Municipality of Middlesex Centre DWQMS Operational Plan

For the:

Middlesex Centre Distribution System

OP #052-401

Melrose Drinking Water System

OP #052-403

Birr Drinking Water System

OP #052-404

Version: 19 Date:

2026-04-22

Ontario

Ministry of the Environment, Conservation and Parks

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 *
Municipality of Middlesex Centre

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Middlesex Centre Distribution System	052-401	NA	The Municipality of Middlesex Centre	260004202
2. Melrose Drinking Water System	052-403	NA	The Municipality of Middlesex Centre	260002915
3. Birr Drinking Water System	052-404	NA	The Municipality of Middlesex Centre	220005492

Contact Information for Questions Regarding the Operational Plan

Primary Contact

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Title *	Telephone Number *	Email Address *
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Disponible en français

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Alternative Formats:

If you require this document in an alternative format, please contact the Municipality of Middlesex Centre at 519-666-0190 or customerservice@middlesexcentre.ca.

1.0 Introduction

This operational plan describes how the Municipality of Middlesex Centre's quality management system (QMS) will:

1. Meet the requirements of the Drinking Water Quality Management Standard 3.0 (DWQMS), and
2. Ensure we consistently achieve the intended outcomes of our drinking water systems' processes and programs.

The Municipality of Middlesex Centre is the owner and operating authority for the Middlesex Centre Distribution System, Melrose Drinking Water System, and Birr Drinking Water System.

Our operational plan, other QMS information (e.g. standard operating procedures, work instructions, forms), and training programs - all support achieving our QMS Policy commitments (p. 6).

Organization and People sections of this manual describe:

- the commitments we've made (sections 2 and 3)
- the people we have and their roles, responsibilities and authorities (section 9)
- how we ensure staff competencies and coverage (sections 10 and 11)
- the procedures in place that explain how we communicate internally (among staff and to the owner) and externally (to essential suppliers and to the public) (section 12)

System Operations and Maintenance sections describe:

- the processes and programs we have in our drinking water systems (section 6)
- risks associated with our drinking water system (sections 7 and 8)
- supplies and services essential to our operations and maintenance (section 13)
- ways in which we annually review the adequacy of our infrastructure (section 14)
- what infrastructure maintenance, rehabilitation and renewal programs we have (section 15)
- how we maintain a state of emergency preparedness (section 18)

Support and Performance Evaluation sections describe:

- the ways in which we manage and control documents and records (section 5)
- how we sample, test, and monitor for process control and finished water quality, how we maintain our calibrated equipment, and how we share results (sections 16 and 17)
- how we conduct internal audits to verify we achieved everything we should (section 19)
- the content of our QMS reports to top management and to the Owner (section 20)

The Continual Improvement section describes:

- how we track and measure continual improvement (section 21)

This operational plan is available for viewing by the public online at: https://www.middlesexcentre.on.ca/municipal-serviceswater/water-supply.

2.0 Quality management system (QMS) policy

As the owner and operating authority for the municipality's drinking water systems, the Municipality of Middlesex Centre and Water & Wastewater Operations division are committed to:

a) Managing and operating the drinking water systems in a responsible manner in accordance with documented quality management policies and procedures.

b) Providing the consumer with clean, safe drinking water.

c) Maintaining and continually improving each quality management system.

d) Complying with applicable regulations and legislation

Signed this 22nd day of April, 2026 at Middlesex Centre, Ontario.

Tiffany Farrell
Chief Administrative Officer
(Top Management)

Director of Public Works & Engineering
(Top Management)

Environmental Services Manager
(QMS Representative)

These policy commitments are communicated to staff through QMS awareness training and made available to the public through our website.

3.0 Commitment and endorsement

As decision-makers for the drinking water systems and representatives of top management and the owner, we are committed to:

e) ensuring that an **effective** QMS is in place that meets the requirements of the DWQMS,

f) ensuring that the operating authority is **aware** of all applicable legislative and regulatory requirements,

g) **communicating** the QMS according to the procedure for communications, and

h) determining, obtaining or providing the resources needed to maintain and continually **improve** the QMS.

Signed this 22nd day of April 2026 at Middlesex Centre, Ontario.

Tiffany Farrell
CAO (Top Management)

Director of Public Works & Engineering
(Top Management)

Environmental Services Manager
(QMS Representative)

Signatures are updated within six months of changes to the personnel who hold the positions listed above.

Owner endorsement of this Operational Plan is obtained through a council resolution within one calendar year of changes to council.

4.0 QMS representative

The Environmental Services Manager has been appointed the role of Quality Management System (QMS) Representative for the Municipality of Middlesex Centre. Irrespective of other responsibilities, the QMS Representative has both the responsibility and the authority to:

a) administer the QMS by ensuring that *processes and procedures needed for the QMS* are established and maintained,
b) report to Top Management on the performance of the QMS and any need for improvement,
c) ensure that current versions of documents required by the QMS are being used at all times,
d) ensure that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the drinking water systems, and
e) promote awareness of the QMS throughout the operating authority.

July 22, 2019

LETTER OF APPOINTMENT

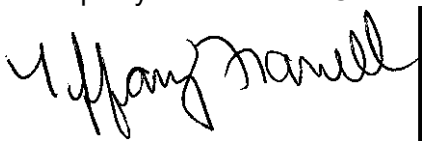
Eric Joudrey is appointed and authorized by Top Management as the Quality Management System ("QMS") representative under the Drinking Water Quality Management System for water systems owned by the Municipality of Middlesex Centre, including:

- Birr Well Supply
- Melrose Well Supply
- Middlesex Centre Distribution System (servicing communities of Arva, Ballymote, Delaware, Denfield, and Komoka-Kilworth and Ilderton)

The QMS Representative, irrespective of other duties, shall:

A) Administer the Quality Management System by ensuring that processes and procedures needed for the Quality Management System are established and maintained.
B) Report to Top Management on the performance of the Quality Management System and any need for improvement.
C) Ensure that current versions of documents required by the Quality Management System are being used at all times.
D) Ensure that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the subject system, and
E) Promote awareness of the Quality Management System throughout the Operating Authority.

Signed,
Municipality of Middlesex Centre



Tiffany Ferrell CPA, CA
Acting CAO, Municipality of Middlesex Centre

5.0 Document and records control

Documents for the QMS and daily systems operations are to be reviewed on a regular basis for consistency, and effectiveness by the QMS Rep and/or designate. All documents within the QMS that are not current will be taken out of circulation, archived then disposed of when required. QMS documents are created in compliance with the ***QMS 05 – 01 Document & Record Control Procedure.***

Records of operational activities are maintained in a legible manner, readily identifiable, and retrievable. They are stored, protected, retained and disposed of as required by the Safe Drinking Water Act, 2002 and its various regulations**.**

Documents from external sources (i.e. MECP forms and acts and regulations) are taken directly from the source to ensure that it is the most current available.

The ***QMS 05 - 03 Document Master List*** containing each QMS related document is maintained on a regular basis.

