have a planning horizon of 25 years or greater and are updated on a 5-year basis. The Master Plans incorporate the provincial population projections and employment forecasts, changed in land use planning and environmental policies.

York Region is also consulted if regional roads are to be used for a project. Any road reconstruction projects being completed by the Region are also reviewed to help identify priority projects.

Prior to any new development and draft plan of subdivision approval, the Town requires a Functional Servicing/Development Area Study (FS/DAS) be completed for each individual development. The purpose of the FS/DAS is to coordinate the major components (e.g. roads, servicing, open space, etc.) of the future new development to ensure the future plans of subdivisions are properly integrated between themselves and the existing community.

### **Provision of Infrastructure**

The 10-year capital plan is reviewed by Public Works and Development Services annually during the budget process to identify and reprioritize the list of projects as they fit in the 10-year capital plan.

Top Management determines the projects that will be included in the Annual Draft Budget and the 10-Year Capital Plan based on recommendations of staff.



The Owner is advised of new and replacement infrastructure needs through review and approval of the 10-year capital plan during the annual budget process.

Public Works will identify projects that were on the priority list but did not receive budget approval or receive approval but were not constructed during a specific year. These are put back onto the list when developing the priority list of projects for the year and when updating the 10-year capital Plan. Annual operating budgets are also used to provide minor infrastructure improvements and replacement.

As part of the budget process, water rates are adjusted to balance revenues and expenditures. Contributions to the Water Infrastructure Reserve are also approved through the annual budget.

### **Other Requirements**

Public Works develops a list of other requirements and presents this information to Top Management. Top Management determines if those other requirements will be included in the draft budget based on recommendations of staff.

Other requirements include, but not limited to, buildings, work space, fleet, process equipment and supporting services such as computer software/hardware or communication tools.

Once a year, Public Works reviews the work constraints and requirements that may have direct impact on work efficiency. For this purpose, Public Works will review water related technology improvements, other municipalities experiences/innovations, AWWA and other technical associations/authorities findings and utilizes them to prepare the list of other information or technology that may benefit the operation of the system. These items will be considered in the 10-year capital program or annual operating budget.

### **References**

Town of Whitchurch-Stouffville Business Plan, Capital & Operating Budgets and 10-Year Capital Forecast Report  
Public Works Equipment Inventory

### **Appendices**

None

### **Forms**

None



## **Element 15 – Infrastructure Maintenance, Rehabilitation and Renewal**

### **Purpose**

The purpose of this procedure is documenting a summary of routine maintenance, rehabilitation and renewal programs for the Town of Whitchurch-Stouffville infrastructure.

### **Scope**

Applies to the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems.

### **Responsibility**

Manager of Operations  
Manager of Engineering  
Manager of Capital Projects  
Water/Wastewater Supervisor

### **Procedure**

#### ***Planned Maintenance Activities***

Routine maintenance activities are scheduled by the Manager of Operations and the Water/Wastewater Supervisor. Scheduling is tracked through the QMS-APP-01-01 - QMS Activity Schedule. All associated records produced in conjunction with the activity are filed in the appropriate location. Refer to QMS-APP-05-02 - Records Control Table for the location of records.

Routine maintenance tasks include, but are not limited to:

- Hydrant painting;
- Hydrant inspections;
- Valve cycling/exercising;
- Valve chamber inspection;
- Watermain flushing;
- Watermain pressure inspection;
- Equipment calibration.

Service levels and maintenance frequency are defined in the Standard Operating Procedure for each maintenance activity.

#### ***Unplanned Maintenance Activities***

Unplanned maintenance is a result of infrastructure malfunction or breakage. The Water/Wastewater Supervisor responds to and coordinates work activities for unplanned maintenance such as adverse water samples, low system pressure or



watermain breaks during normal working hours. The On-Call Operator reports emergencies to the Water/Wastewater Supervisor (or alternate) which take place outside of regular work hours.

When an Operator is advised of an adverse water sample, low system pressure or a watermain break either during business hours or outside regular working hours, they must refer to and follow the applicable procedures.

In the event of equipment failure (ex. a colorimeter or locating device) the Operator must inform the Water/Wastewater Supervisor of the problem with the equipment. The Water/Wastewater Supervisor takes the appropriate corrective action to repair or replace the malfunctioning equipment.

