



Town of Tecumseh Distribution System

Drinking Water Quality Management System Operational Plan

Water Services
Revision Date: February 25, 2025

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Introduction

Quality Management Systems and Standards have been widely used in North America since the early 1950's. In 1984, the International Organization for Standardization (ISO) released the first version of the ISO 9001 Quality Management System Standard, which is used worldwide.

As recommended by Justice Dennis O'Connor, in Part 2 of the [Walkerton Inquiry](#), the government of Ontario has implemented a licensing program for municipal drinking water systems. The program requires owners and operating authorities of drinking water systems to incorporate the concepts of quality management into water system operation and maintenance. In response to this recommendation, the Ministry of the Environment, Conservation and Parks developed the [Drinking Water Quality Management Standard](#), which sets out the framework for the development of a Quality Management System. Owners and operating authorities of a drinking water system are mandated to implement a Quality Management System by the provincial government through the [Safe Drinking Water Act, 2002](#).

The Town of Tecumseh Drinking Water Quality Management System Operational Plan was first endorsed and committed to by Council in 2008. The Operational Plan provides an understanding of the drinking water system, roles and responsibilities of the owner and operational staff, procedures to operate and maintain the drinking water system and a commitment and endorsement by the owner to provide safe drinking water to consumers.

The Operational Plan provides a foundation for consistency, safety and efficiency, as well as meeting legislative and regulatory requirements

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Quality Management System</h2>
<p>Policy #: OP-01</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 1: Quality Management System

This Operational Plan documents the Drinking Water Quality Management System (DWQMS) for The Corporation of the Town of Tecumseh’s water distribution system. The Corporation of the Town of Tecumseh’s water distribution system is owned and operated by The Corporation of the Town of Tecumseh. The DWQMS for The Corporation of the Town of Tecumseh covers the transmission and distribution of potable drinking water to consumers within the Town of Tecumseh.

Under the terms and conditions of the *2004 Water Agreement* between the Windsor Utilities Commission (WUC), City of Windsor and The Corporation of the Town of Tecumseh, the Tecumseh water distribution system (formerly north and south Tecumseh water distribution systems) is currently supplied by the Windsor water system.

Treated potable drinking water is purchased from the Windsor Utilities Treatment Plant, which is owned by the WUC and is a separately held entity managed by ENWIN Utilities, which operates and manages the production and distribution of potable water.

The potable water enters The Corporation of the Town of Tecumseh’s water distribution system through (12) locations bordering the City of Windsor, Town of LaSalle and the Town of Tecumseh. Each location is metered and monitored using a Supervisory Control and Data Acquisition (SCADA) system. Storage for equalization and peak hour flow of water for Tecumseh is the responsibility of the WUC.

The Corporation of the Town of Tecumseh, in return supplies potable drinking water to the Corporation of the Town of Lakeshore at (4) locations, all bordering Manning Road: Scott Side Road, County Road 42, Little Baseline and Amy Croft.

The Corporation of the Town of Lakeshore owns and operates the production and distribution facilities of potable water within their boundary. The Corporation of the Town of Lakeshore is a fully owned local government and is represented by elected officials of The Town of Lakeshore.

The Corporation of the Town of Tecumseh is connected with the Town of LaSalle at (1) location bordering Howard Avenue. The Corporation of the Town of LaSalle owns and operates the distribution facilities of potable water within their boundary. The Town of LaSalle’s treated potable drinking water is purchased from the Windsor Utilities Treatment.




Quality Management System

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Plant, which is owned by the WUC and is a separately held entity managed by ENWIN Utilities, which operates and manages the production and distribution of potable water. The Corporation of the Town of LaSalle is a fully owned local government and is represented by elected officials of the Town of LaSalle.

Additional details about the Corporation of the Town of Tecumseh's water distribution system are included in [Element 6 – Drinking Water System](#).

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Quality Management System Policy</h2>
<p>Policy #: OP-02</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>


Element 2: Quality Management System Policy

The Corporation of the Town of Tecumseh is committed to supplying a safe, consistent drinking water supply while maintaining strict adherence to all applicable legislative and regulatory requirements. The Corporation of the Town of Tecumseh will strive to achieve these goals through the implementation of a management system and staff competency.

The municipal owners, management and the employees of the Corporation of the Town of Tecumseh who are directly involved in the supply of drinking water, share in the responsibilities of implementing, maintaining and contributing to the continual improvement of the Drinking Water Quality Management System (DWQMS).

The Quality Management System Policy is available on the Town’s website at:

<https://www.tecumseh.ca/live-work-and-explore/water-and-sewer-services/water-quality>

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Commitment and Endorsement</h2>
<p>Policy #: OP-03</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 3: Commitments and Endorsement

This Operational Plan for the drinking water QMS will be reviewed and approved by:

- **Municipal Owner / Operating Authority:** Mayor and Council
- **Top Management:** Chief Administrative Officer, Director of Public Works & Engineering Services and the Manager, Water Services/ORO (Overall Responsible Operator)

Top Management and Owner endorsement includes the following commitments:

- a) Ensuring that a Quality Management System is in place that meets the requirements of the Drinking Water Quality Management Standard (DWQMS),
- b) Ensuring that the Owner/Operating Authority is aware of all applicable legislative and regulatory requirements
- c) Communicating the Quality Management System according to the procedure for communications and
- d) Determining, planning, obtaining and providing the resources needed to maintain, operate and continually improve the water distribution system and the Quality Management System.

The DWQMS Representative will keep the DWQMS document up-to-date and promote continual improvement. All recommended changes are to be approved by the Municipal Owner/Operating Authority. Proof of the Owner/Operating Authorities' and Top Managements' acceptance of changes, commitment and endorsement to the DWQMS and associated documents is confirmed below.

Owner


Top Management

Mayor:

Chief Administrative Officer

Date

Date

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Commitment and Endorsement</h2>
Policy #: OP-03	DWQMS Operational Plan Document Revision Date: February 25, 2025
Public Works & Engineering	Town of Tecumseh Water Distribution System


 Director of Public Works & Engineering

 Date

 Manager, Water Services

 Date

Directors Direction for Operational Plans – Schedule C Form



Ministry of the Environment,
 Conservation and Parks

Print Form

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

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *
 The Corporation of the Town of Tecumseh

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Tecumseh Distribution System	040-101		The Corporation of the Town of Tecumseh	260004969

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

Contact Information for Questions Regarding the Operational Plan i


Primary Contact				
Last Name *	First Name *	Middle Initial		
Dupuis	Brad			
Title *	Telephone Number *	Email Address *		
Manager, Water Services	519-735-2184 ext. 145	bdupuis@tecumseh.ca		
Secondary Contact				
Last Name	First Name	Middle Initial		
Bradley	Nicole			
Title	Telephone Number	Email Address		
DWQMS Representative / Operator	519-735-2184 ext. 141			

Save Form

Print Completed Form

Clear Form

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 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2 style="text-align: center;">Drinking Water Quality Management System Representative</h2>
<p>Policy #: OP-04</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 4: Drinking Water Quality Management Representative

The Corporation of the Town of Tecumseh has designated a DWQMS Representative and an alternate DWQMS Representative:

4.1 DWQMS Representative

Name: Nicole Bradley

Position: DWQMS Representative / Water Operator


4.2 Alternate DWQMS Representative

Name: Brad Dupuis

Position: Manager, Water Services/ORO

The DWQMS Representative is responsible for the following:

- Ensures that processes and procedures needed for the DWQMS are established and maintained,
- Reports to Top Management on the performance of the DWQMS and any need for improvement, as needed or during the Management Review Meetings,
- Ensures that current versions of documents required by the DWQMS are being used at all times and reviews DWQMS documentation and record control,
- With members of Top Management, ensures that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the drinking water system and
- Promotes awareness of the DWQMS throughout Water Services and The Corporation of the Town of Tecumseh.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Document and Records Control</h2>
<p>Policy #: OP-05</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 5: Document and Records Control

This procedure is applicable to the following DWQMS documents:


- a) Operational Plan and associated procedures
- b) DWQMS forms
- c) Equipment manuals
- d) As Built drawings
- e) Applicable drinking water regulations (e.g. [O.Reg. 170/03](#), [O.Reg. 128/04](#), [O.Reg. 169/03](#))

5.1 Creating New or Updating Existing Documents

The need for document changes or for new documents may be identified through audits, management reviews or staff. Any employee of Water Services may request a change to an existing DWQMS document. The request must be made in writing, dated and submitted to the DWQMS representative.

The request must include the following information:

- a) Reason for the new or changed document (one of the following needs to apply):
 - a) Is it required by the DWQMS?
 - b) Will it enhance process control?
 - c) Can it reduce risk?
 - d) Will it support regulatory requirements?
 - e) Will it improve operational efficiency?
- b) A proposed document change or new document content when applicable to Water Services or the Operational Plan.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Document and Records Control</h2>
<p>Policy #: OP-05</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

5.2 Proposed Document Change or New Document Content

The requester shall develop the new / changed document and submit it to the DWQMS Representative for review.

The document shall be reviewed by the DWQMS Representative and changes will be made as required and discussed with the Manager, Water Services/ORO or designate and final approval will be made if applicable.

5.3 Approving Documents

- a) DWQMS related documents may be approved by Municipal Owner/Operating Authority's Top Management: CAO, Director of Public Works & Engineering Services, Manager, Water Services/ORO or designate or the DWQMS Representative.
- b) DWQMS documentation shall be stored at the Water Services office or stored electronically in the Town of Tecumseh's network servers.
- c) Water Services staff has read-only access to the electronic version of the documentation. The Manager, Water Services/ORO or designate, DWQMS Representative and clerical staff have access rights to manage and/or edit the electronic version of DWQMS related documents.
- d) The DWQMS Representative is responsible to ensure that new or changed documents are communicated and/or distributed to the appropriate staff members.
- e) Documents shall be collected, archived, stored and disposed of as per legislation under the [Safe Drinking Water Act, 2002](#) and the Corporation of the Town of Tecumseh Records Retention by-law, By-Law 2018-39.