6.0 Drinking water systems

The Municipality of Middlesex Centre is the **owner** and **operating authority** for Middlesex Centre's three (3) drinking water systems:

- Birr Drinking Water System (DWS # 220005492) - Small Municipal Residential System
- Melrose Drinking Water System (DWS # 260002915) - Small Municipal Residential System
- Middlesex Centre Distribution System (DWS # 260004202) - Class II

Municipality of Middlesex Centre systems provide potable water to the residents and businesses of in the Municipality of Middlesex Centre. The water systems within the municipality include the Class II Middlesex Centre Distribution System consisting of six (6) different subsystems, and two (2) Small Municipal Residential Systems known as Birr Drinking Water System and Melrose Drinking Water System.

The Middlesex Centre Distribution System obtains water either directly from the Lake Huron Primary Water Supply System (LHPWSS) or from the City of London Distribution System served by the LHPWSS. The Birr and Melrose Drinking Water Systems are well water systems. The Municipality of Middlesex Centre owns, manages, maintains and operates the facilities described below.

Process Flow Diagrams are in O&M Manuals, and GIS Drawings for each of the drinking water systems are located in the shared drive, in work trucks and on the GIS web site maintained by Middlesex County.

Birr Drinking Water System

The Birr Drinking Water System consists of one groundwater well. The well is located approximately 5m from the pump house in the Village of Birr. The well is equipped with a

submersible pump and is rated at 88m^3/day. The raw water quality is typically good, and it is rare for there to be any instances of bacteriological growth. Other than usual water usage increases in the summer months (where flows are still within system capacity), there are no operational challenges due to event-driven fluctuations.

Raw well water is pumped from the well into a 51m^3 concrete reservoir. The water is disinfected using a sodium hypochlorite disinfection system, consisting of one 100L storage tank and two chemical metering pumps (one duty and one standby) with a feed line discharging into the underground reservoir. Two submersible high lift pumps, each rated at 81.7 L/min, subsequently pump the water through a 150mm watermain to the distribution system. There is no storage or other components in the distribution system. No upstream or downstream processes that are relied upon to ensure the provision of safe drinking water.

Melrose Drinking Water System

The Melrose Drinking Water System consists of two deep-drilled groundwater wells:

- Well #2, a drilled well at a depth of 23.8m, is equipped with a submersible pump rated at 5.45L/s
- Well #3, a drilled well at a depth of 24.7m, is equipped with a submersible pump rated at 5.45L/s

The raw water quality is typically good, and it is rare for there to be any instances of bacteriological growth. Other than the usual water usage increases in the summer months and water being used for fires (where flows are still within system capacity), there are no operational challenges due to event- driven fluctuations.

Raw well water from the production wells enters the treatment plant equipped with flow meters prior to the lines merging into a single common header where liquid sodium hypochlorite is injected as part of the primary disinfection process for the system. Following sodium hypochlorite injection, the water is conveyed overhead through a single pipe to an aeration unit. The aeration unit injects high volumes of air into the water to enhance the oxidation of iron. The aerated water enters an underground aeration chamber prior to being drawn up by one of two centrifugal pumps and conveyed to one of three aesthetic filters. The three aesthetic filters are used primarily for the removal of oxidized iron. Each filter system is configured with five backflow prevention devices and valves to ensure the proper functioning of the filters in normal and backwash modes. Under normal flow conditions, filtered water is directed past a second sodium hypochlorite injection point which is located just downstream of the three filters and just upstream of the two large contact time reservoirs which are located below grade in the Treatment Plant. The treated water in the reservoirs is directed to a clear well. There are four high lift vertical turbine distribution pumps:

- Pump #1 (2.35 L/s) is the normal operation pump
- Pumps #2 and #3 (both 4.65 L/s) will automatically be engaged with required demand
- Pump #4 (38 L/s) which is considered the emergency fire pump.

The high lift pumps direct water downwards via piping into a below grade chamber where a final sodium hypochlorite injection point is located; this final sodium hypochlorite injection point is not typically used. There is no storage or other components in the distribution system.

There are no upstream or downstream processes that are relied upon for the provision of safe drinking water.

Middlesex Centre Distribution System

The Middlesex Centre Distribution System is comprised of six (6) different sub-systems obtaining water either directly from the Lake Huron Primary Water Supply System (LHPWSS) or from the City of London Distribution System served by LHPWSS. The six (6) water sub-systems are:

- Arva Distribution Sub-System
- Ballymote Distribution Sub-System
- Delaware Distribution Sub-System
- Denfield Distribution Sub-System
- Ilderton Distribution Sub-System
- Komoka-Kilworth Distribution Sub-System

The water supply for all the distribution sub-systems is the Lake Huron Primary Water Supply System. The source of the water obtained by the LHPWSS is Lake Huron, a surface water source. Raw water is treated using conventional chemically assisted flocculation and sedimentation systems, dual-media filtration, and gaseous chlorine as the primary disinfectant. The LHPWSS is owned by the Lake Huron Joint Board of Management, and their Operating Authority is Ontario Clean Water Agency.

Arva Distribution Sub-System

The water supply for the Arva Distribution System is obtained from a 1050 mm pipeline from the London distribution system. The London distribution system is owned and operated by the City of London. A 200mm cast-iron pipeline with flow meter and in-line vertical turbine fire pump distributes treated water. Two chemical metering pumps are available for secondary disinfection to boost sodium hypochlorite levels.

Ballymote Distribution Sub-System

The Ballymote Distribution System obtains water from a 300 mm pipeline from the London distribution system. The London distribution system is owned and operated by the City of London. A re-chlorination injection point exists with a portable chlorine feed system, a sampling tap immediately downstream from the injection point and a chlorine analyzer measures free chlorine residual in the water entering the distribution system.

Delaware Distribution Sub-System

The Delaware Drinking Water Sub-System receives water through a 150 mm water main from the Komoka-Kilworth distribution Sub-System connection at the Delaware Booster pumping station (BPS) facility.

The Delaware BPS consists of two in-line booster pumps that pressurize the distribution system to fill the Delaware Standpipe to a predetermined level, a bypass line with an actuated valve to permit flow based on system pressure demands, a pressure relief line, and a SCADA system with flow and pressure monitoring.

The Delaware standpipe is a reservoir that provides system pressure and re-chlorination with two chemical pumps and chlorine analyzers for the incoming and distribution flows to boost disinfection residuals as needed.

Denfield Distribution Sub-System

The Denfield Distribution System taps into the 1200mm main from the LHPWSS. The water feeds the 100m^3 reservoir that is owned by The Municipality of Middlesex Centre. The booster pumping station has two booster pumps rated at 3.8 L/s and one variable speed pump with a rated capacity of 40 L/s.

A sodium hypochlorite system is used to boost the chlorine entering or leaving the reservoir. Water is then fed to the distribution system.

Ilderton Distribution Sub-System

The water supply for the Ilderton distribution system is obtained from LHPWSS. Water supply from the LHPWSS enters the waterworks building (Booster Station), which is owned and operated by the Municipality of Middlesex Centre. Water is conveyed to the distribution system and water tower with three (3) high lift pumps each rated at 17 L/s. A sodium hypochlorite disinfection system with containment and two metering pumps are available for booster disinfection. The Ilderton Water Tower is fed via a 300 mm water main and has a storage capacity of 2,050 m^3.

