

QMS OPERATIONAL PLAN

COLBORNE DRINKING WATER SYSTEM

Prepared for Cramahe Township

by



**Lakefront
Utility
Services
Inc.**

October

ELEMENTS

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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 at the Operating Authority.

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

SCOPE | Quality Management System

The Colborne Water Supply and Distribution System (Water System) Operational Plan covers the activities and personnel associated with all operational aspects of the production and distribution of safe drinking water to The Corporation of the Township of Cramahe (Owner) by the Lakefront Utility Services Inc. (Operating Authority).

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 is intended to be controlled and maintained in electronic format. Any printed copy is uncontrolled and is intended for “information purposes” only.

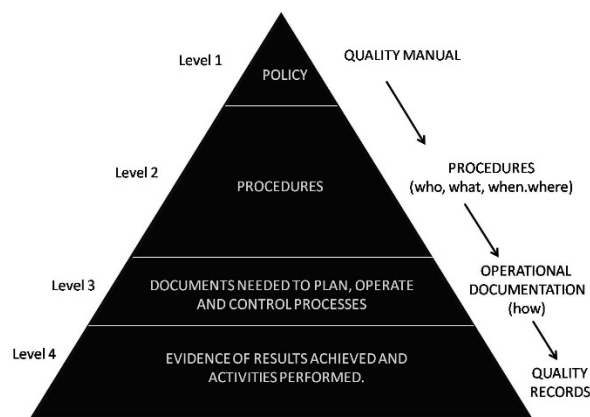
All documentation relating to the Operational Plan is available to all Operating Authority personnel on the LUSI Internal Network. A hard copy of the Operational Plan and/or related documents is available to the owner and the public for viewing upon request.

ELEMENT 1 | Quality Management System

The Colborne Drinking Water 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 these 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 owner (The Corporation of the Township of Cramahe) prior to issue.

Figure 1 | QMS Architecture



ELEMENT 2 | Quality Management System Policy

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

ELEMENT 3 | Commitment and Endorsement

Refer to **D01d 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 **COL-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:

- 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 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 completion of a risk assessment, considering all components described above.

ELEMENT 8 | Risk Assessment Outcomes

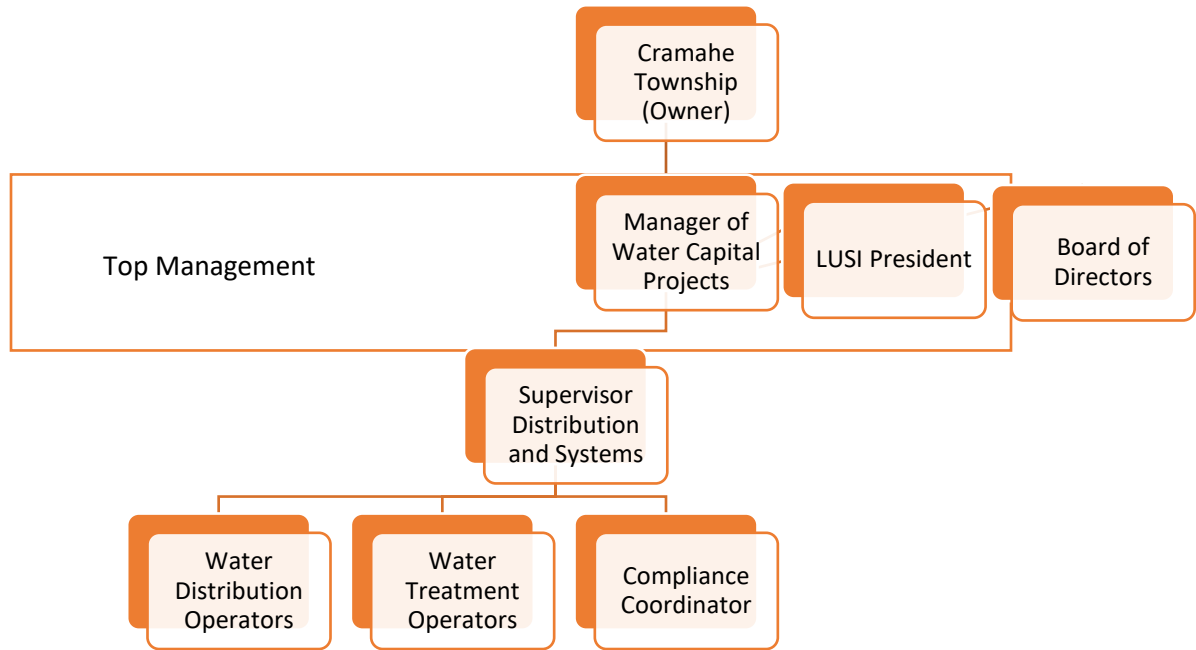
The risk assessment described in Element 7 identifies potentially hazardous events, and the resulting associated hazards. Results from the risk assessment are documented in [QMS-D02 – Risk Assessment Outcomes](#).