5.4 Reviewing Documents

The Operational Plan and procedures shall be reviewed by the DWQMS Representative or the alternate DWQMS Representative for applicability and relevance.

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5.5 Document Availability

The current copy of the Operational Plan, procedures and associated documents are retained electronically on the Town of Tecumseh’s network servers and at the Water Services office.

Original sets of equipment manuals or specifications and drinking water regulations are kept at the Water Services office.

Copies of as-builts are stored at the Water Services office and electronically on the Corporation of the Town of Tecumseh’s network servers.

5.6 DWQMS Records Control

This procedure is applicable to all records and documents that demonstrate conformance to the DWQMS and compliance to legislative requirements:

- a) **DWQMS records and documents** include (and are not limited to) Council resolutions (for Operational Plan endorsement), risk assessment outcomes, training information, evidence of communications, procurement-related (e.g. specifications for essential supplies and services), evidence of infrastructure reviews, evidence of equipment maintenance and calibration, emergency preparedness, results of internal and external audits and management review meetings.
- b) **Compliance records and documents** demonstrate compliance with legislative requirements and include (and are not limited to) the records required by the [Safe Drinking Water Act, 2002](#) and related regulations (e.g. [O.Reg. 170/03](#), [O.Reg. 128/04](#), [O.Reg. 169/03](#), etc.), the [Municipal Drinking Water Licence](#) (and its parts, including: [Drinking Water Permit](#), approved [Financial Plan](#) (for water), and all related records (e.g. annual reports, Operator certification, sampling and testing, forms documenting changes to the distribution system, etc.).
- c) **Records** are stored in such a manner as to prevent their deterioration. All records are filed and/or archived (as per retention table) at the Water Services office and the Corporation of the Town of Tecumseh’s network servers.

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5.7 Records Management

Records are stored and protected to ensure that they are kept legible, readily identifiable and are retrievable when they are required by personnel of the Town of Tecumseh’s drinking water system.

Paper records are maintained on-site in file folders, filing cabinets, binders or by other means deemed acceptable by individual responsible for the records. Electronic records are stored on the Town of Tecumseh’s network servers. Regularly scheduled back-ups help protect electronic information from damage or loss.

All employees have access to the files appropriate to their roles and responsibilities. The Town’s network server is also used to facilitate access to and retrieval of the required information.

Minimum record retention periods are determined according to appropriate legislative and regulatory requirements. Retention periods for records not governed by standards or legislation are established through the by-laws of the Town of Tecumseh. Records specific to the Town of Tecumseh’s distribution system have been documented on a record retention table. The records will be disposed of by either recycling, shredding or in the case of electronic documentation archival and deletion.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Drinking Water System</h2>
<p>Policy #: OP-06</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
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Element 6: Drinking Water System

6.1 System Overview

[Element 1 Quality Management System](#) of this Operational Plan provides a general overview of the Town of Tecumseh’s water distribution system and its connections to other Municipalities’ water systems with different owners and operating authorities. Refer to [Map 1: Overall Service Area](#).

The Town is responsible for its own distribution system within the boundaries of Tecumseh and is responsible for any new storage works that may be required to supply its fire flow of water. The Town of Tecumseh also has a 4,546m³ elevated water tower, located in the north end of Tecumseh. This elevated water tower is monitored by Windsor Utilities Commission (WUC) and the Town of Tecumseh through SCADA (Supervisory Control and Data Acquisition) system.

The north Tecumseh water service area (north of Highway 401) includes the urban settlement areas of Tecumseh, St. Clair Beach, Tecumseh hamlet and rural areas north of Highway 401 and is supplied from the Windsor Water System through metering facilities at the Town boundaries on Dillon Drive, McNorton Street, Tecumseh Road, Mulberry Drive, County Road 42, Baseline Road and in the future on Intersection Road.

The south Tecumseh water service area (south of Highway 401) includes the urban settlement areas of Oldcastle hamlet, Maidstone hamlet and rural areas south of Highway 401 and is supplied from the Windsor Water System through existing supply connections at the Town boundaries in Oldcastle hamlet, on the 8th Concession Road, County Road 46, Walker Road and North Talbot Road. The south Tecumseh water service area is also supplied from the Town of LaSalle through a connection at Howard Avenue.

6.2 Service Areas and Water Distribution System Components

North Tecumseh Water Service Area

The distribution system in the north Tecumseh water service area is operated by the Corporation of the Town of Tecumseh and consists of watermains ranging in size from 100mm (4”) to 600mm (24”) in diameter. Refer to [Map 2: North Service Area](#).

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The feeder mains on Dillon Drive, McNorton Street, Tecumseh Road and Mulberry Drive extend from the Town boundary through the centre of Tecumseh (planning area) to the elevated water tower on Tecumseh Road and are interconnected through a new 300mm (12") feeder main on Lesperance Road and the existing 400mm (16") trunk watermain on Lacasse Boulevard. The 600mm (24") diameter feeder main on County Road 22 extends from the Town boundary to Manning Road (County Road 19) and is connected to the 400mm (16") diameter feeder main on Tecumseh Road. The 600mm (24") diameter feeder main on County Road 42 extends from the Town boundary to Lesperance Road and is connected to the 300mm (12") diameter distribution main on St. Alphonse Avenue and on Lesperance Road.

South Tecumseh Water Service Area

The distribution system in the south Tecumseh water service area is operated by the Corporation of the Town of Tecumseh consisting of water mains ranging in size from 100mm (4") to 600mm (24") in diameter. Refer to [Map 3: South Service Area](#).

The feeder mains on 8th Concession Road and County Road 46 supply the northeast end of Oldcastle Hamlet. The 300mm (14") diameter feeder main on Walker Road and North Talbot Street connect to the 300mm (14") diameter trunk watermain on Highway #3 (Talbot Road) which supplies Oldcastle Hamlet, the rural areas south of Highway 401 and Maidstone Hamlet.

Consolidated Water Distribution System

The existing water distribution system will be operated as a single distribution system with connections through the Windsor supply system. In the future, the Town intends to extend trunk water mains from County Road 42 to connect to the south service area to improve system performance. A copy of the approved Water and Wastewater Master Plan can be viewed at the Water Services office or on-line on the Town of Tecumseh's website.

Sampling And Monitoring Disinfectant Residuals

Tecumseh water distribution system staff sample and monitor disinfectant residuals on a regular basis through regulatory sampling programs and during response activities related to consumer water quality calls.

Policy #: OP-06

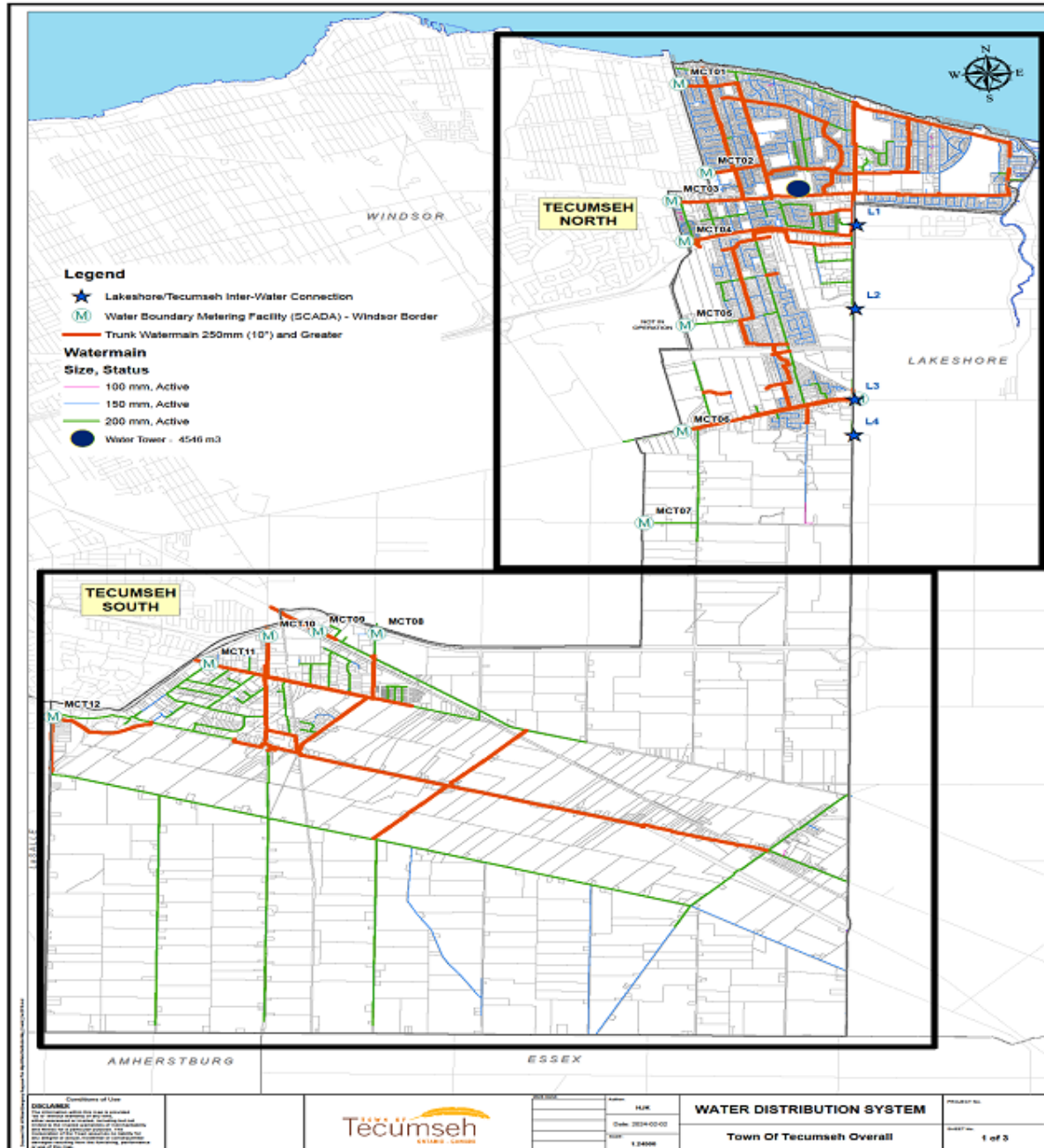
DWQMS Operational Plan
Document Revision Date: February 25, 2025

