



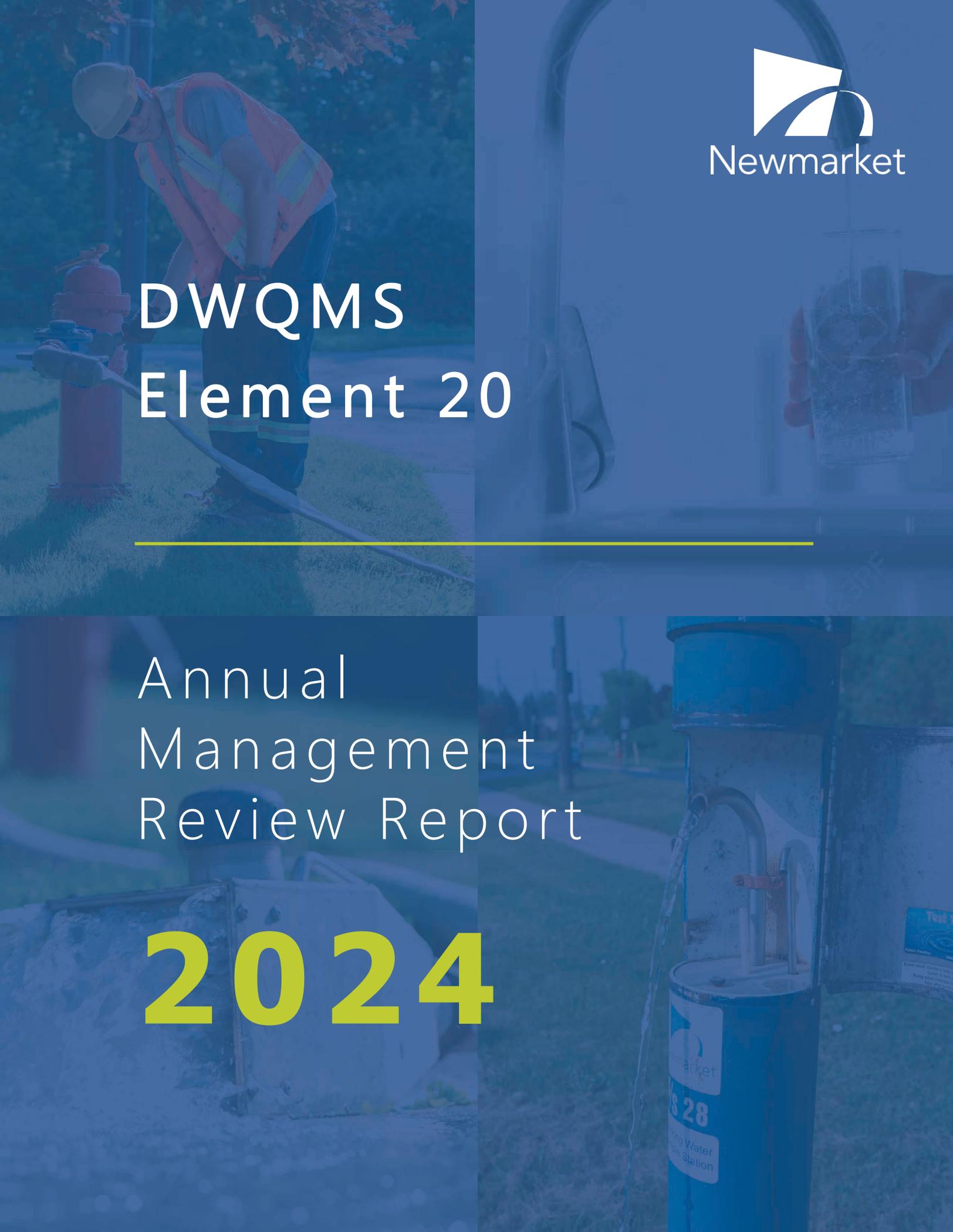
Newmarket

# DWQMS Element 20

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Annual  
Management  
Review Report

# 2024



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**Date:** February, 20<sup>th</sup>, 2025

**To:** Management Review Participants

**Attendees:** M. Agnoletto, R. Gillis, P. Leo, C. Saunders, P. Hughes, T. Meadows, M. Mosquera,

**From:** Tyler Meadows

**Subject:** Drinking Water Quality Management Standard (DWQMS)  
Management Review February 2025

**Period Covered:** January 1<sup>st</sup>, 2024, to December 31<sup>st</sup>, 2024

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### **Background:**

The Town of Newmarket has an approved Operational Plan, which has been prepared under the framework of the Ontario Drinking Water Quality Management Standard (DWQMS) v.2.0 as part of the Municipal Drinking Water Licencing (MDWL) program. The Quality Management System (QMS) under the DWQMS framework requires under Element 20 that a Management Review is to be completed annually and is a requirement for accreditation. The intended purpose of the Management Review is to keep the QMS, and top management connected, and to provide a summary of the condition of the QMS from the subsequent results of the review.