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

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ELEMENT 9 | Organizational Structure, Roles, Responsibilities & Authorities

LUSI, incorporated in 2000, is the designated Operating Authority for several drinking water systems. Each drinking water system has the same organization structure, represented below in the Organizational Chart.



Responsibilities and authorities required by the Owner and LUSI are listed in QMS-D17 - Responsibilities 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

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 Model
- ii. Asset Management Model (input provided by the Owner),
- iii. 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,
- iv. Maintenance reports relating to the reliability and capability of equipment, machinery and measuring devices required to produce safe drinking water,
- v. Maintenance and inspection reports relating to the condition of distribution system components,
- vi. Performance of the SCADA system,
- vii. Changes to the regulations governing the production and distribution of safe drinking water,
- viii. Conditions of buildings and other structures (including fences), and
- ix. Annual Operating Budgets

Annually, at a minimum, the Manager of Water Operations prepares a budgetary request of required expenditures.

ELEMENT 15 | Infrastructure Maintenance, Rehabilitation and Renewal

Capital Maintenance, Rehabilitation and Renewal

In 2020, a Financial Plan was prepared for the Colborne Drinking Water System, outlining the capital maintenance, rehabilitation and renewal needs for a 10-year period. Items identified during review and provision of infrastructure, Element 14, were incorporated into the development of the Financial plan for long-term capital forecasting.

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On an annual basis, projects are reviewed and adjusted to reflect changes in the background information, inflationary impacts, and changing priorities. The Owner is responsible for presenting the budget to Council. Upon Council acceptance, an Owner representative provides the accepted budget to the Manager of Water Operations.

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

The status of approved and ongoing projects is communicated to the Owner on an as-needed basis.

General Operational Maintenance, Rehabilitation and Renewal

General infrastructure maintenance such as planned and unplanned maintenance at the water treatment plant and/or within the distribution system occurs as required. LUSI conducts at a minimum,

- Annual hydrant maintenance and flushing
- Valve Exercising (as time permits, currently)
- 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 require updating as part of the long-term capital forecasting. The outcomes of this program are presented to the Owner on an as-needed basis, or during Management Review.

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 in the Summary Report.

ELEMENT 17 | Measuring & Recording Equipment Calibration & Maintenance

Equipment used for to perform sampling, testing and monitoring shall be maintained and calibrated as outlined in QMS-P13-Calibration and Maintenance.

ELEMENT 18 | Emergency Management

LUSI's - 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 management review at least once every calendar year, to ensure Top Management reviews all the topics required by 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,

- 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 | Colborne DWS 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 Cramahe](#)

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Colborne Drinking Water System	138-101		Lakefront Utility Services Inc.	220000790

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

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

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CHANGE HISTORY |

REV Level	Date	Change	By
REV 10	Oct 28, 2016	Updated titles in Schedule C attachment.	AF
REV 11	Nov 13, 2017	Review, updated typos in documents titles, and descriptions.	AF
REV 12	Apr 12, 2018	Added schedule of valve exercising and hydrant flushing program to Section 15 as per NSF CAR. Updated water consumption data	AF
REV 13	Aug 27, 2018	Updated reference documents, procedures, work instructions.	SW
REV 14	May 8, 2019	Complete update of the operational plan.	SW
REV 15	Feb 7, 2020	Updated organizational chart.	SW
REV 16	Aug 20, 2020	Updated cross referencing errors from Internal Audit 2020	SW
REV 17	Feb 8, 2021	Added updated QMS Policy Statements with SB signature Updated Section 14 and Section 15	SW
REV 18	May 25, 2021	Updated Element 21 with new procedure P11-Continual Improvement, removing P11-Corrective Action and P12-Preventative Action	SW
REV 19	June 14, 2023	Review document and update for Operating Authority change. Added references to Quality Policy, Commitment and Endorsement and QMS Representative	JD
Rev 20	October 9, 2023	Removed Appendices to separate documents. Added Schedule C	JD

*Note: Previous revisions have been removed for brevity, they are available for review upon request