

QMS OPERATIONAL PLAN

COBOURG & TOWNSHIP OF
HAMILTON DRINKING WATER
SYSTEM

Prepared for the Town of Cobourg and
Township of Hamilton

by



Lakefront
Utility
Services
Inc.

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PURPOSE | Quality Management System

The purpose of this Operational Plan is to describe the comprehensive Quality Management System (QMS) developed and implemented by Lakefront Utility Services Inc. (LUSI) for the Drinking Water System for which LUSI acts as the Operating Authority.

This Operational Plan includes references to all components of the Drinking Water Quality Management Standard (DWQMS).

SCOPE | Quality Management System

This Operational Plan outlines the processes and procedures for the overall quality management system for the Cobourg Drinking Water System and the Township of Hamilton Drinking Water System. The Cobourg DWS and the Township of Hamilton DWS have a written agreement under Ontario Regulation 170/03 Section 5 (4)(b) stating that the Township of Hamilton Subsystem will be operated as an extension of the Cobourg Distribution System. As a result of this, for the purposes of simplicity and consistency, the Operational Plan developed herein shall apply to both systems unless a system-specific process is identified.

This Operational Plan including any referenced procedures, standard operating procedures, or other QMS documentation are not intended to replace any of the prevailing regulations that govern the requirements for safe drinking water in the Province of Ontario.

REFERENCES |

Drinking Water Quality Management Standard
Safe Drinking Water Act

NOTES |

This Operational Plan and related documentation are intended to be controlled and maintained in electronic format. Any printed copy is uncontrolled and is intended for “information purposes” only.

All documentation relating to the Operational Plan is available to all Operating Authority personnel on the LUSI Internal Network. A hard copy of the Operational Plan and/or related documents is available to the owner and the public for viewing upon request.

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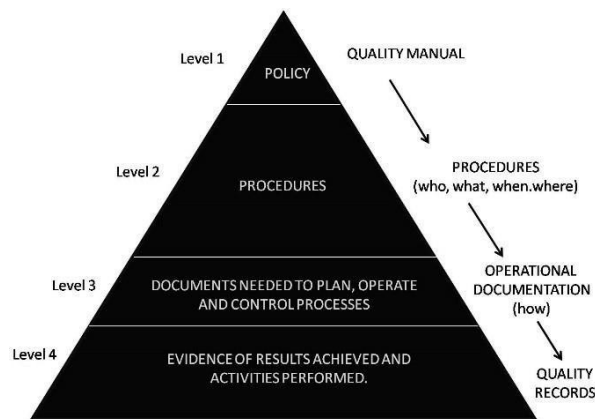
ELEMENT 1 | Quality Management System

In December of 2005, the Safe Drinking Water Act was introduced to promote water conservation and source water protection, along with new regulations to initiate a Quality Management System (QMS) for all Operating Authorities. The Safe Drinking Water Act (SDWA,) requires that Owners and Operating Authorities of Municipal Residential Drinking Water Systems to have an accredited Operating Authority. In order to become accredited, an Operating Authority must establish and maintain a QMS. The Drinking Water Quality Management System (DWQMS) was implemented in 2007.

The Cobourg Drinking Water System and Township of Hamilton Distribution System Operational Plan and related documents outline the processes and procedures for the QMS. The Operational Plan and its associated documents were developed to meet all the elements of the Ministry of Environment’s DWQMS and is structured to meet the order of those requirements.

Most importantly, this document, when combined with the Quality Policy, serves as the foundation of the QMS. This Operational Plan was developed and documented by the Operating Authority (Lakefront Utility Services Inc.) and has been reviewed and approved by the owners prior to issue.

Figure 1 | QMS Architecture



Regulatory Requirements

LUSI has developed and implemented a procedure to address the reporting of regulatory requirements. This procedure does not address the compliance aspects of the Ontario Regulations covering Safe Drinking Water. It describes the method, for ensuring that the reporting of data to the Ontario Ministry of Environment, Conservation and Parks is conducted per the frequency required by the regulations.

