

QMS | OPERATIONAL PLAN

QMS OPERATIONAL PLAN

GRAFTON DRINKING WATER SYSTEM

Prepared for Alnwick/

Haldimand Township by



**Lakefront
Utility
Services
Inc.**

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 as the Operating Authority.

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

SCOPE | Quality Management System

The Grafton Water Distribution and Supply (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 Alnwick/Haldimand (Owner) by the Lakefront Utility Services Inc. (Operating Authority).

This Operational Plan including any referenced procedures, standard operating procedures, or other QMS documentation is 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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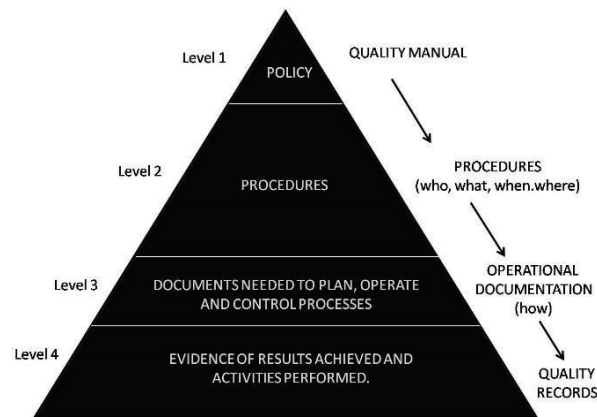
ELEMENT 1 | Quality Management System

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 Grafton 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 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 owner (The Corporation of the Township of Alnwick/Haldimand) 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 | Grafton Commitment and Endorsement

Refer to **D01c - 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 **GRT-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”, dated April 2022, 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.

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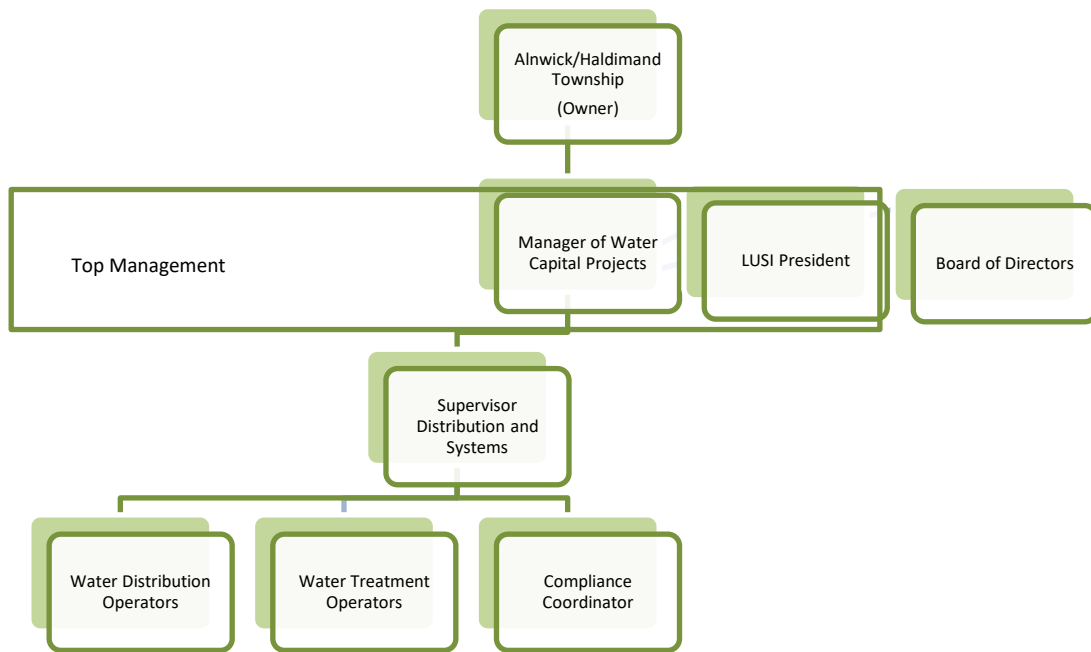
ELEMENT 8 | Risk Assessment Outcomes

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 for several drinking water systems. Each drinking water system has the same organizational structure, represented below in the Organizational Chart.



Responsibilities and authorities required by the Owner and LUSI are listed in [QMS-D17- Responsibilities & 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, the 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 Rate Study
- ii. Risk assessment outcomes where infrastructure improvement, repair, or upgrade was identified as a method to reduce the likelihood or impact of a hazard or hazardous event,

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

Annually, at a minimum, the Manager of Water Capital Projects 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 Grafton 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.

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 Capital Projects.

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 5-year capital plan. 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 to perform sampling, testing and monitoring shall be maintained and calibrated as outlined in QMS-P12-Calibration and Maintenance.

ELEMENT 18 | Emergency Management

LUSI's 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 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

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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.

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APPENDIX | 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 Alwicks/Haldimand](#)

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Grafton Drinking Water System	238-101		Grafton Drinking Water System	220009158

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

Contact Information for Questions Regarding the Operational Plan i

Primary Contact

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Secondary Contact

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Title		Telephone Number	ext.	Email Address
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[Save Form](#)

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CHANGE HISTORY |

REV Level	Date	Change	By
REV 10	Nov 29, 2017	Updated format and titles and dates. Corrected typo's and updated operational data.	AF
REV 11	Apr 17, 2018	Added schedule of valve exercising and hydrant flushing program to Sec 15 as per NSF CAR. Updated water consumption data.	SW
REV 12	Aug 16, 2018	Updated references to current documents.	SW
REV 13	May 8, 2019	Complete update of operational plan	SW
REV 14	Apr 14, 2020	Updated organization chart.	SW
REV 15	Aug 20, 2020	Updated cross referencing errors from Internal Audit 2020	SW
REV 16	Feb 24, 2021	Added updated QMS Policy Statements with SB signature Updated Section 14 and Section 15	SW
REV 17	May 25, 2021	Updated Element 21 with new procedure P11-Continual Improvement, removing P11-Corrective Action and P12-Preventative Action	SW
REV 18	NOV 25,2021	<ol style="list-style-type: none"> 1. Element 1: Clean Water Act replaced with Safe Drinking Water Act Element 2. Clean water replaced with safe water 3. Shawn Bolender with Larry Spyrka 4. Element 14: position of manager of water operations replaced with the manager of water capital projects 	MA
REV 19	June 30,2022	<ol style="list-style-type: none"> 1. Personnel charts were changed. 2. Element 7: MECP document date was updated 3. Element 17: P13 was changed to P12 	MA
REV 20	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 WATER EMERGENCY PLAN in element 18. 4. QMS rep letter was updated 5. Organization Charts were updated 	MA
REV 21	NOV 29,2022	schedule c added to op as an appendix	MA
Rev 22	October 9, 2023	<p style="text-align: center;">Removed reference to Definitions Document Removed QMS Policy, Endorsement and QMS Rep and added as a reference Updated Organizational Charts Updated Schedule C</p>	JD

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