Komoka – Kilworth Distribution Sub-System

The water supply for the Komoka-Kilworth Distribution system is obtained from the LHPWSS via 400 mm main. The water feeds the 2817 m^3 reservoir, which is owned by Middlesex Centre. The booster pumping station has two booster pumps rated at 53.7 L/s along with a sodium hypochlorite system, which is used to boost the chlorine entering, or leaving the reservoir. Water is fed to the Komoka Water Tower that has a storage capacity of 1,500 m^3 and to the Intermediate Booster Pump Station that is equipped with variable frequency drives (VFD's) to supply flow to Kilworth during period of high flow.

Other than usual water usage increases in the summer months, there are no operational challenges due to event-driven fluctuations for any part of the Middlesex Centre distribution system. The treatment of the raw water at the LHPWSS is a critical upstream process that is relied upon to ensure the provision of safe drinking water.

7.0 Risk assessment

Each stage of the drinking water system—from the source to the consumer's tap—is evaluated for potential risks, including those related to source water, treatment processes, and distribution.

Middlesex Centre's Water & Wastewater Operations division reviews the accuracy of risk assessment information and the assumptions behind it at least once every calendar year. Updated findings are presented for approval at the next Management Review meeting.

A full risk reassessment is completed at least every 36 months using established criteria for likelihood, consequence, and detectability/response.

Likelihood		Consequence		Detectability & Response	
1	**Rare:** Has occurred or may occur less frequently than once every 10 years, given the existing control measures.	1	**Insignificant or no:** Service interruption to consumers (<5%) or loss of available water supply (duration of <3 hours, and/or minor pressure fluctuations), or insignificant or no public notification.	1	**High Detectability and/or Excellent Response:** Automatic response AND alarm. Excellent ability to respond in comparison to best practices and considering resources available[1].
2	**Unlikely:** Has occurred or may occur approximately once every 5- to 10-year period, given the existing control measures.	2	**Localized minor:** Service interruption to consumers (5-15%) or loss of available water supply (duration of 3-6 hours and/or sustained minor drop in pressure) or localized public notification.	2	**Moderate Detectability and/or Very Good Response:** Requires system to be running to receive alarm and/or call-out is delayed. Very good ability to respond, considering resources[1]
3	**Possible:** Has occurred or may occur approximately once per 5-year period, given the existing control measures.	3	**Moderate:** Localized major / widespread minor: service interruption to consumers (16-30%), loss of available water supply (duration of 6-12 hours, and/or sustained drop in pressure below 260kPa) and/or illness, or city-wide media coverage.	3	**Detectable and/or Good Response:** Visually detectable on operator's rounds; Regular maintenance would discover the problem (such as through facility checks). Good ability to respond, considering resources[1]
4	**Likely:** Has occurred or may occur approximately once per year, given the existing control measures.	4	**Major:** Service interruption to consumers (31-60%), loss of available water supply (duration of 12-24 hours, and/or sustained drop in pressure below 260kPa but above 140kPa) and/or illness, or province-wide media coverage.	4	**Poor Detectability and/or Fair Response:** Not inspected on a regular basis. Would not be detected before a problem was evident; Lab tests that are not done on a regular basis (e.g. quarterly). Fair ability to respond, considering resources available[1].

Likelihood		Consequence		Detectability & Response	
5	**Very likely:** Has occurred or may occur approximately once per month, given the existing control measures.	5	**Catastrophic:** Service interruption to consumers (>60%), loss of available water supply (duration of > 24 hours and/or sustained drop in pressure below 140kPa resulting in loss of fire flow) and/or illness, or national and/or international media coverage.	5	**Undetectable and/or Poor Response:** Cannot detect. Poor ability to respond, considering resources available[1].

Resources supporting the Quality Management System (QMS) include qualified personnel, suitable infrastructure, and essential supplies and services such as equipment, materials, facilities, and external expertise.

The purpose of the risk assessment is to identify potential hazardous events and associated hazards that could impact consumer safety. To address these hazards, we:

a) **assess** and rank associated risks,
b) **identify** control measures,
c) **determine** critical control points (CCPs), and
d) **define** response procedures for risks that cannot be fully controlled.

The assessment process incorporates guidance from the ***Potential Hazardous Events for Municipal Residential Drinking Water Systems*** document.

During annual reviews, the following factors may be considered:

a) **process** changes
b) **equipment** reliability or system redundancy
c) **emergency** events
d) **deviations** from critical control limits
e) **non-conformities** related to the QMS or SOPs

A risk score of 9 or higher is classified as high risk. All disinfection-related items are designated as CCPs regardless of their score. Items that cannot be controlled are not designated as CCPs.

8.0 Risk assessment outcomes

The outcome of the risk assessment process is summarized in the ***QMS 08 – 01 Risk Assessment Outcomes Matrix*** record that documents:

a) the identified potential hazardous events and associated hazards,
b) the assessed risks associated with the occurrence of hazardous events,
c) the ranked hazardous events,
d) identified control measures to address the potential hazards and hazardous events,

e) the identified critical control points (CCP's) and their respective critical control limits (CCL's),
f) procedures and/or processes to monitor the CCLs,
g) procedures to respond to deviations from CCLs, and
h) procedures for reporting and recording deviations from CCLs.

Critical control points and critical control limits

Critical limits are established as indicators that a critical control point has been exceeded. The limits provide staff with a range of acceptable values within which no corrective actions are required.

Critical limits define the point at which staff must take action to prevent escalation of the critical event or to correct the critical event.

- Critical limits may be determined based on regulatory requirements, process monitoring capabilities, off-hours response time, and historical plant performance.
- Process alarms (if available) are normally set at, or near critical limits. Responses to breached critical limits are detailed in the Operations Manual.

Critical control limits are documented in the associated CCP monitoring and/or response procedures.

Critical control points (CCP's) identified in the risk assessment and their respective critical control limits (CCL's) are summarized in the following tables:

CCP	Condition	High CCL	Low CCL
Primary disinfection	Normal operating condition	3.00 mg/l free chlorine	0.50 mg/l free chlorine
Distribution system chlorine residual (Secondary)	Normal operating condition	3.00 mg/l free chlorine	0.30 mg/L free chlorine
Backflow prevention	Ideal system pressures No illegal cross-connections	NA	NA