ELEMENT 2 | Quality Management System Policy

Refer to **D02 QMS Quality Management System Policy**

ELEMENT 3 | Cobourg Commitment and Endorsement

Refer to **D01b QMS Commitment and Endorsement**

ELEMENT 3 | Township of Hamilton Commitment and Endorsement

Refer to **D01a QMS Commitment and Endorsement**

ELEMENT 4 | QMS Representative

Refer to **D04 QMS Representative**

ELEMENT 5 | Document and Record Control

LUSI is committed to managing and controlling all documentation and records as required by the DWQMS. Documents will be kept current, legible and readily identifiable as outlined in **QMS-P01 – Document Control**.

Records retained as required by the DWQMS will be kept legible, readily identifiable and retrievable. The storage, protection, retention and ultimate disposal of DWQMS documentation is completed as per the procedure for record control – **QMS-P02 – Record Control**.

ELEMENT 6 | Drinking Water System

Refer to **COB-QMS-D14- Drinking Water System Description**.

ELEMENT 7 | Risk Assessment

Traditionally, a risk assessment is a process/method used to identify the following:

- Potential hazardous events and associated hazards,
- Assess the risks associated with the occurrence of hazardous events,
- Ranks the hazardous events according to the associated risk, and
- Identifies control measures to address the potential hazards and hazardous events.

Additional components are reviewed, specifically related to the Drinking Water System, as follows:

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- Potential hazardous events and associated hazards, as identified in the Ministry of the Environment and Climate Change document titled “Potential Hazardous Events for Municipal Residential Drinking Water Systems”, and
- Reliability and redundancy of the equipment.

LUSI conducts a complete risk assessment once every thirty-six months, while a review of the most recent assessment is completed once every calendar year to ensure that the currency of the information and validity of the assumptions is correct.

QMS-P03 – Risk Assessment describes LUSI’s methodology for the completion of a risk assessment, considering all components described above.