The Management Review is an important part of the DWQMS. It allows staff and Top Management to annually review the performance of the drinking water system, and to evaluate the continuity, suitability, adequacy, and effectiveness of the QMS, as legislated by the Ministry. The procedure for completing a Management Review is outlined under procedure “Element 20 – Appendix 20a – Management Review Procedure” (a high-level documented procedure within the quality management system), which can be found contained within the Operational Plan. This report is written to satisfy the requirements of the Management Review in “Element 20 – Appendix 20b – Management Review Action Items Follow Up Report”.

Top Management is to ensure the review is completed annually, deficiencies are identified, and reports of the subsequent results are delivered to the Owner of the drinking water system. It is the responsibility of the QMS Representative to complete the review and report, and to ensure that all action items that are determined from the review are completed in a reasonable timeline. The following topics for the Management Review are outlined and specified in “Element 20 – Appendix 20a – Management Review Procedure”, as well as any other additional items suggested during the assessment completed during the internal and external auditing process.

## 1. Incidents of regulatory non-compliance

In most cases, this section of the Management Review report would consider the concerns addressed by the Ministry of the Environment, Conservation and Parks (MECP) during the annual inspection for the previous calendar year. More importantly, the MECP inspection conducted from November to December of 2024 determined that there were no incidents of non-compliance identified, and the Town of Newmarket received a perfect score of 100% for the fourth consecutive year.

**Identified Action Items:** Implement best management practices/recommendations where applicable and necessary.

## 2. Incidents of adverse drinking water tests (AWQI)

Fifteen (15) incidents were reported as adverse in 2024. Fourteen were related to low chlorine residuals, while the remaining being a positive result for the presence of Total Coliforms. Mandated protocols and response activities were initiated, and upon resampling of multiple points near the identified source secondary samples came back with acceptable results and resolution notices were provided. The distribution system has historically experienced chlorine residual decay. The Town has made significant efforts to improve residual stability through the installation of anti-stagnation devices, auto-flushers, intelligent auto-flushers (iAFCL1 and iAFCL3), dead-end and unidirectional flushing. Improved residual stability may also be attributed to the creation of “micro” pressure zones within the larger pressure zones (i.e. east, central east, central west, and west), data analysis and trending, and working collaboratively with the Regional Municipality of York, as well as industry experts. Through ongoing efforts, the Town successfully and significantly reduced the overall occurrence of low residuals throughout the system. Furthermore, low residual events have been isolated mostly to the upper east pressure zone.

**Identified Action Items:** Continue to look at ways to improve water quality by utilizing future installation of appurtenances (anti-stag, auto flushers) in recommended locations and through operational strategies such as preventative maintenance activities.

## 3. Deviations from critical control points and response actions

A critical control point is an essential step or point in the subject system where you can apply some sort of control, to prevent or eliminate a drinking-water health hazard or to reduce it to an acceptable level. In the approach to CCP identification, only the last step at which a hazard can be controlled is defined as a CCP. If control measures are not in place for hazardous events with high rankings, you are not required to put them in place. Furthermore, if the hazardous event cannot be controlled to prevent, eliminate, or reduce a drinking-water health hazard, it is not then specified as a CCP. For the Town’s drinking water system there are few critical control points as the infrastructure network does not have the outlined capabilities to truly define CCP’s where appropriate. Critical Control Points for the

distribution network may include the response to adverse water quality incidents and mitigating low pressure in the system. Additionally, most of the major CCP's for the Town's supply network are managed and controlled by the Regional Municipality of York (i.e. ground water well sites, re-chlorination facilities, elevated towers, reservoirs).

Pressure reductions within the distribution system can be caused by various unplanned events and must be maintained at a minimum 20 PSI requirement to reduce the risk of contamination. These contamination risks can occur when the outside of the pipe network is penetrated from either the private side or from the ground (exterior of the physical pipe). During maintenance/replacement activities it may be required to depressurize portions of the system, at which time strict protocols are followed to protect the integrity of the system. System pressure is monitored on site using gauges attached to localized hydrants.

These pressure reduction events can occur during a watermain break repair when a section of pipe or associated appurtenances must be fixed or replaced. Most repairs can be accomplished using a repair clamp while keeping the system under positive pressure or using an air gap. The Town typically experiences an average of 15 watermain breaks annually; in 2024 there were 15. Similarly, valve replacement/rehabilitation is completed by operations staff as quickly as possible. The pipe segment(s) impacted by these activities are flushed until the confirmation of an acceptable chlorine residual is achieved prior to re-establishing water service back to the public.