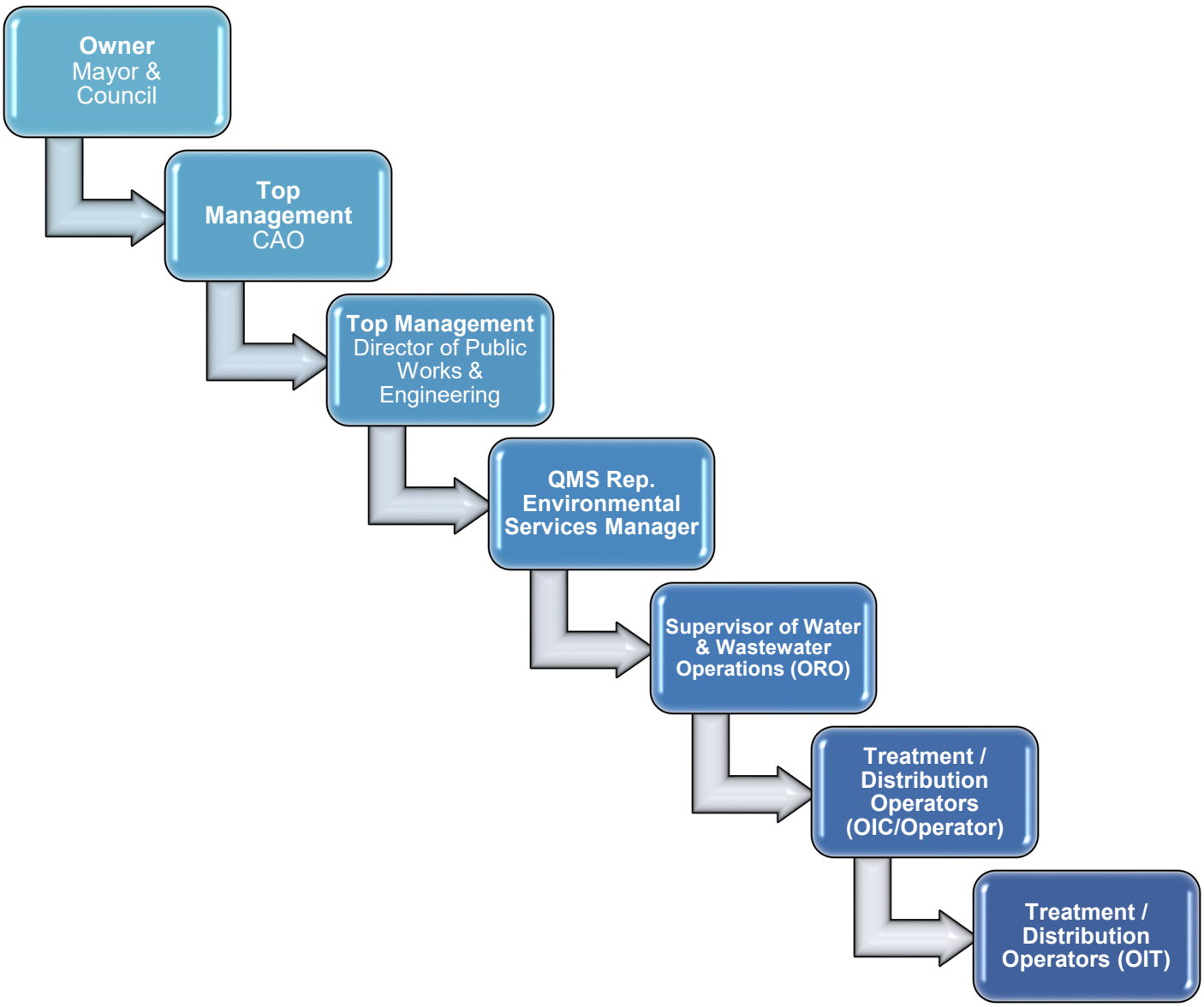
The procedures listed below describe how CCLs are monitored and include response procedures for when CCLs are reached related to the following situations:

- ***QMS 08 - CCP-1 Chlorination Control***
- ***QMS 08 - CCP-2 Control System Failure***
- ***QMS 08 - CCP-3 Backflow Prevention***

Requirements for reporting and recording deviations from CCL's are included in these CCL response procedures.

9.0 Organizational roles, responsibilities, and authorities

The following organizational structure clarifies the order of authority and responsibilities, from the owner of the systems to the operations staff.



The QMS Representative ensures that the responsibilities and authorities for the relevant roles are assigned and communicated throughout the organization (to the owner and operating authority personnel). Descriptions of the roles, responsibilities and authorities of each level within the organization, in respect of the provision of safe drinking water, are provided in the next table.

Role	Responsibilities	Authorities
Owner – Mayor & Council	• Supply safe drinking water to consumers. • Ensure the operating authority is accredited. • Review drinking water system reports and endorse the operational plan prepared by the operating authority and make decisions based on these. • Provide the resources needed to maintain and continually improve the drinking water system (DWS) and quality management system (QMS).	• Report to the public on matters required by legislation. • Provide / review / approve policy. • Review, revise, approve proposed by-laws (or changes), user fees, expenditures, taxation rate. • Provide resources necessary for continual improvement of the DWS / QMS.
Top Management – Chief Administrative Officer (CAO)	• Carry out the commitments described in sections 2 and 3 of this operational plan. • Make recommendations to the Owner ensuring the necessary DWS / QMS resources are provided. • Participate in Management Reviews.	• Report to council and the public. • Provide resources necessary for continual improvement of the DWS / QMS. • May assign a designate to attend review meetings
Top Management – Director of Public Works & Engineering	• Carry out the commitments described in sections 2 and 3 of this operational plan. • Ensure compliance with MDWL. • Make recommendations to the Owner ensuring the necessary DWS / QMS resources are provided. • Participate in Management Reviews.	• Report to council and the public. • Communicate with Owner, public, regulatory agencies on OA's behalf • Recommend improvements or changes. • Provide resources necessary for continual improvement of the DWS / QMS. • May assign designate to attend meetings.

Role	Responsibilities	Authorities
QMS Representative – Environmental Services Manager	• Carry out the commitments and responsibilities described in sections 2 and 4 of this operational plan. • Identify need for resources / infrastructure upgrades • Coordinate infrastructure improvement projects and respond to water servicing requests. • Present reports for Management Reviews.	• Communicate with MECP, Owner, and top management. • Carryout QMS Rep duties described under S.4 of this OP. • May assign a designate to perform duties.
Supervisor of Water & Wastewater Operations (ORO*)	• Act as ORO; oversee DWS operations, maintenance, and optimization activities. • Supervise and coordinate treatment / distribution operators – SOPs are followed & records completed. • Oversee sampling, monitoring and test programs. • Report and act on AWQI's, deviations from SOP's, any issues of non-compliance.	• Coordinate Water Operator training • Receive and follow-up on external complaints. • May assign a designate to perform duties in their absence. • Report to QMS Rep – Manager of Water and Wastewater Operations with documented findings and proceed as instructed
Treatment / Distribution Operators (OIC's **)	• Carryout work in line with QMS Policy commitments. • Operate and maintain treatment and distribution systems safely in accordance with requirements. • Keep records of all activities (e.g. logbook entries, notes of computer records review) as required. • Report and act on AWQI's, deviations from SOP's, any issues of non-compliance. • Attend training and maintain certification requirements.	• Evaluate and test processes and equipment to optimize performance • Make operational decisions: respond to adverse conditions, alarms, and report as required. • Receive and follow-up on external complaints. • Report to ORO with documented findings and proceed as instructed

Role	Responsibilities	Authorities
Treatment / Distribution Operators (OIT's ***)	• Carryout work in line with QMS Policy commitments. • Operate and maintain treatment and distribution systems safely in accordance with requirements and as instructed. • Keep records of all activities (e.g. logbook entries, notes of computer records review) as required. • Report and act on AWQI's, deviations from SOP's, any issues of non-compliance as instructed. • Attend training and maintain certification requirements.	• Report to OIC and/or ORO with documented findings and proceed as instructed.

ORO – Overall Responsible Operator; ****OIC*** – Operator-in-charge, *****OIT*** – Operator-in-training

10.0 Competencies

Competencies required for personnel performing duties directly affecting drinking water quality are described below:

Overall Responsible Operator (ORO)

Overall Responsible Operator	Operators-in-Charge (OIC)
Minimum Class II Water Distribution & Supply Certification and understanding of role within QMS.	Minimum Class I Water Distribution & Supply. Understanding of role within QMS.