An after action review of the procedures and corrective actions which were taken to resolve an unscheduled maintenance activity is conducted by the Manager of Operations, the Water/Wastewater Supervisor, and others deemed necessary to determine if response and procedures are current in accordance with applicable legislation and regulations.

### ***Rehabilitation & Renewal***

Annually, the Director of Public Works, Manager of Operations, Manager of Capital Projects, and others deemed necessary review the Tangible Capital Asset (TCA) inventory, maintenance records, and customer complaints to assess the condition of the system. This review is also used to prioritize the Public Works 10-Year Capital Replacement Plan. The Infrastructure Review Procedure is located in system level procedure Element 14.

Equipment reliability and new equipment requirements are reviewed annually by the Manager of Operations and Water/Wastewater Supervisor prior to budget preparation. The following factors are considered for each piece of equipment:

- Physical life – is the equipment no longer capable of performing its intended function or is it worn out?
- Technological life – is the new product of improved or superior design and does it demonstrate an improved capability for performance?
- Economic life – do the economics of replacement or leasing (renting) prove superior to the economics of retaining the equipment?

A list of waterworks equipment is located in the Public Works Equipment Inventory spreadsheet.





***Non-revenue Water and Water Loss Tracking***

Public Works staff complete the IWA/AWWA Water Audit on an annual basis to evaluate Non-revenue water and water losses. This information assists staff in determining the overall condition of the water system.

***Communication to Owner***

Top Management review includes Infrastructure review and is reported to the Owner annually.

**References**

Element 14 – Infrastructure Review  
Public Works Equipment Inventory spreadsheet.

**Appendices**

QMS-APP-01-01 - QMS Activity Schedule

**Forms**

None



## **Element 16 – Sampling, Testing and Monitoring**

### **Purpose**

To document the Town's program for sampling, testing and monitoring activities. This document describes how the sampling, testing and monitoring results are recorded and shared with the Owner, where applicable.

### **Scope**

Applies to the Ballantrae/Musselman's Lake and Stouffville Drinking Water Distribution Systems

### **Responsibility**

Manager of Operations  
Water/Wastewater Supervisor  
Operations Technologist  
Licensed Water Operators

### **Procedure**

#### ***Sampling and Testing***

Sampling, testing and monitoring is completed on distributed water to:

- Ensure compliance with applicable Ontario Drinking Water Regulations;
- Ensure water quality is maintained throughout the distribution systems;
- Provide operators with knowledge required to proactively operate the drinking water systems, especially at Critical Control Points.

For the purpose of this procedure, "sampling" is identified as the process of collecting water samples for laboratory analysis, and "testing" is considered to be laboratory analysis. "Monitoring" consists of on-site data collection and analysis.

Samples are taken at various locations throughout the system to ensure the water meets applicable regulations. A sampling schedule is updated annually or as required due to system changes. The Water/Wastewater Supervisor in consultation with the Manager of Operations is responsible for ensuring that sampling, testing and monitoring occurs at the locations and under the conditions most challenging to the system. The sampling schedule is maintained by the Water/Wastewater Supervisor, and indicates the sample locations, parameters, and sample frequency. Refer to QMS-APP-16-01 – Annual Sampling Schedule and Locations.

The sampling points and corresponding analysis are listed on the chain of custody forms which track the sample from the point of collection to the lab for analysis. The assigned Licensed Operator is responsible for completing the chain of custody forms.



The number of samples taken per week/month is determined by the Water/Wastewater Supervisor in accordance with the MECP Drinking Water System Regulation O. Reg. 170/03. The number of samples will continue to increase as the population grows, in accordance with the requirements of the O. Reg. 170/03.

Maintenance of the database for all sampling and testing results is the responsibility of the Operations Technologist to ensure accurate data is reported in the Annual and Summary Reports.

The protocols for collecting and handling water samples are provided in the standard operating procedure QMS-SOP-16-01.

### ***Sampling & Testing Results***

Analytical results are compared to the Ministry of Environment and Climate Change Ontario Drinking Water Standards (ODWS, O. Reg. 169/03) and Ontario Drinking Water System (O. Reg. 170/03) requirements. The analytical results are compiled annually and listed along with the Maximum Acceptable Concentration (MAC), (based on the ODWS). In addition, the statistics are compiled and reviewed for all analytical results for all minimum, maximum, and average for each parameter that is tested.