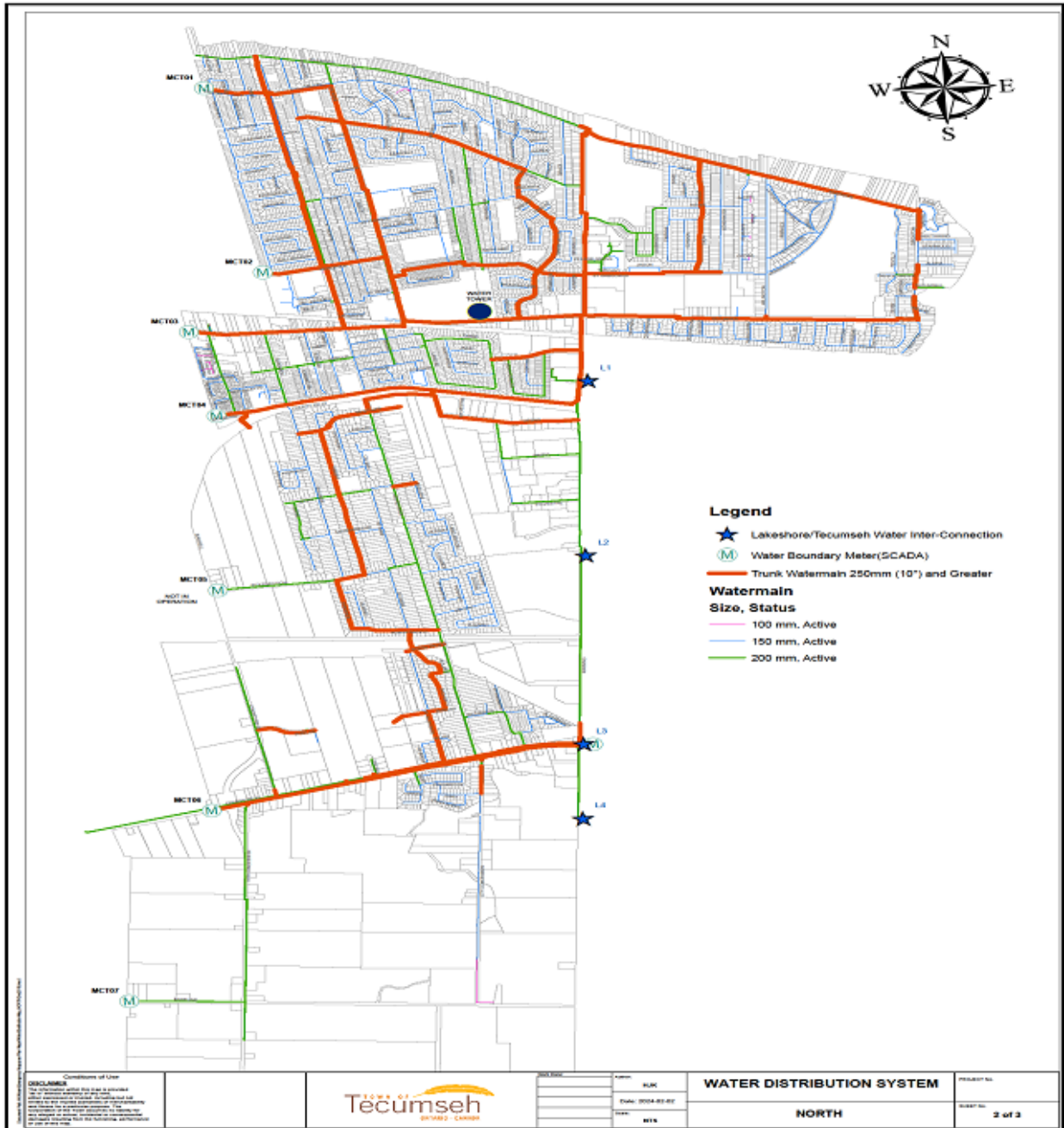
Public Works & Engineering

Town of Tecumseh Water Distribution System


Staff also carry-out work to improve disinfectant residuals within the distribution system through:

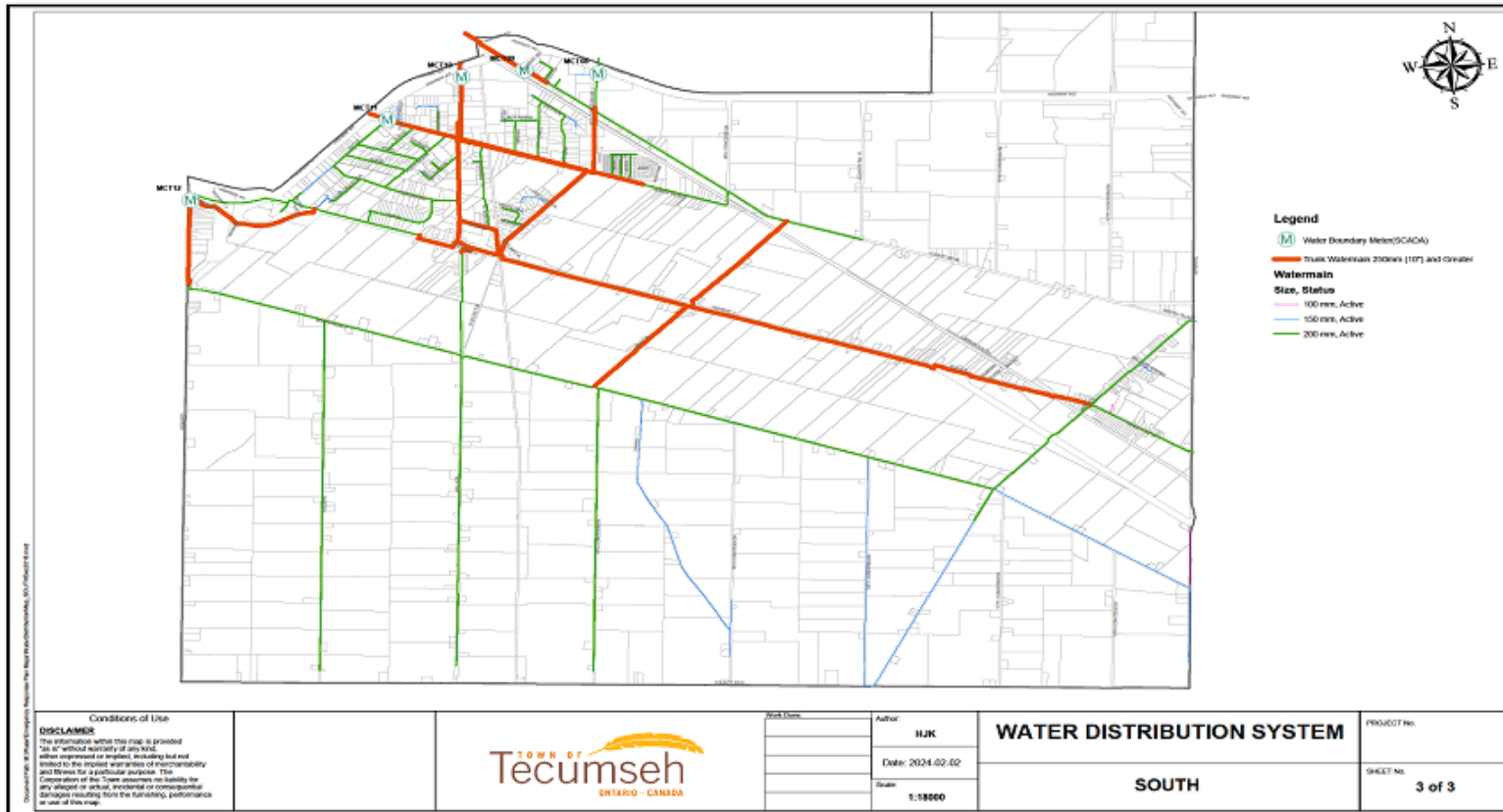
- a) Regular maintenance programs (e.g. flushing),
- b) The practice of cycling water in the elevated water tower (reducing water age)
- c) Optimizing distribution system flows (e.g. close-looping and eliminating system dead ends),
- d) Responding in a timely manner to watermain breaks and carrying out proper disinfection in accordance with the province's [Watermain Disinfection Procedure](#).






Map 2: North service area

 <p>TOWN OF Tecumseh ONTARIO - CANADA</p>	<h2>Drinking Water System</h2>
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Map 3: South service area

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Risk Assessment</h2>
<p>Policy #: OP-07</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
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Element 7: Risk Assessment

7.1 Risk Assessment Team

The Risk Assessment Team shall be no less than a three-member forum and will be made up of the Manager, Water Services/ORO or designate in conjunction with the Water Distribution Operator Leader and DWQMS Representative / Water Operator.

The Risk Assessment Team shall meet once a calendar year to review the validity of the assumptions and the currency of the information used in the risk assessment. A comprehensive risk assessment will be done every thirty-six (36) months unless changing conditions indicate that it should be done more frequently. In each of the risk assessment update activities, the risk assessment outcomes are presented to Top Management at Management Review for their official review and approval.