Water Operators hired must have a minimum ***OIT*** (Operator-in-training) Certificate in Water Distribution & Supply. They must also understand their role within the QMS. An OIT cannot act as either OIC or ORO until they have attained the minimum Class I certification.

Competency records are retained by the QMS Representative and input into a third-party software program to track training and certification for individual operators.

The municipality recognizes the value of training and development of its employees. Furthermore, it is recognized that continuing education is a requirement for certified and licensed staff of the Water & Wastewater division. The responsibility for such training lies not only with the employer, but also with the individual.

The Water & Wastewater division may administer certain tests, conduct interviews, verify references, and/or request specific documentation as part of the hiring process to verify skills, experience, and knowledge.

To meet the ongoing changes to technology, software, the requirements of applicable legislation, and water operations processes, all operators shall receive training as required by compliance obligations. The training may be provided by qualified employees or contracted subject matter experts.

O. Reg. 128/04, s.29 includes the following table summarizing the required annual training hours for Operators, related to the highest class of drinking water system where the Operator is employed. Middlesex Centre Distribution is a Class II Water Distribution system; therefore, operators must attain a minimum of 35 hours of training per year, and a minimum of 12 hours continuing education units (CEUs) making up part of that 35 hours of training:

The ***QMS 10-01 On-the-job practical training form*** is used to track on-the-job practical staff training. CEU-accredited training providers issue training certificates as the record of training.

Type and Class of Subsystem Where the Operator is Employed	Training Requirements	Minimum Total Hours
Limited Groundwater or Limited Surface Water	7 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	20
Class I Water Treatment or Class I Distribution or Class I Distribution and Supply	7 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	30
Class II Water Treatment or Class II Distribution or Class II Distribution and Supply	12 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	35
Class III Water Treatment or Class III Distribution or Class III Distribution and Supply	14 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	40
Class IV Water Treatment or Class IV Distribution or Class IV Distribution and Supply	14 hours or more of continuing education, with the remaining hours to at least the minimum total as on-the-job practical training	50

https://www.ontario.ca/laws/regulation/040128

O. Reg. 128/04, s. 29, Table.

Personnel are aware of the relevance and affect their duties have on safe drinking water by:

- providing access to training on relevant legislation and related regulations
- staff meetings and orientation sessions reminding staff of roles and responsibilities related to QMS Policy commitments
- interviewing staff during internal audits.

11.0 Personnel coverage

This section describes the coverage provided for Municipality of Middlesex Centre water operations. All operators are informed of scheduling requirements and made aware of the schedule, including on-call duties, via email, with access to schedules on the division's shared network drive.

- Water operations are staffed daily by water operators (***Operators-in-charge***, or ***"OIC's"***) on a regular basis from 7:30 am to 4:00 pm weekdays and 7:30 am to 11:30 am weekends.
- Off-hours on-call coverage is provided 24 hours a day on a rotating basis.

- The Overall Responsible Operator (ORO) is the Supervisor of Water & Wastewater Operations, who must be available at all times, to direct OIC's on the operations of the system and to respond immediately and effectively to emergencies.
- In the event the ORO is not available, a qualified water operator holding a minimum of a Class I certificate will be designated ORO within the requirements of O. Reg 128/03.

After-hours / weekends/ statutory holiday coverage

- The drinking water systems are controlled and monitored by a SCADA program.
- A licensed water operator is on emergency stand-by based on a weekly rotation. The stand-by operator takes the necessary actions to investigate and address any alarm conditions.
- Any alarm condition is routed to an automated dialer that is programmed to call an alarm call centre; that alarm is then relayed, via text message, to the emergency stand-by operator and awaits a response
- The alarm call centre is provided with a list of the operators and management with a schedule of which operator will be covering the emergency stand-by; If for any reason the emergency stand-by operator does not respond, the alarm call centre will text the supervisor then the manager, they will continue trying to contact an operator in the list until they get a response
- The alarm call centre number is also provided to consumers to give them a 24-hour emergency contact
- Weekend and Statutory Holiday coverage/ sampling are the responsibility of the designated stand-by operator, and one other operator scheduled to work those days.

Emergency and vacation coverage

We will ensure continuity of critical operations to provide safe drinking water during emergencies.

- The Supervisor (ORO) ensures that coverage of the Middlesex Centre water operations is continuous: 24 hours/day, 7 days/week. One designated ORO is available on-call 24 hours/day, 7 days/week. An alternate ORO will be designated as required. The name of the ORO is recorded daily in the logbook.
- Middlesex Centre has a pandemic plan that describes pandemic response procedures (such as those implemented during the COVID-19 pandemic); including strategies for the physical separation of staff; establishing remote work options (such as for online training); allows for independent work to be carried out; and if needed, regulatory relief obtained from the Ministry for out-of-ordinary conditions (such as for short-staffing).
- Changes made to O. Reg. 128/04 further clarify rules and expectations in personnel coverage for short-staffing scenarios (e.g. pandemics, strikes, and lockouts) that the Water & Wastewater division would employ to ensure safe drinking water and regulatory requirements are consistently met.

12.0 Communications

This section describes how relevant aspects of the Quality Management System (QMS) are communicated between top management and the Owner, operating authority personnel, essential suppliers and service providers, and the public. These communications will occur as described in ***QMS 12 - 01 Communications Procedure***

13.0 Essential supplies and services

Supplies and services essential for maintaining safe drinking water have been identified, and a list of the contractors providing these resources is maintained in ***QMS 13–01 Drinking Water Essential Services and Supplies***. The table below summarizes the essential supplies and services, their associated quality requirements, the determination of required supply quantities, and the process for ordering them.

Essential supply or service	Quality requirements	Means to ensure procurement
Chemicals and equipment	• All process chemicals and materials interacting with water must meet applicable AWWA and ANSI standards (NSF/60, NSF/61, and NSF 372). • Safety data sheets required for each chemical product used. • Proof of product conformity must be verified upon delivery.	• A **45**-day supply of sodium hypochlorite is maintained. • Sodium hypochlorite is stored at the Komoka Booster Pump Station. • Chemicals can be moved from one facility to another in the event of a shortage or an emergency. • An inventory of routine materials and equipment is carried out. • Supervisor/Manager orders as required.
Distribution system parts	• All distribution system chemicals and parts must meet applicable AWWA and ANSI standards (NSF/60, NSF/61, and NSF 372). • Proof of product conformity must be verified upon delivery.	• A minimum inventory of distribution system parts is maintained. • Supervisor/Manager orders as required. • Parts can be moved from one facility to another in the event of a shortage or an emergency.
Laboratory Services	• Licensed and accredited as per O. Reg. 248/03 Drinking Water Testing Services. • Proof of licence, accreditation, and authorization to conduct tests requested verified with each new contract.	• Contract with qualified, licensed, accredited labs. • Drinking water tests required are verified on the lab's listing of authorized tests.

Essential supply or service	Quality requirements	Means to ensure procurement
Calibration products, equipment, and services	• Instrument calibrations and/or verification by qualified third party. • Reagents for verifications are maintained within expiry dates.	• Tracking of verification / calibration dates (1:12 months). • Operators record lot numbers and expiry dates during each verification, note them on the verification form, and notify management when a standard is nearing expiry.