All the lab results and chlorine residual results are entered into an internal database by the Operations Technologist. The Operations Technologist also analyses those results against the standards and runs reports through this database.

Adverse Water Quality incidents are identified through notification from the lab. In the event that the analytical results indicate adverse conditions, staff will follow QMS-SOP-16-01 and undertake corrective actions. The SOP indicates how these adverse conditions are reported and addressed. Adverse Water Quality incidents may also be identified by the Licensed Operator during monitoring activities.

Sampling, testing, and monitoring records are managed in accordance with the Element 5 - Document and Record Control.

### ***Monitoring***

Monitoring consists of Chlorine Residual Testing in compliance with the requirements of O. Reg. 170/03 and tests taken during regular maintenance of the system (i.e. during dead-end flushing). Refer to QMS-APP-16-01 – Annual Sampling Schedule and Locations. Staff monitor the pH levels within the system during the twice per year lead sampling program.

Static hydraulic pressure is measured in the system during the annual hydrant inspection program.



### ***Sampling, Testing, and Monitoring Locations***

Sampling, testing, and monitoring for Regulatory Compliance occurs through each of the drinking water systems at defined locations. Each location is equipped with a dedicated sample collection station.

The sampling and testing locations are spread throughout the distribution systems, including points near the extremities (most challenging locations) of the system. The sampling and testing schedule rotates through the inventory of sampling station locations. Samples may also be taken and tested following repairs to the system.

Chlorine residual testing and monitoring is undertaken according to the sampling and testing schedule at defined sampling station locations. The Town employs a schedule in compliance with O. Reg. 170/03 that ensures chlorine residual testing occurs at representative locations throughout the systems.

Chlorine residual monitoring also occurs during routine preventative maintenance activities, such as the annual hydrant flushing and inspection program, and whenever repairs to the system are completed.

### ***Reporting to the Owner***

The Manager of Operations collects the information and prepares the Annual Report showing the results of sampling, testing, and monitoring and any adverse water quality incidents.

In accordance with relevant legislation, summary reports are provided to Council and posted on the Town's website on an annual basis, with an emphasis on outlining abnormal conditions that have occurred during the past year. The Summary Report includes a summary of the sampling, testing and monitoring results.

### **References**

- QMS-SOP-16-01 – Collection and Handling of Drinking Water Samples and Lead Sampling Program
- QMS-SOP-15-03 – Watermain Flushing
- O. Reg. 169/03 – Ontario Drinking Water Quality Standards
- O. Reg. 170/03 – Drinking Water Systems
- Element 5 - Document and Record Control

### **Appendices**

- QMS-APP-16-01 – Annual Sampling Schedule and Locations

### **Forms**

None



## **Element 17 – Equipment Calibration and Maintenance**

### **Purpose**

To document the calibration and maintenance of measurement and recording equipment used for the provision of safe drinking water.

### **Scope**

Applies to all maintenance and recording equipment used for the provision of safe drinking water.

### **Responsibility**

Water/Wastewater Supervisor  
Lead Hands  
Licensed Water Operators

### **Procedure**

#### ***Equipment Calibration and Maintenance Frequency and Schedule***

Measurement and recording equipment are maintained and calibrated as per equipment manufactures specifications.

The Water/Wastewater Supervisor is responsible for ensuring calibration and maintenance of each equipment type is performed as outlined in the QMS-APP-01-01 - QMS Activity Schedule. Certificates are obtained from the manufacturer's calibration service and stored as per Element 5 – Document and Records Control.

The Water/Wastewater Supervisor or designate is responsible for ensuring monthly testing of colorimeters is completed. Information is recorded on QMS-FRM-17-01 – Calibration Test for HACH Pocket Colorimeter II and stored as per Element 5 – Document and Records Control.

In the event equipment calibration failure is detected by a Lead Hand or Operator, the Water/Wastewater Supervisor shall be notified immediately for corrective action. When the Water/Wastewater Supervisor is made aware of equipment failure, the manufacturer shall be contacted for further calibration or instructions. The Water/Wastewater Supervisor is responsible for determining if the equipment should be repaired or replaced.