Adverse Water Quality Incidents are monitored through weekly sampling schedule(s) and maintenance/repair work being completed throughout the system. Water quality is verified through these practices and are monitored by verification checks on the intelligent auto flushing equipment. CCP's are based on internal best practices, and critical control limits derived from regulatory standards. Deviations from critical control points and their limits trigger response actions from operations staff to fulfill reporting requirements and corrective action requirements as set out under the Safe Drinking Water Act. Water quality incidents are of the highest priority and are responded to immediately until the water quality has been restored to acceptable limits. Response mechanisms are conducted by following the defined standard operating procedures for all varying types of purported deviations from the critical control limits set out in the risk assessment process.

**Identified Action Items:** Complete an updated HAACP analysis and risk assessment for 2025.

#### **4. Efficacy of the risk assessment process**

Risk assessments were completed in 2024 by select staff as required by the DWQMS. The process aims to review and score each risk associated with the water distribution system and its internal network. Based on past events some identified risks may be re-calculated within the scoring matrix to

help identify areas that require greater attention. Additionally, other identified risks may be re-adjusted to compensate for infrastructure improvements, technological/engineering advancement, or any changes in the system that may improve the associated risk level of the event.

The comprehensive risk assessment review was conducted in May of 2022. This comprehensive assessment was completed by the risk assessment team which comprised of the manager, supervisory staff, team leads, as well as the water quality analyst and compliance coordinator. The next scheduled comprehensive assessment will be conducted in 2025. Completing the assessment allows staff and management to review past events and their outcomes and to come to a determination of potential hazards and risks not previously defined.

**Identified Action Items:** Conduct an in-depth annual risk assessment of external and internal risk factors. Revise and update SOPs based on risk assessment outcomes and operational field experience.

### 5. Internal and third-party audit results

Both an internal and external audit were conducted and completed to assess the overall conformance to the operational plan and associated quality management system.

**Internal Audit:** An independent auditor evaluated the Drinking Water Quality Management System (DWQMS) between November 25<sup>th</sup> and 26<sup>th</sup>, of 2024. This audit consisted of a two day on-site visit with an in-depth review of all 21 elements required under the identified QMS. The audit included site visits to the Newmarket Operations Centre and a review of available documents and records provided by the Town of Newmarket. Additionally, the audit involved interviews with staff and management, an assessment of documents and records, reviewing training, infrastructure review, emergency management, staff competencies, as well as evaluating conformance to the risk assessment procedure and all additional elements contained in the QMS for the Town of Newmarket. The QMS was found to have zero major non-conformities, two minor non-conformities, and four opportunities for improvement.

**External Audit:** A full scope re-accreditation audit is required every 3 years, and after obtaining re-accreditation a surveillance audit is conducted in the 2 subsequent years between the re-accreditation period. The Town of Newmarket received re-accreditation by SAI Global in January 2025, the audit was conducted from May 7<sup>th</sup> to May 8<sup>th</sup>. The Town of Newmarket was not found to have any major or minor non-conformities in the assessment of its Quality Management System and the auditor identified 9 *Opportunities for Improvement* (OFI's) that are being reviewed and responded to accordingly. Additionally, the Town of Newmarket received a perfect score for conformance (100%) for the Quality Management System and through a committed approach to continuous improvement,

strives to find new and innovative ways to refine the current success of the established systems, processes, and procedures.

**Identified Action Items:** review OFI’s and implement where needed. Review Best Management Practices as required in Operational Plan. Begin implementation of corrective action response with identified personnel and proposed timelines for each action item identified as an OFI.

### 6. Results of emergency response testing

One emergency response training module was completed in 2024 as required under the operational plan. Annual emergency response training was conducted regarding a major power loss to several areas of significance. A mock training exercise was performed with all staff and management to evaluate a scenario to assess and respond to a significant loss of critical assets within the distribution network. This emergency response training was conducted to identify and demonstrate learning objectives as well as practical experience in situational awareness to properly manage emergency response using procedures/protocols that are expected to be followed. The scope of the exercise included activities for internal and external communication protocol, initial assessments, continual improvement, and relevant operating procedures to be applied during this type of event. The next emergency response exercise will be conducted in 2025.

**Identified Action Items:** Future emergency response training will be conducted annually. Continue to refine emergency response procedures and author new ones as necessary.

### 7. Operational performance

The 2024 Annual Water Quality and Performance Report has been prepared and will be submitted to all top management as well as Town Council and the Ministry of the Environment. This annual report provides a summary of overall performance of the drinking water system and lists any incidents of legislative non-compliance and non-conformance with QMS. The table below outlines various categories of importance relating to system maintenance activities for 2024.