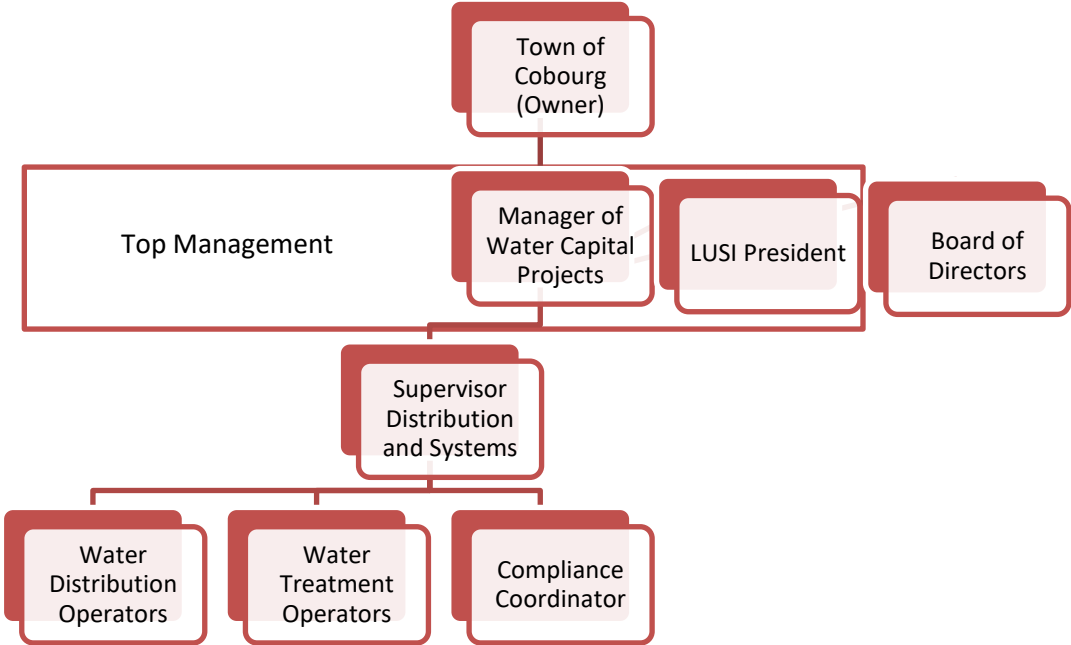
ELEMENT 8 | Risk Assessment Outcomes

The risk assessment described in Element 7 identifies potentially hazardous events, and the resulting associated hazards. Results from the risk assessment, are documented in **QMS-D02 – Risk Assessment Outcomes**.

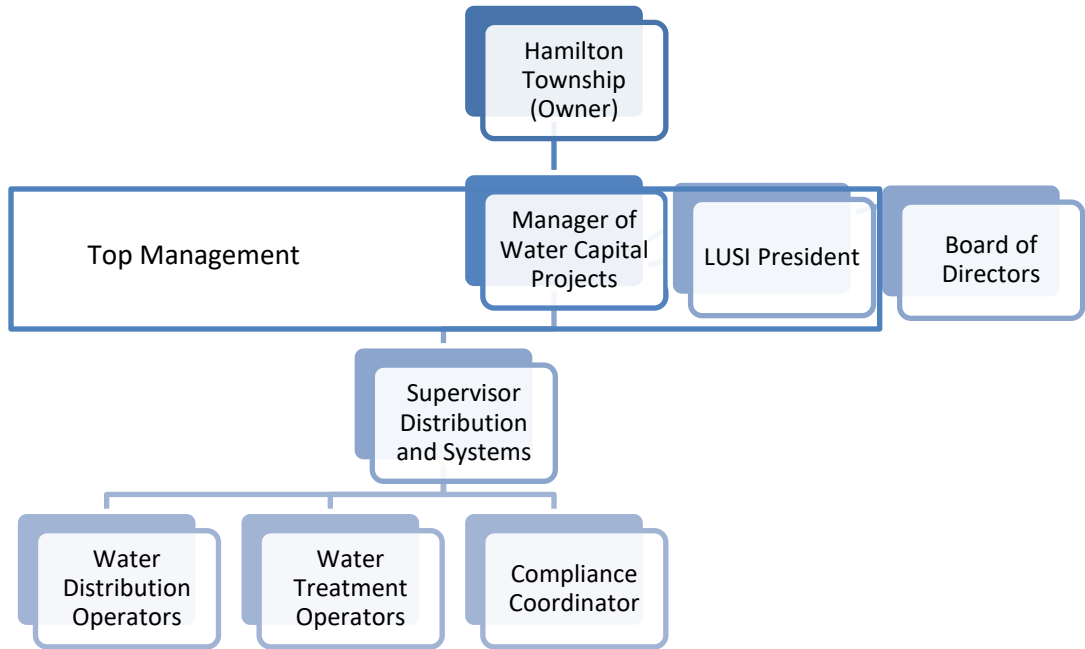
QMS-P06 – Critical Control Points outlines the process to monitor, report and record deviations from the critical control limits.

ELEMENT 9 | Organizational Structure, Roles, Responsibilities & Authorities

LUSI, incorporated in 2000, is the designated Operating Authority the Cobourg Drinking Water System and the Township of Hamilton Distribution System. The organizational chart that represents each system is represented below.



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Responsibilities and authorities required by the Owner and LUSI are listed in [QMS-D17 – Responsibilities and Authorities](#), as it relates to the drinking water system operations and applicable regulatory requirements.

ELEMENT 10 | Competencies

LUSI has developed a list of competencies required for all individuals whose duties directly affect drinking water quality. Competency is demonstrated by having appropriate education, training, skills and experience for a relevant position. [QMS-P08 – Operator Duties](#) describes the necessary competencies, as identified in the regulations under the Safe Drinking Water Act. Further competencies, as required by LUSI, are outlined in [QMS-D18 – Competencies](#).