List of waterworks equipment is located in QMS-APP-17-01 – List of Waterworks Equipment.

### **References**

Element 5 – Document and Records Control Procedure

### **Appendices**



QMS-APP-01-01 – QMS Activity Schedule  
QMS-APP-17-01 – List of Waterworks Equipment

**Forms**

QMS-FRM-17-01– Weekly Calibration Test for HACH Pocket Colorimeter II



## **Element 18 – Emergency Management**

### **Purpose**

The purpose of this procedure is to document how the Town maintains a state of emergency preparedness, including:

- a list of potential emergency situations or service interruptions,
- processes for emergency response & recovery,
- emergency response training & testing requirements,
- Owner & Operating Authority responsibilities during emergency situations,
- references to municipal emergency planning measures, and
- emergency communication protocol and up-to-date list of emergency contacts

### **Scope**

This procedure applies to emergencies that may arise affecting drinking water quality in the distribution system.

### **Responsibility**

All employees in the Operating Authority

### **Procedure**

#### ***Identification of Emergency Situations or Service Interruptions***

During the risk assessment process (including the annual and three year reviews) the outcomes are identified which include emergency situations or service interruptions. This is another opportunity where the review process may identify emergency situations or service interruptions that can be added to the list from the above meeting.

The types of emergencies that are addressed in the Public Works Department Water Distribution Emergency Plan are:

- Major service disruption – e.g. large scale watermain breaks affecting water supply
- Adverse water quality – e.g. microbiological or chemical contamination

The QMS Representative is responsible for maintaining and updating the list of potential emergency situations or service interruptions.

#### ***Process for Emergency Response and Recovery***

Based on emergencies identified the QMS Representative is responsible for ensuring that Emergency Operating Procedures (EOPs) are developed.

The EOPs outline the roles and responsibilities for various staff and the activities related to the response and recovery from the emergency situation or service interruption.



The Town of Whitchurch-Stouffville has a corporate emergency plan that outlines communication procedures during emergency situations and the roles and responsibilities of the Owner and appropriate staff depending on the level of emergency.

The Director is responsible for initiating corporate communications for emergencies that have escalated to a corporate level of response.

For escalation of emergencies, the Emergency Communications Protocol should be referred to as it provides the emergency communication protocol for situations that have the potential to escalate to corporate level impacts. The emergency list of contacts is included in this protocol.

### ***Emergency Response Training and Testing Requirements***

The Manager of Operations is responsible for ensuring that emergency response training is undertaken by appropriate staff. The training is tracked for staff as per system procedure Element 10 - Competencies. Training will be conducted a minimum of once a year and will include any updates to the procedures, testing of the procedures, discussion of After-Action Reports (AARs) or a general review of the most common and/or critical procedures, as time allows.

In addition, a debriefing after larger scale emergencies will be undertaken by the Manager of Operations (QMS Representative) and will include the Director and other applicable staff. The After-Action Report (AAR) developed will be shared with all operations staff and will constitute training on the procedures impacted.

At least once a year, at a minimum the most common and/or critical emergency procedures (response and recovery) will be tested and evaluated with modifications made to the procedure where required based on the review and/or debriefing following emergency situations. The results of the emergency response testing are reviewed in the Top Management Review.

### **References**

Element 8 – Risk Assessment Outcomes  
Element 10 – Competencies  
QMS-SOP-12-01 – Inter-Municipal Communication

### **Appendices**

None

### **Forms**

None





## **Element 19 – Internal Audits**

### **Purpose**

This procedure defines the process used by the Town of Whitchurch-Stouffville to conduct internal audits of the Quality Management System (QMS) for the water distribution systems at least once a calendar year.

### **Scope**

Applies to all activities within the scope of the QMS as documented in the Town of Whitchurch-Stouffville Operational Plan and Standard Operating Procedures.

### **Responsibility**

QMS Representative

### **Procedure**

#### ***Auditors***

Lead Auditor duties are fulfilled by an individual designated by the QMS Representative. The Lead Auditor may be selected from internal staff or external resources. The Lead Auditor shall have completed an Internal Auditor training course approved by the MECPC and other applicable training and experience. Individuals who have completed an Internal Auditor training assist the Lead Auditor in the annual auditing duties.