The Risk Assessment Team considers the Ministry's [Potential Hazardous Events for Municipal Drinking Water Systems](#) (dated April 2022) in the risk assessment process and is to identify and assess:

- a) Potential hazardous events and associated hazards as listed in the Ministry's document and any additional potential hazardous events
- b) The risks with the occurrence of potential hazardous events which could affect the water system
- c) The ranking of hazardous events according to the associated risk
- d) The control measures to address the potential hazards and hazardous events
- e) The critical control points and their respective critical control limits
- f) The associated procedures and/or processes to monitor critical control limits
- g) The procedures to respond to deviations from the critical control limits
- h) The procedures for reporting and recording deviations from the critical control limits
- i) Consideration of the reliability and redundancy of equipment

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Element 8: Risk Assessment Outcomes

The risk assessment will be facilitated by developing and completing risk assessment worksheets. As the Risk Assessment Team conducts this assessment, it will document the results of each step of the risk assessment procedure. The risk assessment process is an on-going activity.

The DWQMS Representative shall ensure that relevant information is circulated to all members of the Risk Assessment Team and update the outcomes of each risk assessment activity (whether it is for the calendar year or 36 month update)

8.1 Risk Assessment Team

The Risk Assessment Team is to complete the tasks outlined in [Element 7: Risk Assessment](#) and [Element 8: Risk Assessment Outcomes and Critical Control Points](#).

The hazard analysis and critical control point (CCP) worksheets are reviewed and used to help in the determination of the results of the risk assessment.

- a) **Getting Started:** Follow the flow and process of receiving and delivering of clean drinking water to the consumer.
- b) **Activity or Process Step:** This column refers to specific areas within a particular process step (pumps, tower, distribution system, etc.).
- c) **Description of Hazard:** This column refers to an incident or situation that can lead to the presence of a hazard. Hazards and hazardous events can result from natural or technological causes or from human activities. At a minimum, the Ministry's Potential Hazardous Events for Municipal Drinking Water Systems (dated April 2022) is considered as part of this assessment. Any additional potential hazardous events and associated hazards also need to be included.
- d) **Potential Result of Hazard:** This column refers to the source of danger or a property that may cause drinking water to be unsafe for human consumption. Biological, Chemical, Physical and Radiological are possible sources of hazards. A description of each hazard is outlined in Table 1: Hazards.
- e) **Comments:** This column refers to any additional information that will help in the description of the hazard or identification.

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- f) **Available Monitoring & Control Measures:** This column refers to any monitoring and control measures in place or need to be identified as a need to be put in place. Control measures must be addressed for all potential hazards and hazardous events regardless of whether they are CCP's or not. This may include monitoring, preventive measures, regular inspection, back-up equipment, written standard operating procedures etc.
- g) **Emergency Procedures or Contingency Plan:** This column identifies any emergency procedures or contingency plan in place to deal with the hazards identified.
- h) **Likelihood, Consequence, Detectability and Total:** These columns refer to the ranking criteria identified in Tables 2, 3, 4, 5.
- i) **Critical Control Point (CCP):** Identifies the total value of the columns and determines if the values are above or below the set threshold.
- j) **Control Procedure:** This column is where you apply some sort of control to prevent or eliminate a drinking water health hazard or to reduce the health hazard to an acceptable level.
 - a. Hazards identified as CCP's or recommended minimum DDP's require control measures which are documented in procedures or work instructions.

Control measures include:

- a) Work instructions
- b) Monitoring, reporting and recording requirements
- c) Support information
- d) Response for a deviation from critical control point
- e) Recovery procedures if necessary
- f) Equipment reliability and redundancies

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8.2 Determining The Level Of Risk For Each Hazard

Using the ranking criteria set out at the bottom of each worksheet estimate the level of risk for each hazard.

Using the criteria set out at the bottom of the worksheet assign a value to each **Likelihood, Consequence and Detectability**.

Once the value of each is assigned, add the three values together **A+B+C=Total**

The **Total** will be ranked as per the criteria in the Total Analysis Table found at the bottom of the worksheet.

If the Total is in the High or Very High range as a hazard, it will require either a CCP procedure or a response procedure.

Table 1: Hazards

Type of Hazard	Description of Hazard
Biological Hazards	Biological pathogens are usually considered the most significant drinking water health risk because the effects are acute. Waterborne biological hazards include bacterial, viral and parasitic organisms. These organisms are commonly associated with fecal wastes from humans and other animals, and some can occur naturally in the environment.
Chemical Hazards	Chemical hazards in drinking water may come from a source or occur in the treatment and distribution system. They include but are not limited to: toxic spills, naturally occurring minerals, heavy metals, dissolved gases (e.g radon), pesticides, fertilizers, endocrine disruptors, personal care products and pharmaceutical residuals, cyanotoxins, flocculants, coagulants, lubricants, copper, iron, zinc and lead from pipes and fittings.

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Type of Hazard	Description of Hazard
Physical Hazards	Sediments are the most common physical hazard associated with drinking water and are of concern as they may carry with them microbiological hazards and interfere with disinfection system efficiency. Other physical hazards include biofilms, pipe materials etc.
Radiological Hazards	Radiological hazards may arise from many-made or natural sources, with naturally occurring chemicals (uranium, radon etc.) most frequently found in groundwater.

Table 2: Likelihood

Description	Likelihood of Hazardous Event Occurring	Rating
Rare	May occur in exception circumstances and has not occurred in the past	1
Unlikely	Could occur at some time, historically has occurred less than once every 5 to 10 years	2
Possible	Has occurred or may occur once or more per year	3
Likely	Has occurred or may occur on a monthly to quarterly basis	4
Very Likely	One of more occurrences on a monthly or more frequent basis	5

Table 3: Consequences

Description	Consequence of Hazardous Event Occurring	Rating
Insignificant	Insignificant impact, little public exposure, little or no health risk.	1

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Description	Consequence of Hazardous Event Occurring	Rating
Minor	Limited public exposure, minor health risk.	2
Moderate	Minor public exposure, health impact on small part of population.	3
Major	Large part of the population at risk.	4
Catastrophic	Major impact for large part of the population, complete failure of systems	5

Table 4: Detectability

Description	Consequence of Hazardous Event Occurring	Rating
Very detectable	Easy to detect, online monitoring through SCADA	1
Moderately detectable	Moderately detectable, alarm present but not in SCADA, may require operator to walk by and notice alarm; problem is indicated promptly by in-house lab test results.	2
Normally detectable	Normally detectable, visually detectable on rounds or through regular maintenance.	3
Unlikely detectable	Unlikely detectable, visually detectable but not inspected on a regular basis; not normally detected before a problem becomes evident; lab tests are not done on a regular basis (e.g. quarterly)	4
Undetectable	Cannot be detected	5


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Table 5: Risk Analysis (Total)

Likelihood + Consequence + Detectability	(Total) Risk Category
3 to 5	Low
6 to 7	Moderate
8 to 11	High
12 to 16	Very High

8.3 Risk Assessment Outcomes and Critical Control Points

Once the values for likelihood, consequence and detectability are assessed, the determination of whether an identified risk is also a critical control point (CCP) will be made.

The control points generally meet the characteristics of an ideal critical control point as they typically are:

- a) Able to prevent, eliminate or reduce hazards
- b) Monitored, preferably in real time
- c) Able to have determined control limits and
- d) Essential to ensure safety of the drinking water.

These control points also provide important barriers in the multiple barrier process to ensure that pathogens that could be present in the water are effectively inactivated and/or removed and that secondary disinfection is maintained in the distribution system. CCP's often have corresponding critical control limits, which are identified in the following tables:

Table 6: CCP – Loss of Chlorine Residual (Secondary Disinfection)

Critical Control Point (CCP)	Critical Control Limit (CCL)	Monitoring Process and/or Procedures	Response Procedure
Loss of Chlorine Residual (Secondary Disinfection)	Free Chlorine Target Residual in the Distribution System:	c) Certified and competent operators performing regulatory	Emergency Response Procedures:

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Critical Control Point (CCP)	Critical Control Limit (CCL)	Monitoring Process and/or Procedures	Response Procedure
	a) > 0.20 ppm (operational minimum) Reportable under the SDWA: b) 0.05ppm	sampling, testing and monitoring of system residuals as applicable. d) Watermain flushing programs. e) Installation of blow-offs and auto-flushers in dead ends. f) Regular samples taken and analyzed for chlorine residual. g) Water quality concerns tracked through consumer complaints. h) SOP-002: Distribution Sampling for Chlorine Residuals.	<ul style="list-style-type: none"> • 2.1 Boil Water Advisory • 2.2 Adverse Laboratory Water quality results • 2.3 Loss of Secondary Disinfectant (chlorine) • 2.14 Water Shortage • 2.16 Establishing Potable Water Filling Stations • Response to consumer calls • Service request tracking and monitoring repair and system rehabilitation • Use of appropriately certified and competent contractors and suppliers

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Table 7: CCP – Commissioning New Watermains Causing Contamination

Critical Control Point (CCP)	Critical Control Limit (CCL)	Monitoring Process and/or Procedures	Response Procedure
Commissioning New Watermains Causing Contamination	<p>Free Chlorine</p> <p>Target Residual in the Distribution System:</p> <p>i) > 0.20 ppm (operational minimum)</p> <p>Reportable under the SDWA:</p> <p>j) 0.05ppm</p>	<p>k) Certified and competent operators performing microbiological sampling, testing and monitoring of chlorine residuals throughout the watermain commissioning process</p> <p>l) Watermain flushing procedures during commissioning of watermain</p> <p>m) Pressure testing and monitoring proces.</p> <p>n) SOP-007: Commissioning New Watermains</p>	<p>Emergency Response Procedures:</p> <ul style="list-style-type: none"> • 2.1 Boil Water Advisory (if bacteriological) • 2.2 Adverse Laboratory Water quality results • 2.4 Contamination of Water Transmission System • Shortage • 2.16 Establishing Potable Water Filling Stations • Contact MOH, MECP, and SAC • Communicate water advisory, if issued by MOH • Follow corrective actions required