Operators receiving supplies verify both the quantity and quality of the items and ensure all supporting documentation is retained. Documentation is scanned and forwarded to management, while the original hard copy is kept on file. If an operator determines that the quantity or quality does not meet requirements, management is informed and corrective actions are initiated.

14.0 Review and provision of infrastructure

At least once per calendar year, the Water & Wastewater division prepares capital and operational budgets and presents these to Middlesex Centre's council. Capital budget items are selected through risk-based decisions made by reviewing:

- the latest risk assessment outcomes
- any issues related to the drinking water system's reliability and redundancy
- infrastructure conditions (e.g. age, failure, material, sizing, etc.)
- any long-term infrastructure and asset management plans available.

The Director of Public Works and Environmental Services Manager review the 6-year project plan to update infrastructure priorities, considering the following information:

- official plans
- previous priority lists
- engineering assessments
- MECP inspection reports
- flow data trends
- water quality reports
- operators' suggestions
- risk assessment outcomes
- maintenance records.

The prioritization of capital budget items is documented through ***QMS 14 - 02 Infrastructure Review Meeting Form*** minutes.

The program is reviewed with operating authority staff and presented to Middlesex Centre council by the Director during budget deliberations.

Upon approval of the plan, the Water & Wastewater Operations division begin the process of implementing the approved recommendations over the course of the fiscal year.

15.0 Infrastructure maintenance, rehabilitation and renewal

A summary of the Water & Wastewater division's infrastructure maintenance, rehabilitation and renewal programs is available through a work order system and the asset management plan.

The work order system serves as a reminder system to carryout preventive maintenance activities at their required timelines; and keeps records of these maintenance activities. The preventive maintenance program is based on compliance obligations and on original equipment manufacturer recommendations included as part of equipment manuals.

Service agreements exist with qualified contractors for priority items such as, SCADA system maintenance, and measurement instrumentation calibration services.

When equipment or systems breakdown, reactive maintenance is carried out. The records, for that maintenance, are maintained using "Annual Maintenance Summary" Word document and recorded in logbooks.

Larger and longer-term maintenance activities that are carried out less frequently (e.g. pump rehabilitation, reservoir cleaning) are tracked through asset management plans.

The Water & Wastewater Operations division communicates the summary of and reports on the effectiveness of regular and long-term infrastructure maintenance, rehabilitation and renewal programs to Middlesex Centre council at least once per calendar year through the annual budget process and through annual water quality reports.

16.0 Sampling, testing and monitoring

Sampling, testing and monitoring programs are carried out to provide operators with knowledge to proactively operate the drinking water system; ensure water quality is maintained; and ensure compliance obligations are met. All legislated sampling is conducted as prescribed in the Safe Drinking Water Act and applicable Regulations.

Sampling requirements are planned by the ORO and QMS Representative and carried out by operational staff. All staff who sample, test, and monitor for water quality have received appropriate training and are qualified to do so.

All sampling is conducted by operations staff or in-line Continuous Monitoring Analyzers. Legislated analyses are performed by an accredited laboratory, where operations staff conduct in-house analyses on all other aesthetic parameters.

Sampling calendars are maintained for each drinking water system based on legislative requirements and timeframes. Disinfectant residual, bacteriological, and chemical samples are collected within the distribution system during regular operations and as needed.

Disinfectant residual samples are collected by operators, utilizing a colorimeter to test for free chlorine residuals and enter those test results in an electronic data collection system which is regularly monitored for trending.

Bacteriological and chemical samples are taken in accordance with the accredited laboratory's instructions and tests are carried out by the accredited lab with results reported to LIMS (Laboratory Information Management System) and listed staff. Received reports are checked then stored electronically in the Water & Wastewater network drive.

Additional sampling may be conducted for challenging conditions in addition to the regular schedule to account for out-of-ordinary conditions (e.g. watermain break repairs or related to construction activities within Middlesex Centre).

SCADA provides continuous monitoring with analyzers recording data of critical control points (free chlorine residual) at the point of entry into the distribution system and uploads the recorded data at a minimum of 5-minute intervals to a data reporting and information system. The data is reviewed as required by applicable legislation. The operator on duty verifies online continuous monitoring equipment's accuracy against bench-top results and adjust as necessary.

Records of sampling, testing and monitoring activities are reviewed and maintained by the QMS Representative / Designate to ensure compliance obligations and safe drinking water quality requirements are consistently met.

Relevant sampling, testing and monitoring activities that take place upstream of Middlesex Centre's drinking water systems are carried out by the Lake Huron Primary Water Supply System and the City of London.

Communication

The sampling and testing results are summarized in the annual report. As required by regulation, Middlesex Centre's council is provided with a copy of the Annual & Summary Report, which includes these results.

More immediate communications of sampling and testing results take place when adverse water quality incidents are identified (see section 12.0 Communications).

17.0 Measurement and recording equipment calibration and maintenance

As accuracy of measurement and recording equipment is essential in the provision of safe drinking water, calibration, verification and maintenance of this equipment is critical to instill confidence in the data recorded.

- Measuring and recording equipment is maintained by competent staff and/or third-party service provider.
- As per the Municipal Drinking Water Licence, flow measuring devices and measuring instrumentation that form part of CT monitoring systems (e.g. continuous chlorine

analysers, level sensors) are checked, and calibrated as necessary, at least once every 12 months (or more frequently, if specified) using the method specified by the manufacturer.
- The certificates of calibration and/or records of verification are retained on file, and the instruments bear a record of the most recent calibration / verification date.
- The QMS Rep and/or ORO or designate is responsible for coordinating a competent staff person or third party for the required verification/calibration of the measurement and recording equipment (incl. continuous analyzers, colorimeters and turbidimeters).

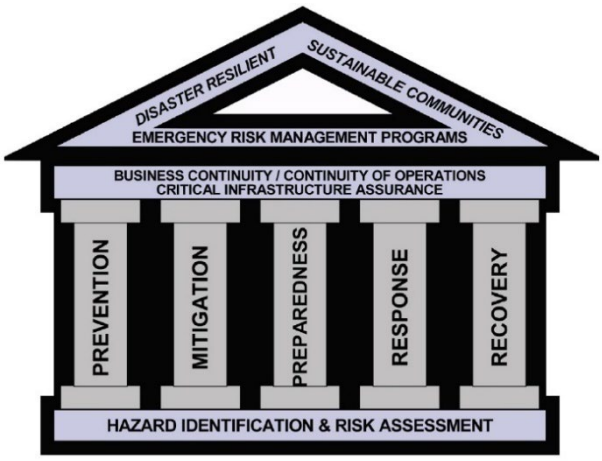
A work order system is used to track the full listing of measurement and recording equipment, their records, next calibration due dates and provide task instructions for the work carried out by internal operations staff. The Operations & Maintenance manual also includes SOP's specific to analyzer calibrations and verifications for those devices performed by staff.