#### ***Internal Audit Schedule and Agenda***

The annual internal audit is identified in the QMS-APP-01-01 - QMS Activity Schedule. The internal audit plan is created by the Lead Auditor and emailed to the QMS Representative and all assigned auditors prior to audit commencement. The QMS Representative is responsible for notifying the staff to be interviewed and ensuring their availability.

#### ***Conducting the Audit***

The Lead Auditor is responsible for the following actions:

- Prepare an audit plan;
- Prepare questions for each audit;
- Review previous internal and external audit results;
- Identify and review applicable documentation;
- Prepare the opening meeting agenda;
- Select staff in the Operating Authority to be interviewed;
- Chair the opening meeting. Top Management, the QMS Representative, scheduled Auditors are invited to this meeting;
- Collect objective evidence;
- Chair the closing meeting with the same invitees from the opening meeting;



- Report non-conformances and issue Corrective Action Requests using QMS-FRM-21-01 - QMS Continual Improvement
- Prepare Audit Report.

If the Lead Auditor is from an outside employer (i.e. consultant, neighbouring municipality), upon completion of the audit report the responsibility to complete and close the audit is delegated to the QMS Representative.

The QMS Representative or designate is responsible for the following actions:

- To be available during the entire internal audit;
- Implements and follows up on corrective actions;
- Close the audit file. The audit file is not closed until all corrective actions are addressed or an action plan has been implemented.

The Auditor(s) are responsible for the following actions:

- Review applicable documentation;
- Record the audit on an Internal Audit Report, supplied by the Lead Auditor;
- Follow the direction and report audit results to the Lead Auditor.

### ***Reporting the Results***

Upon completion of each interview, the Auditor reviews the responses with the interviewee. The Auditor prepares a summary for each interview and submits to the Lead Auditor.

The Lead Auditor prepares and submits a completed Audit Report to the QMS Representative within thirty (30) business days of the closing meeting.

A summary of the audit findings including any non-conformances or areas of improvement on QMS-FRM-21-01 - QMS Continual Improvement.

### ***Corrective Action Requests (CAR)***

The QMS Representative reviews all non-conformances or areas of improvement and initiates the corrective action required to eliminate all the identified Non-conformances and address Opportunities for Improvement using QMS-FRM-21-01 - QMS Continual Improvement. and assigns the CAR to the appropriate staff member. The QMS Representative advises the staff member of the required timelines for completion of the CAR. The QMS Representative tracks all CARs in QMS-FRM-21-01 - QMS Continual Improvement.

The QMS Representative follows up on the status of all corrective actions 30 days after the CAR has been issued for a minor non-conformance, and 45 days after the CAR has been issued for a major non-conformance. If the effectiveness cannot be verified within



the 30 or 45 days, the QMS Representative will determine a verification date and record on QMS-FRM-21-01 – QMS Continual Improvement. If the non-conformance has not been rectified at that time, the QMS Representative and others deemed necessary develop an action plan to ensure the completion of the CAR by the deadline.

Once all corrective actions have been successfully completed, the QMS Representative closes the audit file.

The QMS Representative reports to Top Management on all identified Non-conformances and Opportunity for Improvement with the outcomes of their corrective actions. Top Management reports the findings to the Owner in the annual Summary Report.

### ***Storage of the Audit Results***

Audit results are stored as per Element 5 – Document and Records Control.

### **References**

Element 5 – Document and Records Control.

### **Appendices**

QMS-APP-01-01 - QMS Activity Schedule

### **Forms**

QMS-FRM-21-01 - QMS Continual Improvement



## **Element 20 – Management Reviews**

### **Purpose**

To document the procedure for describing how the QMS will ensure its continuing suitability, adequacy and effectiveness. In this respect, the necessary information is collected for Top Management to review and to provide review output on any additions and actions related to the QMS. The procedure outlines the requirement for Top Management to report the results of the management review to the Owner.