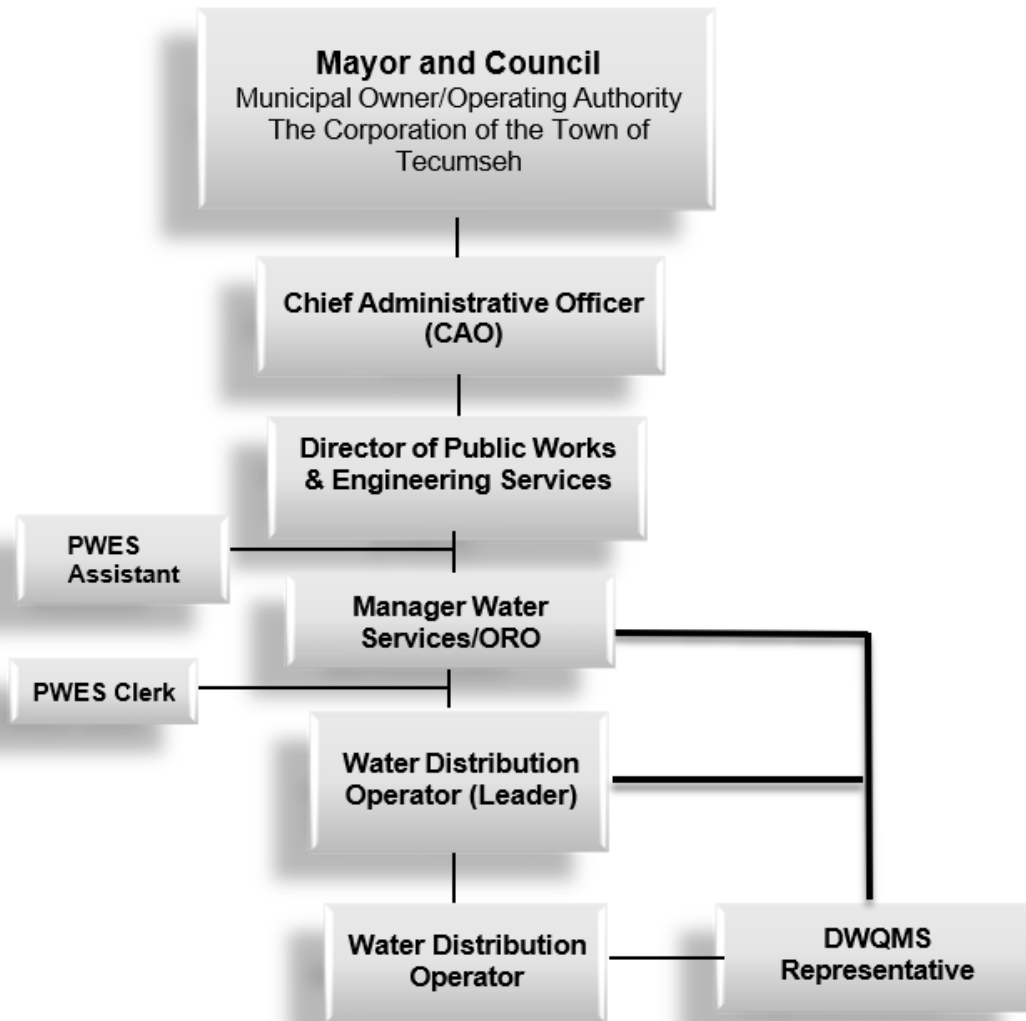
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			by <u>O. Reg.</u> <u>170/03.</u>
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Element 9: Organizational Structure, Roles, Responsibilities and Authorities


9.1 The Corporation of the Town of Tecumseh Water Services Organizational Structure




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9.2 Operational Roles, Responsibilities, and Authorities


Position	Responsibilities	Authorities	Required Competencies
<p>Municipal Owner, Operating Authority</p> <p>Mayor and Council</p>	<ul style="list-style-type: none"> Responsible for the legal oversight and provision of safe drinking water within The Corporation of the Town of Tecumseh’s water distribution system and the DWQMS as regulated under the Safe Drinking Water Act, 2002. Ensure compliance with applicable legislation and regulations while endorsing the DWQMS and providing a representative to the DWQMS management review committee. Participate in Council meetings and Council committee meetings and meetings of other bodies to which they are appointed by Council. Consider information about the operation or administration of the Municipality from the CAO and/or other appropriate Town staff. Evaluate policies and programs such as bylaw enforcement, taxation, property permits and inspections, planning, public works (roads, water and sewer), parks and recreation, fire services and police services. 	<ul style="list-style-type: none"> Authorize and provide resources, finances and administrative authority to improve or change the drinking water system, the distribution of safe drinking water and the DWQMS. Approve and review by-laws and policies for the management and operation of Town assets. Hire, evaluate, discipline or terminate Town Management staff and contracted service providers. 	<ul style="list-style-type: none"> https://www.ontario.ca/document/ontario-municipal-councillors-guide/1-role-council-councillor-and-staff

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Position	Responsibilities	Authorities	Required Competencies
<p>Top Management Chief Administrative Officer</p>	<ul style="list-style-type: none"> • Direct supervision of senior department directors, managers, operations and management of all Town departments. • Ensure that policies and direction from Council are effectively communicated to senior department managers and are carried out by the appropriate departments. • Endorse the ongoing development of the DWQMS and participate on the DWQMS Management Review Committee. 	<ul style="list-style-type: none"> • Communicate information between senior department managers and Council and to convey and mandate Council policy. • Request expenditure approval from Council and implement approved expenditures. • To staff, hire, evaluate, discipline or terminate utility management staff (within the guidelines of the Corporation of The Town of Tecumseh and any collective agreements). 	<ul style="list-style-type: none"> • Masters degree in one of: business, accounting, engineering, planning, law or public administration or other related field. • Certified Municipal Officer (CMO) designation an asset. • Shall possess at least 10 years progressive experience in senior level management. • Superior organizational, communication and human relations skills with sound decision making ability.
<p>Director of Public Works & Engineering Services</p>	<ul style="list-style-type: none"> • Ensure safe, reliable and compliant management and operation of all of the Towns physical infrastructure as well as the Water Distribution system. 	<ul style="list-style-type: none"> • Develop, evaluate, prioritize and implement long term department needs and administrative and technical policies. 	<ul style="list-style-type: none"> • University degree in engineering with P.Eng. designation in Civil Engineering or related field.

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Position	Responsibilities	Authorities	Required Competencies
	<ul style="list-style-type: none"> • Direct supervision of Engineering Services and Public Works supervisors and administrative staff. • Coordinate budget preparation and preparation and presentation of department reports to Council. • Administer the Collective Bargaining Agreement for department personnel. • Ensure adequate and competent staff and their appropriate training. • Investigate and respond to public complaints and inquiries. • Represent Municipal Owner on DWQMS Management Review committee. 	<ul style="list-style-type: none"> • Prepare, review and approve design specifications including contractors and equipment. • Recruit, hire, evaluate, discipline or terminate Public Works and Engineering Services staff in accordance with Town policies. • Communicate directly with regulatory agencies and the public on behalf of the Town Municipal Owner/Operating Authority. • Appoint temporary ORO in absence of designated ORO 	<ul style="list-style-type: none"> • Minimum 10 years progressive experience in the engineering field with exposure to the Municipal structure and the roles within. • 5 years senior management experience with responsibilities in the direction of Public Works & Environmental Services operations. • Possess strong leadership, supervisory, interpersonal, communication and public relations skills. • Advanced computer literacy skills, analytical problem solving, decision making, organizational and negotiation skills required.

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Position	Responsibilities	Authorities	Required Competencies
<p>Manager, Water Services / ORO</p>	<ul style="list-style-type: none"> • Ensure efficient, safe and compliant operation of the water distribution system. • Provide supervision, technical direction and training to Water Services staff. • Maintain provincial operator certification. • Assist the Director of Public Works & Engineering Services with the water distribution budget and long-term planning. • Communicate with regulatory authorities to ensure compliance with applicable legislation. • Prepare and present Municipal distribution information to Council, Town staff, Managers and the public. • Serve as the alternate DWQMS representative and participate on the DWQMS Management Review Committee. • Investigates and responds to public complaints and inquiries. 	<ul style="list-style-type: none"> • As the ORO (overall responsible operator); shall be available to be contacted 24/7. If unavailable, arrangements will be made with the Director of Public Works & Engineering Services for a designated replacement ORO. • Develop, approve and implement operations, maintenance, safety policies, Town by-laws and procedures relating to water distribution. • Supervise and inspect the work of contractors and order/purchase necessary supplies and services. • Evaluate and prioritize the long-term rehabilitation and upgrade to the Town's water infrastructure. • Participate in hiring, evaluating and disciplining of unionized and non-unionized staff. 	<ul style="list-style-type: none"> • University degree or college diploma in Civil Engineering or Environmental Services. • Minimum of Class 2 Water Distribution and Class 1 Wastewater certificates. • Minimum of 5 to 10 years experience in municipal government with experience in water and wastewater. • Be in good standing with Professional Engineers Association or Ontario Association of Certified Engineering Technicians & Technologists. • Extensive knowledge of water & wastewater utility management, operations and practices.