ELEMENT 11 | Personnel Coverage

LUSI ensures that sufficient personnel meeting the competencies outlined in Element 10, are available for duties that directly affect drinking water quality, as described in [QMS-P08 – Operator Duties](#).

ELEMENT 12 | Communications

Procedure, [QMS-P09-Communication](#), describes how relevant aspects of the Quality Management System are communicated between Top Management and the owner, operating authority personnel and the public. More specifically, communication with providers of essential supplies and services is documented in [QMS-P10-Essential Supplies and Services](#).

For all the communication described within this element, transmittal of documents or information made between parties will be recorded as outlined in [QMS-P02 – Record Control](#).

ELEMENT 13 | Essential Supplies and Services

In addition to the communication outlined in Element 12, Element 13 focuses specifically on how LUSI manages suppliers that provide essential goods and services for the delivery of safe drinking water. **QMS-P10 – Essential Suppliers and Services** identifies a procurement procedure, and a corresponding procedure to verify the quality of the supplies and services.

ELEMENT 14 | Review and Provision of Infrastructure

14.1. COBOURG DRINKING WATER SYSTEM

LUSI reviews the adequacy of the infrastructure necessary to operate and maintain the drinking water system on an annual basis. Inputs to the infrastructure review may include, but are not limited to:

- i. Water Master Plan
- ii. Water Model
- iii. Asset Management Model
- iv. Risk assessment outcomes where infrastructure improvement, repair, or upgrade was identified as a method to reduce likelihood or impact of a hazard or hazardous event,
- v. Maintenance reports relating to the reliability and capability of equipment, machinery and measuring devices required to produce safe drinking water,
- vi. Maintenance and inspection reports relating to the condition of distribution system components,
- vii. Performance of the SCADA system,
- viii. Changes to the regulations governing the production and distribution of safe drinking water, and
- ix. Conditions of buildings and other structures (including fences)
- x. Annual Operating Budgets
- xi. Water Quality Complaints

Annually, the capital plan is reviewed and updated by the Manager of Water Capital Projects and Water Operations staff. The Manager of Water Capital Projects presents the budget to Top Management for approval. Once approved Top Management will seek approval from the Board of Directors.

If projects are removed from the priority list through approval of the budget, the projects are reviewed and re-prioritized for the following year.

14.2. TOWNSHIP OF HAMILTON DISTRIBUTION SYSTEM

LUSI reviews the adequacy of the infrastructure necessary to operate and maintain the distribution system on an annual basis. This review is conducted simultaneously, as part of the Cobourg Drinking Water System infrastructure review. Upon completion, the LUSI water department provides an annual summary to the Owner, if required, outlining capital infrastructure updates and/or replacements required. The Owner is responsible for presenting the budget to the council for approval. Upon council approval, the Owner authorizes projects for completion. If projects are removed from the priority list through approval of the budget, the projects are reviewed and re-prioritized for the following year.

ELEMENT 15 | Infrastructure Maintenance, Rehabilitation and Renewal

15.1. Cobourg Capital Maintenance, Rehabilitation and Renewal

In 2020, a Financial Plan was prepared for the Cobourg Drinking Water System, outlining the capital maintenance, rehabilitation and renewal needs for a 10-year period. The Financial Plan was presented to Council and was unanimously accepted.

Items identified during the review and provision of infrastructure, Element 14, are incorporated into the long-term capital forecast. On an annual basis, projects are reviewed and adjusted to reflect changes in the background information, inflationary impacts, and changing priorities. In an attempt to align major projects for simultaneous completion, LUSI coordinates projects with the Town of Cobourg through the Joint Utility Committee.

If updates and/or requests to deviate from the long-term capital forecast are required, Water Department Management provides a request to LUSI Top Management. Once approved Top Management will seek approval from the Board of Directors.

The status of approved and ongoing projects is communicated to the Owner via the Water Committee.