18.0 Emergency management

We maintain a ***state of emergency preparedness*** by:

a) maintaining a list of potential emergency situations or service interruptions (see ***8.0 Risk assessment outcomes***),
b) identifying processes for emergency response and recovery (see ***Water emergency response plans***),
c) conducting emergency training and testing activities,
d) identifying Middlesex Centre and Water & Wastewater Operations responsibilities during emergency situations,
e) referring to municipal emergency planning measures for larger-scale incidents (see ***Middlesex Centre's Emergency Response Plan***), and
f) having an emergency communication protocol in place and an up-to-date ***list of emergency contacts***.

For potential environmental emergencies, Emergency Management Ontario's five core components of emergency management are considered:



- ***Prevention*** – actions taken to prevent an emergency or disaster.
- ***Mitigation*** – actions taken to reduce the effects of an emergency or disaster.
- ***Preparedness*** – actions taken prior to an emergency or disaster to ensure an effective response.
- ***Response*** – actions taken to respond to an emergency or disaster.

- ***Recovery*** – actions taken to recover from an emergency or disaster.

In the context of our QMS, “emergencies or disasters” can contribute to potential adverse impacts.

Where possible, we plan actions to prevent or mitigate these adverse impacts and their consequences.

Where we cannot prevent or mitigate impacts and their consequences, we prepare planned response actions in advance of an emergency to ensure we are effective in our response.

When emergencies do occur, we respond and take actions to recover from them (returning to normal operations).

To be prepared for potential emergencies, we share our ***Water emergency response plan*** with staff, interested parties and people working under our control; periodically test our planned response actions and train our staff.

The emergency communication protocol is activated based on emergency notification levels outlined below:

Emergency Notification: Level 1

Level 1 Emergencies are generally those that can be addressed by the Operating Authority’s own resources and do not require notification beyond that dictated in Ontario Regulation 170/03, *Schedule 16, Reporting Adverse Results and Other Problems*.

Level 1 Emergencies can typically be resolved by following the applicable Emergency Response Procedures.

Emergency Notification: Level 2

Level 2 Emergencies are generally those that can be addressed by the Operating Authority’s own resources but may require additional outside resources as deemed necessary. No additional notification beyond that dictated in Ontario Regulation 170/03, *Schedule 16, Reporting Adverse Results and Other Problems*. Level 2 emergencies require the notification of the owner and require the involvement of the Director, Public Works and Engineering.

If a Boil Water Advisory (BWA) or Drinking Water Advisory (DWA) is to be issued, additional resources as directed by the Public Health Inspector (Medical Officer of Health) may be needed. If an alternate water supply is to be made available for the duration of the incident, additional staff may be needed to secure a water supply and deliver to affected water consumers as soon as it is practical.

Level 2 Emergencies can typically be resolved by following the requirements of the Emergency Response Plan

When issuing a BWA or DWA, the applicable Standard Operating Procedures are to be followed. If an event reaches this level, there is a need for both an effective operations response and effective issues management.

Emergency Notification: Level 3

Level 3 Emergencies are those that cannot be addressed by the Operating Authority's resources. Additional resources may include, but are not limited to, assistance from outside workforces, such as regulators and emergency responders. Notification beyond Ontario Regulation 170/03, *Schedule 16, Reporting Adverse Results and Other Problems* is required, including contacting the Owner as per procedures found in Emergency Response Manual.

If a large scale (typically greater than 200 residences) BWA or DWA is to be issued, additional resources from the Public Health Inspector will be needed. If an alternate water supply is to be made available for the duration of the incident, additional staff will be needed to secure a water supply and deliver to affected water consumers as soon as it is practical. It is possible for an event to initially be responded to as a level 1 or 2, but continuing circumstances could elevate it to a level 3 (e.g., adverse water quality incident results in a boil water order/advisory).

Examples of a Level 3 emergency include:

- Potential or Actual Unsafe Water (large scale Boil Water Order/Advisory)
- Community emergency affecting water supply/distribution
- Large scale water treatment plant or system failure
- Catastrophic watermain break
- Activities that will attract media attention whether warranted as an emergency or not; and
- Loss of service/inability to meet demand

Level 3 Emergencies will require the coordination of several groups/agencies, which may include:

- Fire Chief
- Public Health Inspector (Medical Officer of Health)
- Ministry of the Environment, Conservation and Parks
- Owner

Level 3 Emergencies will require coordination between Operating Authority Emergency Response Plan and Owners Emergency Response Plan

The following chart is to be used to guide in determining which emergency response level is applicable and as such, which resources may be required and will require notification. Not all incidents listed will require all noted resources and needs to be addressed on a case-by-case basis.

Emergency Level	Incident Type (Examples	Potential Resources Required Based on Incident Type	Response Guidance	Person/Group Requiring Initial Notification (Dependent on Incident Type)	Person/Group Responsible for Coordinating Response
1	• Single Adverse Test Result • Localized Watermain Break • Minor Equipment Malfunctions	• Operations Staff • Public Health Inspector • Owner • MECP	• Emergency Response Plan • Equipment manual	• Local MOH • MECP (SAC)	• Water/Wastewater Operations Supervisor • Water/Wastewater Operations Manager or Designate

Emergency Level	Incident Type (Examples	Potential Resources Required Based on Incident Type	Response Guidance	Person/Group Requiring Initial Notification (Dependent on Incident Type)	Person/Group Responsible for Coordinating Response
2	• Multiple Adverse Test Results • Boil Water Advisories Drinking Water Advisory • Loss of Key/Transmission Watermains • Multiple Plant Equipment Malfunctions/Failures • Hazardous Material Spills	• Operations Staff • Public Health Inspector • Owner • MECP • BWA/DWA Notification Resources (notices and delivery Staff) • Outside Contractors and Equipment • Alternate Water Supply	• Emergency Response Plan • Equipment manual • Municipal Emergency Response Plan	• Local MOH • MECP (SAC) • Owner • Fire Chief	• Water/Wastewater Operations Manager or Designate • Water/Wastewater Compliance Coordinator • Director Public Works and Engineering
3	• Multiple Adverse Test Results • Large Scale Boil Water Advisories • Large Scale Drinking Water Advisory • Large Scale Loss of Key/Transmission Watermains • Fire/Large Scale Multiple Plant Equipment Malfunctions/Failures • Large Scale Hazardous Material Spills	• Operations Staff • Public Health Inspector • Owner • MECP • BWA/DWA Notification Resources (notices and delivery Staff) • Outside Contractors and Equipment • Alternate Water Supply	• Emergency Response Plan • Equipment manual • Municipal Emergency Response Plan	• Local MOH • MECP (SAC) • Owner • Fire Chief	• Water/Wastewater Operations Manager or Designate • Water/Wastewater Operations Supervisor • Director Public Works and Engineering

When emergencies arise, we take the opportunity to assemble a cross-functional team to host a debrief session, which includes the discussion of the following key questions:

1 Why did the emergency event / failure occur?
2 What went well? (to identify which practices and planned actions we should continue with)
3 What didn't go well? (to identify opportunities for improvement so that we are better prepared in a similar situation in the future)
4 Other opportunities for improvement / lessons learned.

The information gained from the debrief session would then contribute to the review and revision of emergency plans and contribute to continual improvement of emergency preparedness and response.

19.0 Internal audits

Internal audits are completed annually to provide information on whether our QMS:

- conforms to our own QMS requirements and to the requirements of the Drinking Water Quality Management Standard (DWQMS); and
- effectively implemented and maintained.