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Position	Responsibilities	Authorities	Required Competencies
			<ul style="list-style-type: none"> • Comprehensive knowledge of current applicable provincial laws and regulations regarding municipal water and wastewater operations, maintenance and construction. • Must have experience in supervision, training and coaching of staff. • Must demonstrate excellent organizational, communication, interpersonal, report writing skills. Show computer literacy in a variety of programs.
<p>DWQMS Representative / Operator and Designated DWQMS</p>	<ul style="list-style-type: none"> • Promote awareness of DWQMS, applicable legislative and regulatory requirements as relating to job duties and report DWQMS results to staff, Municipal Owner/Operating Authority and Top Management as required. 	<ul style="list-style-type: none"> • Will assume the overall managing role, responsible for overseeing the development and implementation of the DWQMS. 	<ul style="list-style-type: none"> • University degree or college diploma in Civil or Environmental Technology. • Have a valid Class 1 Water Distribution

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Position	Responsibilities	Authorities	Required Competencies
<p>Representative Alternate</p>	<ul style="list-style-type: none"> • Review and approve DWQMS documentation and ensure it is prepared and maintained as required. • Provide staff with technical and administrative consultation relating to DWQMS document preparation and implementation. • Implements and oversees document control procedure. • Co-ordinates internal and external audits and acts as audit liaison. • Communicate DWQMS information to staff and facilitate all aspects of training when required. • Investigate and respond to public complaints and inquiries. 		<p>certificate as per O.Reg 128/04.</p> <ul style="list-style-type: none"> • 1 to 4 years experience with drinking water compliance requirements and DWQMS activities. • Will possess a working knowledge of all applicable MECP, MTO and MOL regulations and legislation. • Show computer literacy in a variety of programs. • Excellent interpersonal, leadership, organizational and communication abilities. • Must be able to proficiently operate tools and equipment associated with the day-to-day operations of a water distribution system.

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Position	Responsibilities	Authorities	Required Competencies
			<ul style="list-style-type: none"> • Hold a valid DZ driver's license.
<p>Water Distribution Operator (Leader)</p>	<ul style="list-style-type: none"> • Oversees day-to-day activities relating to the maintenance of the water distribution system. • Communicates and liaises with the Manager, Water Services/ORO or designate, Water Distribution Certified Operators and Clerical staff. • Works with the Manager, Water Services/ORO or designate in completing the Water Distribution Certified Operators performance assessments. • Assists with and has input into developing procedures and processes for assuring water quality. • Investigate and respond to public complaints and inquiries. 	<ul style="list-style-type: none"> • Directs Water Distribution Certified Operators in day-to-day operations of the water distribution system. • Orders day-to-day supplies as needed. • Respond to public complaints as relayed from Manager, Water Services/ORO or designate, Clerical staff and/or after-hours answering service. 	<ul style="list-style-type: none"> • University and/or community college diploma in Environmental Technology or related field. • 4 years experience in the Town of Tecumseh (or Municipal) water distribution system. • Must hold Class 1 Water Distribution certificate as per O. Reg 128/04. • Will possess a working knowledge of all applicable MECP, MTO and MOL regulations and legislation. • Must be able to proficiently operate tools and equipment associated with the day-

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Position	Responsibilities	Authorities	Required Competencies
			<p>to-day operations of a water distribution system.</p> <ul style="list-style-type: none"> • Excellent communication, managerial, supervisory and administrative skills. • Hold a valid DZ driver's license.
<p>Water Distribution Operator</p>	<ul style="list-style-type: none"> • Perform weekly testing of drinking water. • Perform regular maintenance of the water distribution system. • Reports any incidents of non-compliance. • Responds to repairs. • Investigates and responds to public complaints and inquiries. 	<ul style="list-style-type: none"> • Monitor process and equipment of day-to-day operations of the water distribution system. • Respond to public concerns as relayed from the Manager, Water Services/ORO or designate, Clerical Staff, Water Distribution Certified Operator (Leader) and/or after-hours answering service. 	<ul style="list-style-type: none"> • Minimum grade 12 secondary school diploma. • Must hold Class 1 Water Distribution certificate as per O.Reg 128/04. • Will possess a working knowledge of all applicable MECP, MTO and MOL regulations and legislation. • Must be able to proficiently operate tools and equipment associated with the day-

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Position	Responsibilities	Authorities	Required Competencies
			<p>to-day operations of a water distribution system.</p> <ul style="list-style-type: none"> • Shall demonstrate technical and leadership abilities with excellent oral and written communication skills. • Hold a valid DZ driver's license.
<p>Clerical Staff</p>	<ul style="list-style-type: none"> • Communicates/liaises with the following: Director of Public Works & Engineering Services, Manager, Water Services/ORO or designate, Water Distribution Certified Operator (Leader) and Water Distribution Certified Operator. • Respond to and document public inquires dealing with water issues. • Prepares reports as required by regulations and circulates to management. • Assist with DWQMS documentation and record control. • Assist with communication during emergency situations. 	<ul style="list-style-type: none"> • Update and implement document changes as directed by applicable administration as identified in the Water Services Organizational Chart. 	<ul style="list-style-type: none"> • Possess a diploma in Office Administration. • Demonstrate excellent computer and communication skills, including proficiency in Microsoft Office. • Shall have excellent time management skills to manage multiple overlapping deadlines and time frames.

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Position	Responsibilities	Authorities	Required Competencies
	<ul style="list-style-type: none"> Investigates and responds to public complaints and inquiries. 		

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Element 10: Competencies

The MECP has classified the Corporation of the Town of Tecumseh a “Water Distribution Subsystem Class II”. The following identifies the competencies required of staff whose performance may have a direct impact on drinking water quality

10.1 Municipal Owners/Operating Authority


Municipal Owners/Operating Authorities who have complete legal oversight of the Corporation of the Town of Tecumseh’s water distribution system and the DWQMS are briefed on operating conditions and are provided updates by senior management to ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water and shall maintain records of these activities. They may also attend relevant drinking water training courses, conferences and seminars to assist in their overall knowledge pertaining to regulatory and legislative requirements.

10.2 Director Public Works & Engineering Services

The Director shall possess advanced theoretical and working knowledge of administrative skills expected of a senior level manager. In addition, the Director shall possess an intermediate theoretical and working knowledge of the [Safe Drinking Water Act, 2002](#) and applicable regulations and legislation and the Corporation of the Town of Tecumseh’s drinking water distribution system. When necessary, will appoint a temporary Overall Responsible Operator (ORO) position, in absence of the designated ORO.

10.3 Manager Water Services/ORO

Manager Water Services/ORO shall possess advanced theoretical and working knowledge of administrative skills. The Manager, Water Services/ORO shall possess advanced theoretical and working knowledge of the [Safe Drinking Water Act, 2002](#) and applicable regulations and legislation. The Manager Water Services/ORO should also have a good working knowledge of the Corporation of the Town of Tecumseh’s drinking water distribution system and its components. Is the Overall Responsible Operator (ORO) and therefore must be available to be contacted 24/7. The ORO will make arrangements with the Director of Public Works & Engineering Services for a designated ORO in the event he/she is not available and cannot be contacted.

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10.4 New Operators in Training (OIT's)

Must complete the OIT Water Distribution Prep Course and OIT exam as per MECP [O.Reg. 128/04](#) requirements.

10.5 Class I Water Distribution Operator

The operator must successfully complete the Class I Water Distribution exam and obtain the required training credits to become a Class I Water Distribution Operator as per MECP O. Reg. 128/04 requirements.

10.6 Class II Water Distribution Operator

The Class I level operator can advance to a Class II Water Distribution Operator by successfully completing the Class II Water Distribution exam and obtaining the required training credits as per MECP [O. Reg. 128/04](#) requirements.


10.7 Class III Water Distribution Operator

The Class II level operator can advance to a Class III Water Distribution Operator by successfully completing the Class III Water Distribution exam and obtaining the required training credits as per MECP [O. Reg. 128/04](#) requirements.

10.8 Water Distribution Operator

- a) Water Distribution Operator Competencies
 - i. Water distribution operators shall possess an OIT or Class I operating certificate as per [O. Reg. 128/04](#) requirements.
 - ii. The ORO shall have minimum Class II water distribution certificate as per [O. Reg. 128/04](#) requirements.

- b) Water Distribution Operator Skills and knowledge
 - i. The Water Distribution Operator performs a variety of skilled and semi-skilled tasks independently or as part of the Water Service team including:
 - Safe operation of heavy machinery and locate/metering equipment
 - Utilization of GIS mapping software and application of working knowledge in interpreting blueprints/drawings to aid in the construction, repair and maintenance of the water distribution system as well as various public buildings and facilities.

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- Collaborates with private contractors as authorized and oversees and inspects the work to ensure projects are performed and completed as planned.
- Maintaining work and preventative maintenance records, addressing public inquires and customer billing issues, completing infrastructure locates per Ontario One Call.
- On a regular basis the Water Distribution Operator liaises with municipal staff, contractors/suppliers, Ministry officials/inspectors, auditors and the general public maintaining co-operative working relationships with all groups
- Ensures compliance and conformance to current standards legislated by the MECP. The Water Distribution Operator is required to maintain detailed and concise records and logs.

c) Methods to Develop, Assess and Maintain Competencies

The following methods develop, assess and maintain the required competencies for personnel performing duties directly affecting drinking water quality:

i. Identify Training Requirements


The Manager, Water Services/ORO or designate and Water Distribution Operators must meet the training requirements as per MECP [O. Reg 128/04](#) requirements.

The required competencies include but are not limited to the following:

- Class I Water Distribution Operator Certificate
- Understanding the quality management system
- Familiarity with the Town's water distribution system
- Knowledge of regulations and identifying, reporting and responding to adverse drinking water conditions as required by regulations.

ii. Assess Competencies

The Corporation of the Town of Tecumseh may administer certain tests, conduct interviews, verify references and/or request specific documentation

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as part of the hiring process in order to verify skills, experience and knowledge.