15.2. Township of Hamilton Maintenance, Rehabilitation and Renewal

Due to the size and nature of the Township of Hamilton Distribution System, LUSI and Township of Hamilton discuss infrastructure maintenance, rehabilitation and renewal on an annual basis during management review, or on an as-needed basis. Typical factors related to infrastructure maintenance, rehabilitation and renewal include, but are not limited to:

- i. Condition Assessments
- ii. Water Quality Complaints

15.3. General Operational Maintenance, Rehabilitation and Renewal

General infrastructure maintenance such as planned and unplanned maintenance at the Cobourg WTP/Distribution System and/or Township of Hamilton Distribution System occurs as required. LUSI conducts at a minimum,

- Annual hydrant maintenance and flushing
- Valve Exercising
- Equipment Preventative Maintenance Program
- Annual Calibration Program

Results of planned and unplanned maintenance activities are used as a basis to monitor whether the maintenance program is effective; identifying an asset (or group of assets) that requires updating as part of the long-term capital forecast. The outcomes of this program are reported to the Owner on a regular basis via the Water Committee.

ELEMENT 16 | Sampling, Testing and Monitoring

A sampling, testing and monitoring procedure for process control and finished drinking water quality is defined in [QMS-P07 – Sampling, Testing + Monitoring](#). The procedure includes details with regards to sampling locations and frequencies, in-house and third-party testing, and process monitoring. Sampling, testing and monitoring results are provided annually, at a minimum, to the Owner via the Annual Summary Report.

ELEMENT 17 | Measuring & Recording Equipment Calibration & Maintenance

Equipment used for perform sampling, testing and monitoring shall be maintained and calibrated as outlined in [QMS-P12-Calibration and Maintenance](#).

ELEMENT 18 | Emergency Management

LUSI's [LUSI Water Emergency Plan](#) documents a procedure to maintain a state of emergency preparedness for situations that could result in the loss of the ability to main the supply of safe drinking water to consumers. The Emergency Plan meets the requirements of and is in co-ordination with municipal emergency planning measures of the Owner.

In addition to the Emergency Plan, LUSI has identified specific emergency situations that could arise in the drinking water system and implemented [Emergency Response Procedures \(ERPs\)](#). The ERP's are part of the Emergency Plan documentation.

ELEMENT 19 | Internal Audits

LUSI conducts internal audits to evaluate the conformity of the Quality Management System with the requirements of the Drinking Water Quality Management Standard. Internal audits are conducted at least once every calendar year, following the procedure outlined in [QMS-P04 – Internal Audit](#).

ELEMENT 20 | Management Review

LUSI conducts a management review at least once every calendar year, to ensure Top Management is briefed on all requirements of Element 20, and that all deficiencies are identified and communicated with the Owner. The procedure is outlined in [QMS-P05 – Management Review](#).

ELEMENT 21 | Continual Improvement

LUSI is committed to improving the effectiveness of the QMS. Ideas and suggestions for improvements to the QMS may be, but not limited to, a result of knowledge gained from the risk assessment, owner and end user input, audit results, analysis of operational data, corrective actions and management review activities.

LUSI shall review applicable best management practices (BMPs) at least once every thirty-six months and update procedures to ensure conformity. Authors of BMPs include, but are not limited to the following,

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- Ministry of Environment, Conservation and Parks (MECP)
- American Water Works Association (AWWA)
- Ontario Water Works Association (OWWA)
- International Water Association (IWA)

QMS-P11-Continual Improvement documents LUSI's process for identification and management of QMS corrective actions. Additionally, it documents the process for identifying and implementing preventative actions to eliminate the occurrence of potential non-conformities in the QMS.