### **Scope**

The QMS Representative or designate provide information and data concerning the following categories for the review:

- a. Incidents of regulatory non-compliance
- b. Incidents of adverse drinking water tests
- c. Deviations from critical control point limits and response actions
- d. The efficiency of the risk assessment process
- e. Results of internal and third-party audit results
- f. Results of emergency response training and testing
- g. Operational system performance
- h. Water quality trends including raw water supply
- i. Follow up action items from previous management reviews
- j. Status of management action items identified between reviews
- k. Changes in resource requirement, infrastructure, process, personnel, the DWQMS or regulations that could affect the QMS
- l. Consumer feedback
- m. The resources needed to maintain the QMS
- n. The results of the infrastructure review
- o. Operational Plan currency, content and updates
- p. Staff suggestions – Including review of all Opportunities for Improvement identified between Management Reviews.

### **Responsibility**

Top Management  
Manager of Capital Projects  
Manager of Operations  
Water/Wastewater Supervisor  
Operations Technologist

### **Procedure**

#### ***General***

The Management Review takes place annually prior to the budget preparation process. The participants ensure that a thorough review of the QMS is conducted. Refer to the QMS-APP-01-01 - QMS Activity Schedule for scheduling of the Management Review.



The QMS Representative is responsible for:

- establishing the date for the Annual Management Review meeting;
- forwarding notification of the meeting to participants; and
- forwarding the agenda for the meeting to the participants.

### ***Management Review***

A Management Review will be held at least once per calendar year by Top Management to review the overall suitability, adequacy and effectiveness of the QMS. All members of Top Management must be present at the Management Review meeting.

### ***Management Review Participants***

The Management Review is convened by the QMS Representative. Attendees include, but are not limited to:

- The Director of Public Works, and CAO (Top Management)
- The Manager of Operations (QMS Representative)
- The Water/Wastewater Supervisor
- Operations Technologist

### ***Management Review Process***

Management reviews each input category in order to identify if, where and when improvements to the QMS and its procedures are required. The QMS Representative or designate makes note of any changes or action items required during the course of the review.

### ***Management Review Reporting***

The output from the Management Review includes meeting minutes maintained by the QMS Representative or designate. These minutes includes:

- The date and time of the Management Review;
- The names of attendees;
- Continual improvement initiatives;
- Any identified deficiencies;
- A list of “action” items. All action items identifies:
- The person responsible for completing the item;
- Timeframe for completion of the action item;
- Recommendation(s) needed for maintenance or improvement of the QMS including resources;
- All items reviewed in the Management Review shall be recorded as an action item or no action required.

The continual improvement initiatives determined during the management review are recorded and the status tracked on QMS-FRM-21-01 - QMS Continual Improvement.



The QMS Representative follows up on the status of all action items at every QMS Quarterly Meeting. If the action item has not been addressed at that time, the QMS Representative and the assigned person develop an action plan to ensure the completion of the action item by the deadline.

The meeting minutes are distributed to the Owner, Top Management and Public Works Staff via email within thirty (30) days of the completion of the Management Review.

***Storage of Management Review Results***

Management Review Results are stored as per Element 5 – Document and Records Control.

**References**

Element 5 – Document and Records Control

**Appendices**

QMS-APP-01-01 - QMS Activity Schedule

**Forms**

QMS-FRM-21-01 - QMS Continual Improvement



## **Element 21 – Continual Improvement**

### **Purpose**

To document the procedure established for the Operating Authority to strive to continually improve the effectiveness of its Quality Management System through commitment to the policy and use of tools such as audit results, corrective actions and management review.

### **Scope**

Applies to all activities in the QMS as documented in the Town of Whitchurch-Stouffville Operational Plan and Standard Operating Procedures

### **Responsibility**

All staff in the Operating Authority

### **Procedure**

Staff in the Operating Authority will follow the QMS cycle (Plan-Do-Check-Improve) to make improvements to the QMS. Improvements are made through the use of corrective actions.

Corrective or preventative action may be identified as a result of the following indicators of a breakdown in the Quality Management System:

- Internal audits
- External audits
- After Action Review (AAR)
- Management Review
- Trends identified in management reports
- Customer complaints
- Staff request/suggestions
- Document Change Request

### ***Non-Conformances***

Non-Conformances to the DWQMS can be identified through Audits (internal and external), document review and changes to day to day activities. Corrective action of non-conformances involves taking measures to eliminate the cause(s) of identified issue (e.g., related product, process or service) to ensure the problem does not recur. Any employee may initiate an identified non-conformance by notifying the QMS Representative of the non-conformance for their review.