In order to meet the on-going changes to technology, software, the requirements of [O. Reg 128/04](#) and Water Services processes, Water Distribution Operators shall receive training as required by [O. Reg 128/04](#) at a minimum. The training may be provided on or off-site by qualified employees or contracted subject matter experts. Training effectiveness is evaluated when appropriate through testing or a demonstration of knowledge gained.

Training records are maintained by the Manager, Water Services/ORO or designate and/or the DWQMS Representative, stored in Town of Tecumseh network server and filed in hard copy in the Water Services office as proof that the required training has been successfully completed. The Manger, Water Services/ORO is responsible for ensuring that all identified training is completed.

iii. Maintain Competencies

The Manager, Water Services/ORO will ensure that the Standard Operating Procedures and Quality Management System are reviewed every calendar year. Furthermore, the Water Distribution Operators will meet or exceed the training hours required by MECP [O. Reg 128/04](#) to maintain their Water Distribution Operator Certificate. Training hours and courses completed by the Water Distribution Operators are logged and tracked by the Manager, Water Services/ORO or designate and/or the DWQMS Representative.

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Element 11: Personnel Coverage


Water Services is staffed as per the Collective Agreement between the Corporation of the Town of Tecumseh and the outside bargaining workers represented by CUPE Local 702.1. The Manager, Water Services is designated as the ORO. After hours calls are managed by the Water Distribution Operator leader using an emergency call-out service with the staff seniority list for overtime as set out by the collective agreement.

11.1 Regular Hours Coverage

- a) All work orders are generated through the Water Services office during regular working hours.
- b) Created work orders will have a date, time of call, location of the problem, details of the problem, name and contact information of person initiating service call
- c) Work orders are distributed through the Manager, Water Services/ORO or designate and the Water Distribution Operator Leader.

11.2 After Hours Coverage

- a) The Water Distribution Operator leader receives a call from the answering service, assesses the information and provides direction.
- b) If the Water Distribution Operator leader cannot be contacted, the call will move to the next Water Distribution Operator according to seniority.
- c) When necessary, Water Services staff is called in to do repairs and/or deal with public inquires.
- d) All reports and forms are authorized by the Manager, Water Services/ORO or designate.
- e) Reports, forms and work orders will have a date, time of call, location of the problem, details of the problem, name and contact information of person initiating service call.
- f) If required, sub-contractors are approved by the Manager, Water Services/ORO or designate and are used in discretion of the Water Distribution Operator.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Personnel Coverage</h2>
<p>Policy #: OP-11</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>


11.3 Pandemic, Strikes and/or Lockouts

The provisions for personnel coverage during situations where staff may not be available to work include the following:

- a) Pandemic
 - Should a pandemic occur the Town will request assistance from surrounding municipalities with qualified licensed operators as well as private contractors.
 - If needed the Town will also contact the MECP to request advice or assistance should an emergency of this nature arise.

- b) Strikes and/or Lockouts
 - The Manager, Water Services or designate is designated as the Overall Responsible Operator (ORO) for the distribution system and has the appropriate Water Distribution Operator Certificate. In the event of a union strike and/or lockout, the ORO is qualified to maintain the water distribution system.
 - In the event the ORO is not available or if additional staff is required to maintain the distribution system, the Town will request assistance from surrounding municipalities with qualified licensed operators as well as private contractors.
 - If needed the Town will also contact the MECP to request advice or assistance should an emergency of this nature arise.

In the event of either a) pandemic or b) strikes and/or lockouts, [O. Reg 819/21](#) may also be used to provide the Town with direction during those situations where staff are not available to work.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Communications</h2>
<p>Policy #: OP-12</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 12: Communications

The DWQMS representative shall ensure the Municipal Owner/Operating Authority and Top Management is provided with a current copy of the operational plan. The DWQMS representative shall keep the Municipal Owner/Operating Authority and Top Management informed of any changes to the DWQMS as a result of Management Review and other DWQMS issues when necessary.

A current version of the operational plan is available to staff at the Water Services office. A hard copy of the operational plan will be kept at the Water Services office and an electronic copy can be found on the Town of Tecumseh network server. Personnel will be informed of DWQMS changes or updates through regular staff meetings with the DWQMS representative or the Manager, Water Services/ORO or designate.

Any suggested revisions or recommendations to the operational plan submitted by staff will be documented and provided to the DWQMS representative.

Town of Tecumseh Water Services will utilize the Town’s website to allow the public and essential suppliers to communicate with all levels of the Town’s Water Services and Management. The Manager, Water Services/ORO or designate will collect and analyze all data communicated to the Town. The Manager, Water Services/ORO or designate will then make changes if necessary or make recommendations to the Municipal Owner/Operating Authority of any changes or improvements identified.

Essential suppliers and service providers receive relevant DWQMS information regarding product service requirements from the purchaser in the form of quality / quantity specifications and timeframes, as required by regulations, the *Municipal Drinking Water Licence* and *Drinking Water Works Permit*.

The Corporation of the Town of Tecumseh suppliers and service providers are referred to a copy of the current *Water Distribution System Standards and Material Specifications* which is available on the Town’s website or in hardcopy from the Water Services office (1189 Lacasse Boulevard, Tecumseh ON N8N 2C7).

The DWQMS policy is available to the consumers of the Corporation of the Town of Tecumseh water distribution system at the Water Services office, Town Hall and can be viewed on the Town’s website <https://www.tecumseh.ca>

Policy #: OP-13

DWQMS Operational Plan
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Public Works & Engineering

Town of Tecumseh Water Distribution System

Element 13: Essential Supplies and Services

A list of supplies and services for the Town of Tecumseh’s Water Services has been developed. The list includes suppliers and service providers for each essential supply and service. A secondary source is also listed for each supply and service to ensure supplies and services are available as needed. This list is reviewed by the Manager, Water Services/ORO or designate to ensure that is current and up to date

All supplies and services shall meet AWWA and NSF/ANSI standards. Any purchases of these supplies and services shall be in accordance with the Town of Tecumseh’s [By-law 2021-60](#).

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Review and Provision of Infrastructure</h2>
<p>Policy #: OP-14</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>


Element 14: Review and Provision of Infrastructure

Infrastructure for the Corporation of the Town of Tecumseh consists of a water distribution system, water tower and monitoring equipment at the boundary meters. The Corporation of the Town of Tecumseh has in place a [Water & Wastewater Master Plan \(2018\)](#), which has been accepted and adopted by the Municipal Owners/Operating Authority.

Rehabilitation and renewal of the water distribution system is performed on a “as needs” schedule in association with the Water & Wastewater Master Plan. Capital and operational money is allocated each calendar year for improvements to the system.

The Director of Public Works & Engineering Services under the advisement of the Manager, Water Services/ORO and Manager, Engineering Services will identify areas needed for rehabilitation and renewal taking into consideration a risk assessment.

A report detailing the maintenance programs, any requirements for infrastructure rehabilitation and renewal is prepared annually by the Director of Public Works & Engineering Services and the Director, Financial Services/Treasurer. The capital requirements are then submitted to Top Management and Municipal Owner/Operating Authority for budgetary approval.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Infrastructure Maintenance, Rehabilitation and Renewal</h2>
<p>Policy #: OP-15</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 15: Infrastructure Maintenance, Rehabilitation and Renewal

The Manager, Water Services/ORO will annually review the planned and unplanned maintenance reports and programs. A summary will be prepared and communicated to the Director of Public Works & Engineering Services under the advisement of the Manager, Engineering Services and will identify areas that may need rehabilitation and renewal planning.. Reference can be made to the [Public Works & Engineering Services Five-Year Capital Works Plan \(2025 – 2029\)](#) on the Town’s website for details.

15.1 Planned Maintenance


All planned maintenance is scheduled and communicated to staff by the Manger, Water Services/ORO. All records for the listed planned maintenance programs are retained at the Water Services office.

- a) Annual valve exercising programs
- b) Annual flushing programs
- c) Annual hydrant inspection, maintenance and painting

Planned maintenance is scheduled on an electronic spreadsheet stored on the central office computer server. Server files are backed up daily. The long-term forecast of major infrastructure maintenance, rehabilitation and renewal activities is kept current by reviewing planned rehabilitation and renewal programs on an annual basis as capital works are planned for each calendar year by the Manger, Water Services/ORO with the following: Director of Public Works & Engineering Services; Director of Financial Services/Treasurer; Manager, Engineering Services and Manager, Public Works & Transportation.

Scheduled tasks are typically defined by manufacturer’s literature when available and revised as needed according to operator experience/observations. Planned maintenance tasks are communicated to the person responsible by issuance of work orders from the Manager, Water Services/ORO or designate or the Water Distribution Operator Leader. Completed work orders are reviewed and signed by the Manager, Water Services/ORO or designate or DWQMS Representative.

If feasible, rehabilitation or replacement of water distribution piping is coordinated with the Town’s scheduled wastewater and road resurfacing projects.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Infrastructure Maintenance, Rehabilitation and Renewal</h2>
<p>Policy #: OP-15</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

15.2 Unplanned Maintenance

Unplanned maintenance is conducted as required. All unplanned maintenance activities are authorized by the Manager, Water Services/ORO or designate. Unplanned maintenance includes but is not limited to:

- a) Service leaks
- b) Meter repairs
- c) Emergency hydrant repairs
- d) Water quality inquires
- e) General consumer inquiries

Policy #: OP-16	DWQMS Operational Plan Document Revision Date: February 25, 2025
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Element 16: Sampling Testing and Monitoring

Sampling, testing and monitoring of the treated water produced at the Windsor Utilities Commission (WUC) water treatment plant is conducted by WUC operators as required by [O. Reg. 170/03](#).