APPENDIX | Town of Cobourg Schedule C



Ministry of the Environment,
Conservation and Parks

[Print Form](#)

Schedule C – Director’s Directions for Operational Plans (Subject System Description Form) Municipal Residential Drinking Water System

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *

The Corporation of the Town of Cobourg

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Cobourg Drinking Water System	137-101		Lakefront Utility Services Inc.	220000825

[Add Item \(+\)](#)

Contact Information for Questions Regarding the Operational Plan [i](#)

Primary Contact

Last Name *

Spyrka

First Name *

Larry

Middle Initial

Title *

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Taggart

First Name

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Title

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[Save Form](#)

[Print Completed Form](#)

[Clear Form](#)

APPENDIX | Township of Hamilton Schedule C



Ministry of the Environment,
Conservation and Parks

[Print Form](#)

Schedule C – Director’s Directions for Operational Plans (Subject System Description Form) Municipal Residential Drinking Water System

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *
[The Corporation of the Township of Hamilton](#)

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Hamilton Township Distribution System	139-101		Lakefront Utility Services Inc.	260039208

[Add Item \(+\)](#)

Contact Information for Questions Regarding the Operational Plan [i](#)

Primary Contact

Last Name *	First Name *	Middle Initial
Spyrka	Larry	
Title *	Telephone Number *	Email Address *
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Secondary Contact

Last Name	First Name	Middle Initial
Taggart	Adam	
Title	Telephone Number	Email Address
Supervisor, Distribution and Systems	905-375-4845 ext. <input type="text"/>	ataggart@lusi.on.ca

[Save Form](#)

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CHANGE HISTORY |

REV Level	Date	Change	By
REV 20	Nov. 11, 2015	Updated hyperlinks. Removed obsolete hyperlink references.	AF
REV 21	March 21, 2016	Added Schedule C to documents. Updated operational data.	AF
REV 22	Oct 28, 2016	Changed titles in Schedule C	AF
REV 23	Nov 20, 2017	Reviewed. Updated MDWL and PTTW info, flow data, Removed CCP 6 from CCP table. Changed timeline of Internal Audit and Management Review to “annually”.	AF
REV 24	April 13, 2018	Added valve exercising and hydrant flushing to Section 15 as per NSF CAR.	AF
REV 25	Jul 23, 2018	Updated CCP – Primary Disinfection – Contact Chambers – Lower Chlorine limits for larger buffer of CT calculations	SW
REV 26	Aug 22, 2018	Updated reference documents throughout plan	SW
REV 27	Nov 15, 2018	Updated description of DWS to include polymer	SW
REV 28	Apr 30, 2019	Complete update of operational plan	SW
REV 29	Feb 6, 2020	Updated organization charts	SW
REV 30	Aug 20, 2020	Updated cross referencing errors found in Internal Audit 2020.	SW
REV 31	Feb 8, 2021	Added updated QMS Policy Statements with SB signature Updated Section 14 and Section 15	SW
REV 32	May 25, 2021	Updated Element 21 with new procedure P11-Continual Improvement, removing P11-Corrective Action and P12-Preventative Action	SW
REV 33	October 25, 2021	<ol style="list-style-type: none"> 1. Element 1: Clean Water Act replaced with Safe Drinking Water Act 2. Element 2: Clean water replaced with safe water and also Shawn Bolender with Larry Spyrka 3. Element 14: position of manager of water operations replaced with the manager of water capital projects 	MA
REV 33	June 25, 2022	<ol style="list-style-type: none"> 1. Personnel charts were changed for Cobourg and Hamilton Element 7: MECP document date was updated 2. Element 17: P13 was changed to P12 	MA
REV 34	Oct 13, 2022	<ol style="list-style-type: none"> 1. APPENDIX converted to QMS documents and their names changed to the document name 2. Hamilton township convert to township of Hamilton 3. Cobourg & Township of Hamilton DWS - Emergency Plan converted to LUSI WATER EMERGENCY PLAN in element 18. 4. QMS rep letter was updated 5. Organization Charts were updated 	MA
REV 35	Nov 29, 2022	Schedule C added to op as an appendix	MA
Rev 36	October 9, 2023	Removed reference to Definitions Document Removed QMS Policy, Endorsement and QMS Rep and added as a reference Updated Organizational Charts Updated Schedule C	JD