At a minimum, the audit criteria shall include the DWQMS. Various elements of the DWQMS can be evaluated as part of each internal audit conducted, as it applies to the specific process or program being audited.

The scope of the internal audit considers existing situations (e.g. system weaknesses have been recognized; have occurred) as well as the original plan for auditing drinking water system processes and process failures or emergency situations programs.

The standard for conducting management system audits, ISO 19011:2018 Guidelines for auditing management systems is used as the method to carry out internal audits. If a sector-specific internal audit-training program is available, the methods presented in the training program can also be followed (e.g. internal auditing for the DWQMS).

For each internal audit conducted, we:

- define what processes and programs form part of that audit's criteria and scope; and
- select auditors and conduct audits so that we ensure objectivity and impartiality of the audit process (for example, no one is auditing their own work); and
- review previous internal and external audit results (to ensure previous actions taken continue to be effective); and
- ensure that results of audits are reported (through Management Review meetings).

Following each audit conducted, an internal audit report is prepared as the record of the audit. The audit report summarizes details of the audit conducted, along with the summary of findings, as applicable: positive findings, non-conformities, and opportunities for improvement.

The findings summarized in the internal audit report are linked to the continual improvement system (see section 21.0). Any non-conformities and opportunities for improvement identified through the internal audit are recorded in the continual improvement report and tracking system established under section 21.0. A future internal and external audit will review the effectiveness of these actions taken.

20.0 Management review

Top management, and/or designate, meets with QMS representative, to review the systems' performance, at planned intervals (at least once every calendar year). From the QMS review, a plan can be developed to ensure that the system is continually improving, and we have maintained the suitability, adequacy and effectiveness of our QMS.

The QMS representative will then compile the information gathered at the meeting into the ***QMS 20-02 Management Review Meeting form*** to present to top management, with the results of the meeting recorded in the same form creating a record of the meeting.

Below is the information that is to be presented to top management and the considerations and requirements that the review presents.

Management Review Inputs

The QMS Representative provides information and data relevant to the following items, 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 effectiveness of the risk assessment process,
e) internal and third-party party audit results,
f) results of emergency response testing,
g) operational performance,
h) raw water supply and drinking water quality trends,
i) follow-up on action items from previous management reviews.
j) the status of management action items identified between reviews,
k) changes 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, and staff suggestions.

Management Review Outputs

a) ensure management review is conducted at least once every calendar year,
b) consider the results of the management review and identify deficiencies and action items to address the deficiencies,
c) provide a record of any decisions and action items related to the management review including the personnel responsible for delivering the action items and the proposed timelines for their implementation, and
d) report the results of the management review, the identified deficiencies, decisions, and action items to the owner.

21.0 Continual improvement

We are committed to continual improvement through the identification and review of:

- **Non-conformities (NCF):** Failures to comply with the DWQMS or established Standard Operating Procedures.
- **Non-compliances (NCP):** Failures to meet requirements of the Safe Drinking Water Act and its applicable regulations.
- **Opportunities for Improvement (OFI):** Identified through audits, inspections, best management practices issued by the Ministry, consumer concerns, and staff suggestions.

- **Continual Improvement Records (CIR):** Documented records of improvements made.

Each Continual Improvement Record (CIR) is then entered into the ***QMS 21-03 Continual Improvement Tracking Spreadsheet***, which is used to track, review, and monitor progress within the continual improvement system. Once an improvement has been verified as effective, the QMS Representative closes the CIR by signing and dating the form and updating the tracking spreadsheet. If actions are found to be ineffective, a new CIR will be initiated.

These items must be documented using the ***QMS 21-01 Continual Improvement Form (CIF)***, in accordance with the ***QMS 21-01 Continual Improvement Procedure***. This procedure is designed to guide staff through completing the form, conducting a root cause analysis using the ***'5 Whys'*** method, and documenting actions taken or planned.

Documents will be retained as described in **5.0 Document and records control**.

QMS Documents

The table below outlines all documents included in this DWQMS, along with their version numbers, version dates, retention periods, and document identifiers. Documents originating from external sources are not included in this list; refer to **5.0 Document and records control** for details on how external documents are managed.

Document Division No.	Document Title	Version #	Current Version Date	Retention Period (years)
01 - 01	Operational Plan - Middlesex Centre -	19	2026-04-22	15
05 - 01	Document & Record Control Procedure	10	2025-11-24	15
05 - 02	Document Template	1	2021-06-08	15
08 - 01	Risk Assessment Outcomes Matrix	4	2025-05-15	15
08 - CCP - 1	Chlorination Control	9	2024-06-20	15
08 - CCP - 2	Chlorination Control System Failure	3	2022-09-12	15
08 - CCP - 3	Backflow Prevention	4	2024-02-09	15
10 - 01	On-the-job Practical Training Form	4	2023-09-12	15
12 - 01	Communications Procedure	8	2024-02-09	15
13 - 01	Drinking Water Essential Services and Supplies	NA	2026-03-27	15
14 - 01	Infrastructure Review Meeting Form	3	2023-09-12	15
20 - 02	Management Review Meeting Form	2	2021-11-05	15

Document Division No.	Document Title	Version #	Current Version Date	Retention Period (years)
21 - 01	Continual Improvement Procedure	9	2025-10-29	15
21 - 02	Continual Improvement Form	10	2026-03-20	15
21 - 03	Continual Improvement Tracking Spreadsheet	NA	As needed	15

Revision History

Version	yyyy-mm-dd	**Description** (current version details plus two previous revisions' details)	By
15	2024-02-06	Changed CCP distribution system chlorine residual high CCL to 3.00 from 4.00	Jocelyn Tyler
16	2024-07-26	Updated all instances of Manager of Water and Wastewater Operations to Environmental Services Manager; replaced qualified operators with competent operators; updated attached Schedule C; updated Primary Disinfection: low CCL to 0.50 mg/L from 0.80; administrative changes for grammar and spelling	Jocelyn Tyler
17	2025-07-25	Various grammatical corrections; removed reference to QMS 21 - 01 Continual Improvement Form (CIF) with Procedure and added QMS 21 - 01 Continual Improvement Procedure and QMS 21 - 02 Continual Improvement Form; removed requirement of OIC's to report to OIC and/or ORO and replaced with just ORO in Element 9	Jocelyn Tyler

Version	yyyy-mm-dd	**Description** (current version details plus two previous revisions' details)	By
18	2026-03-31	Added version number; Corrected Birr and Melrose system names to match permits and licenses; updated quality policy terminology from "customer" to "consumer" to align with the DWQMS handbook; added clarification that operators holding a Class I Distribution & Supply certificate may serve as backup ORO according to O. Reg. 128/04; changed references of "customer" to "consumer" throughout; and refined Element 10 wording for clarity. Element 13 revised to clarify distinction between essential suppliers and emergency contacts, improve alignment with QMS 13-01, enhance descriptions of quality requirements and procurement processes, and update table wording for clarity and operational accuracy; Element 7 updated section to enhance clarity and professional tone. Content was streamlined to remove redundancy, standardize terminology, and present risk assessment processes and criteria more concisely. No changes were made to technical requirements, responsibilities, or procedures. Added QMS Documents list. Removed reference to Water & Wastewater Division in Element 16.0. Corrected Management Review Meeting Form document identifier.	Jocelyn Tyler