The QMS Representative or designate is responsible for investigating the corrective action request. The investigation will include, but is not limited to:

- who is involved;
- what is the root cause of the problem or potential problem;



- documenting what action(s) are required; and
- what are the necessary steps to be taken in an appropriate timeframe;

The QMS Representative is responsible for;

- ensuring corrective action is undertaken that addresses the root cause and all aspects of the non-conformance;
- establishing a reasonable deadline for the CAR to be completed;
- determining if the corrective action is effective;
- recording if any further action is required;
- preventing re-occurrence of the non-conformance;
- closing the CAR once the root cause has been fully addressed.

The QMS Representative verifies the effectiveness of the action As outlined in Element 19 – Internal Audits. If the action plan is found to be ineffective, the action plan is revised, or a new plan created, and the effectiveness is reviewed again after another 30 days.

As required, the QMS Representative and Water/Wastewater Supervisor will review processes and procedures to ensure the actions do not create a non-conformity. Any identified non-conformances or opportunities for improvement during the review of process and procedures will be documented and tracked on QMS-FRM-21-01 - QMS Continual Improvement.

### ***Opportunities for Improvement***

Opportunities for Improvement (OFIs) can be identified through Audits (internal and external), document review and changes to day to day activities. Any employee may initiate an OFI by notifying the QMS Representative of the OFI for their review.

Any identified OFIs will be documented and tracked on QMS-FRM-21-01 - QMS Continual Improvement.

### ***Customer Complaints***

The staff in Centralized Customer Service Centre records complaints related to the drinking water system in the Service Request Manager (SRM) and creates the request for Service. Other staff may also create SRMs. If the customer complaints result in a Corrective Action Request or OFI, the applicable process shall be followed to initiate the change.

### ***After Action Review***

In support of the QMS Policy, employees in the Operating Authority are encouraged to perform an After-Action Review (AAR) following completion of any significant task or process. Examples of significant tasks or processes include:





- Completion of major preventative maintenance programs;
- Completion of system repairs outside of normal operating procedures;
- Commissioning of new systems or equipment.

The AAR form QMS-FRM-21-02 – After Action Review guides the staff through the AAR process. The Director of Public Works, Manager of Operations or Water/Wastewater Supervisor may initiate an AAR following any Level 1, 2 or 3 Emergency or for any other event such as the initiation of any new program for Regulatory Compliance or any new program for preventative/corrective maintenance at their discretion.

Completed AAR are distributed via email to Director of Public Works, Water/Wastewater Supervisor, QMS Representative, Operations Technologist and participants of AAR. The AARs are reviewed at the QMS Quarterly Meetings for improvements to the QMS.

### ***Staff Requests and Suggestions***

If a staff member has a suggestion for a new document or form, or changes to an existing document or form, the QMS Representative is notified by means of an email with a brief description of the suggestion. The need for new or updated documents or forms may also be identified through the Management Review, system audits or the After-Action Review process.

The QMS Representative reviews all suggestions and proposed revision(s) to the QMS with the employee who submits the Opportunity for Improvement Request. The QMS Representative or designate makes the appropriate changes to documents or forms as per Element 5 – Document and Records Control Procedure.

### ***Best Management Practices***

The QMS Representative will review and consider industry best management practices at least once every thirty-six months. The MECP publishes best management practices from time to time and are available on their website [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater). The QMS Representative will review these documents and report at the Management Review any applicable processes/procedures to be implemented.

## **References**

Element 5 – Document and Records Control

## **Appendices**

None

## **Forms**

QMS-FRM-21-02 – After Action Review



QMS-FRM-21-01 - QMS Continual Improvement

<b>Revision Number</b>	<b>Date</b>	<b>Change</b>	<b>Reviewed By:</b>	<b>Approved By:</b>
2	February 22, 2018	Annual Document Review	Peter W	Brian K
3	June 5, 2019	Annual Document Review	Peter W	Brian K
4	December 24, 2019	Elements 5 & 21 Revised	Peter W	Brian K
5	February 11, 2020	Annual Document Review Definitions added	Peter W	Brian K