A competent certified Water Distribution Operator for the Town performs all in house sampling. Results are recorded on a weekly log sheet and monitored by Water Distribution Operators. Detailed procedures for all tests performed on-site are provided in Standard Operating Procedures (SOP's).

The water distribution operators ensure that the water supplied to the Corporation of the Town of Tecumseh water distribution system meets the [Safe Drinking Water Act, 2002](#). Sampling and testing for the Corporation of the Town of Tecumseh water distribution system is limited to the distribution system only, as required by [O. Reg. 170/03](#).

The results at all boundary meters and the water tower are displayed and recorded on the SCADA system and monitored by the Manager, Water Services/ORO or designate and Water Distribution Operators.

Free chlorine will be done in-house. All other regulatory testing is contracted out and performed by an accredited lab chosen by the Corporation of the Town of Tecumseh. Records and logs are kept at the Water Services office.

Sampling and monitoring SOP's are established for operating the water distribution system. Provisions have been made when sampling and monitoring under abnormal circumstances.

16.1 Adverse Water Quality Sample

- a) If the accredited laboratory discovers adverse water quality in a sample, they are obligated to notify Water Services within 24 hours. All adverse water results prescribed by *Schedule 16 of O. Reg 170/03* must be immediately reported by Water Services to the Medical Officer of Health, Spills Action Centre (SAC) and the MECP.
- b) During adverse water quality incidents, maps and drawings are provided to the local health authority whereby direction is given to the Town as to the locations of sampling and monitoring upstream and downstream of the location from which the adverse sample was found.


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16.2 Power / Communications Loss

- Water Services staff is alerted via telephone in the event of a power/communication loss that affects the SCADA system. Refer to [Element 11 Personnel Coverage](#) for call-out procedure during working hours and after working hours.
- The SCADA system is programmed to continue calling the emergency contact list until the alarm is acknowledged.

16.3 Inclement Weather

- Additional staff and/or equipment will be provided as needed.


 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<p>Measurement and Recording Equipment Calibration and Maintenance</p>
<p>Policy #: OP-17</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 17: Measurement and Recording Equipment Calibration and Maintenance

The measurement and recording equipment used and their associated maintenance and calibration requirements are outlined in the Index of Calibration and Maintenance.

The measurement and recording equipment used are calibrated by contractors according to the manufacturers’ specifications or as mandated by legislation. All calibrations are recorded and filed at the Water Services office.

Contractors that are used for performing calibrations are identified in the Essential Supplies and Services List (Refer to [Element 13 Essential Supplies and Services](#)).

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2 style="margin: 0;">Emergency Management</h2>
<p>Policy #: OP-18</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 18: Emergency Management

The Corporation of the Town of Tecumseh’s water distribution operators have emergency training and are aware of the location of written procedures to deal with emergencies in the water distribution system. Specific instructions for responding to emergencies, including emergency situations that have the potential to result in acute drinking water health risks are included in hard copy in the Water Services office and electronically in the Town of Tecumseh network server. Once a calendar year, a training exercise will be conducted to test selected emergency procedures. If present methods should change or if new employees are brought into the system, semi-annual training will occur on dealing with emergencies. Senior employees or direct supervisors would provide this training. All training is documented and placed in employee training files.

Water distribution operators are on 24-hour call to ensure that a qualified staff member will attend and assess any water emergency.

18.1 Emergencies

- a) Adverse water quality
- b) Water distribution cannot supply fire protection or safe drinking water
- c) Situations in the water distribution system that have the potential to result in acute drinking water health risks.

In the event of an identified emergency the Manager, Water Services/ORO or designate shall be contacted immediately. The Manager, Water Services/ORO or designate is designated to be responsible for overall management, decision-making and communications at the entail level of emergency.

In the event the Manager, Water Services is unavailable, the Director of Public Works & Engineering Services shall be contacted and will appoint a temporary ORO.

The Manager, Water Services/ORO or designate will then report all incidents and corrective actions to the Director of Public Works & Engineering Services.

The Director of Public Works & Engineering Services, in collaboration with the Manager, Water Services/ORO or designate will advise the Municipal Owners/Operating Authority of the system.


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The Mayor and CAO of the Corporation of the Town of Tecumseh shall only be notified in the event that water cannot be supplied to the Town in sufficient amounts for fire protection or that water quality poses an acute health risk to consumers and a boil water advisory or drinking water advisory must be issued.

The *Water Services Emergency Response Plan* is an emergency plan consisting of a set of guidelines assembled to assist water staff in emergency response procedures and is intended to facilitate a systematic and coordinated response to a variety of water emergencies or major incidents. The *Water Services Emergency Response Plan* has been formulated to assign emergency response roles and responsibilities and to guide immediate and long-term response to incidents adversely affecting the water operations.

In the event of a problem occurring greater than a water emergency the Corporation of the [Town of Tecumseh Emergency Response Plan](#) will be implemented. A hard copy is stored in the Water Services office and electronically on the Town of Tecumseh network server.

An extensive emergency contact list is provided within the *Water Services Emergency Response Plan*. The *Water Services Emergency Response Plan* is reviewed on an annual basis.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Internal Audits</h2>
<p>Policy #: OP-19</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>


Element 19: Internal Audits

Internal audits will be performed in entirety at least once every calendar year as legislated, to ensure the DWQMS conforms to the requirements of the DWQMS Operational Plan. These requirements include criteria to ensure that the DWQMS has been effectively implemented and properly maintained.

The Corporation of the Town of Tecumseh will conduct internal audits by trained auditors internally or by a contracted trained auditor chosen by the Corporation of the Town of Tecumseh.

19.1 Internal Audits Conducted by Town of Tecumseh Auditors

- The assignment of auditor’s and schedules will be the responsibility of the DWQMS Representative.
- Internal audits will be conducted by a person who has successfully completed a recognized internal auditor workshop.
- Internal audits will be scheduled based on the availability and schedules of the participants.
- DWQMS will be audited as per the legislative requirements.
- The auditor shall review all related DWQMS documentation.
- The auditor shall observe activities, review records, review previous internal and external audit results and interview personnel as necessary to ensure that the status of the audited Elements of the DWQMS has been effectively covered.
- The auditor shall submit completed reports to the DWQMS Representative and the Manager, Water Services/ORO or designate.
- The report shall include any corrective actions requests required to address discrepancies.
- Responses to corrective action requests shall be designated to the responsible individual by the DWQMS Representative.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Management Review</h2>
<p>Policy #: OP-20</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 20: Management Review

Management review meetings ensure and evaluate the continuing suitability, adequacy and effectiveness of the DWQMS. This process reviews the effectiveness of the DWQMS.

20.1 Review Participants

Management reviews shall be conducted and participants shall include:

- Chief Administrative Officer (CAO)
- Director of Public Works & Engineering Services
- Manager, Water Services/ORO
- DWQMS Representative

The DWQMS Representative chair the meeting and will communicate the minutes to all meeting participants.

20.2 Review Frequency

Management reviews shall be conducted after the internal audit has been completed and submitted to the DWQMS Representative by the internal auditor. The management review shall be conducted at least once a calendar year unless additional meetings are required.

20.3 Review Input

The DWQMS Representative and/or Manager, Water Services/ORO shall provide information and data concerning the following categories for the review if requested:

- a) Incidents of adverse drinking water tests
- b) Results of internal audits
- c) Results of external audits
- d) Results of MECP inspections
- e) Incidents of non-compliance with applicable regulations
- f) Consumer feedback
- g) Operational performance
- h) Changes to services, activities, regulations etc. that could affect DWQMS
- i) Infrastructure review results


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- j) Currency of operational plan
- k) Deviations from CCP limits
- l) Effectiveness of risk assessment process
- m) Emergency preparedness
- n) Trends in quality of raw water & drinking water supply
- o) Resources needed for DWQMS maintenance
- p) Town of Tecumseh website
- q) Retention table
- r) Review of best practices
- s) Comments/suggestions made by water services personnel

20.4 Review Process

Management Review meeting participants shall make recommendations and initiate an action plan, including the person(s) responsible for delivering the action item(s) and the proposed timeline(s) to improve the content and implementation of the Operational Plan and related procedures and to ensure the provision of adequate resources.

The DWQMS Representative shall be responsible for communication and implementation of the Management Review findings.

 <p>TOWN OF Tecumseh ONTARIO · CANADA</p>	<h2>Continual Improvement</h2>
<p>Policy #: OP-21</p>	<p>DWQMS Operational Plan Document Revision Date: February 25, 2025</p>
<p>Public Works & Engineering</p>	<p>Town of Tecumseh Water Distribution System</p>

Element 21: Continual Improvement

The Corporation of the Town of Tecumseh strives to continually improve the effectiveness of its DWQMS. Issues of non-compliance, non-conformance and opportunities for improvement are presented through:

- The review of best management practices (BMP's) at least once every 36 months and will include a review of the MECP's BMP document (when published). This review will follow the same schedule as the comprehensive risk assessment
- MECP compliance inspections
- Adverse water quality incidents
- External DWQMS accreditation audits
- Internal DWQMS audits
- Management reviews
- Staff suggestions
- Consumer calls
- Other means (e.g. near misses, other utilities' experiences etc.)

Using the *Request for new or changed DWQMS document* form, the DWQMS Representative tracks and measures continual improvement.

Corrective action reports are used to record issues such as: non-conformities, non-compliances and other drinking water system failures where;

- Causes of the issues are investigated
- Actions taken to correct the issues are documented
- Actions are taken to prevent the issues from re-occurring.
- Review of actions taken to correct/prevent the issues are carried out to verify they are implemented and effective in correcting/preventing the re-occurrence of the issue.

Preventative actions may also be taken to eliminate potential issues, and these are documented and reviewed to ensure they are implemented and effective in preventing the potential issue from occurring.