System Maintenance Type	Frequency/Occurrence(s)	Additional Comments
Watermain Breaks/Repairs	15 Breaks/Repairs	Unplanned emergency response.
Water Service Leaks/Repairs	207 Service leak repairs	Includes non-emergency planned service repairs & emergency unplanned repairs.
Hydrant Repair & Rehabilitation	27 Repairs/ 2501 Inspections	Includes complete restoration plus additional works (i.e. raising hydrants to grade).
Valve Repair & Rehabilitation	12 Repairs / 555 Exercised	Restoration/replacement for planned and unplanned activities.

**Identified Action Items:** To develop new ways to track these metrics for determination of annual performance reviews and identification of trends analysis.

### **8. Raw water supply and drinking water quality trends**

Raw water quality parameters, data, and information can be reviewed from the Regional Municipality of York website. The Town has made substantial progress with respect to the overall water quality, especially as it relates to water stagnation and residual decay. Further details on the Town's water quality data can be found within the *Annual Water Quality & Performance Report*. The Water Quality Analyst works closely with data management software such as Compliance365 as well as the Town's GIS data collection modules to identify trends and assess water quality analytics for the distribution system.

**Identified Action Items:** None at this time

### **9. Follow-up on action items from the previous management reviews**

The following action items were identified in the last Management Review meeting and have been listed as pending, outstanding, ongoing, or completed.

- Intelligent auto-flushers previously recording monthly adverse (completed)
- Tango Cres – to be assumed by Q4 2025. (ongoing)
- Review staff requirements for Category I & II water main breaks (ongoing)
- Utilize OneDrive for accessing Standard Operating Procedures (ongoing)
- Procedures and contact lists stored in operator vehicles were not current (completed)
- Storage locations of the completed operator work logs, and calibration records did not match in the physical location (completed)
- Review critical control points and limits (pending)
- Ensure that if measurement or recording devices have not been calibrated there is a reason noted or documented (completed)
- Collaborate with Capital to improve tracking of asset replacement (ongoing)
- Modifying or removing enhanced monitoring for regulatory relief data collection required by the Region (ongoing)
- Topic for 2024 emergency response training to be discussed (completed)
- Town staff to review the raw water quality parameters from the Regional Municipality of York (completed)

## 10. Status of management action items identified between reviews

Select operations staff and management continue to review internal short-term and long-term plans, KPI reports, water modelling projections, infrastructure needs, risk assessments and outcomes, best management practices, as well as neighbouring municipality performance and data. Most of the action items identified between management review periods have been completed, while a small number of inter-departmental actions items remain outstanding for future corrective action consideration. Additional action items identified between management review periods are primarily documented in the internal audit process.

## 11. Changes that could affect the Quality Management System

Changes in legislative requirements include the integration of the newly adapted Consolidated Linear Infrastructure Environmental Compliance Approval (CLI ECA) for Wastewater. Based on the information provided from the MECP, the program will closely resemble the Municipal Drinking Water Licencing program, including the development and implementation of a Wastewater QMS. Although Wastewater falls outside of the scope of the Water QMS, these changes will result in a significant increase in workload for the members of the compliance team involved with the structuring and creation of the documentation and reporting required. Also, the complete restructuring of the current Operational Plan for the DWQMS when completed will undoubtedly be a major component of change to the system in its entirety.

Additional changes that have been directly influential in the QMS include continuity of staff, and staff turnover, as well as having a prolonged vacancy in the Compliance Coordinator position which directly impacts oversight and review of the quality management system and the procedural components that must be followed annually.

**Identified Action Items:** Quarterly scheduled meetings and progress reports with select staff who are involved in the development and implementation of both quality management systems.

## 12. Consumer feedback

Customer feedback and notification are an important performance indicator and metric used formally for tracking water quality throughout the system. The following is a general record of water quality complaints year over year identified through the Town's CRM (Customer Relationship Management) tracking system.

Customer complaints/feedback pertaining to water quality (taste, colour, odour) have shown small degrees of variance year over year. Additionally, these complaints typically relate to water discoloration caused by operational activities and maintenance as well as taste and odour concerns. This type of customer notification is completed through a consultation done over the phone by the water quality analyst or with an on-site visit by operations staff.

Customer complaints regarding water pressure are investigated and resolved by water distribution operations staff. The cause(s) of undesirable water pressure(s) are most often a by product of a blockage in the residential water meter, a plumbing issue internally, water softeners, water heaters, or plugged faucet aeration screens from flushing or plumbing work. Other items include service leaks, repairs, and other disruptions relating to the continuity of the customers water service.

Year	Water Quality	Water Pressure	Other (leaks, repairs, inquiries)
2019	139	80	427
2020	150	133	355
2021	123	206	537
2022	46	115	93
2023	43	168	37
2024	111	190	207

**Identified Action Items:** Look at finding better ways or improvements to track and create updated metrics for our operational performance for data collection and analysis throughout the year. Collaborate with Customer Service staff to specify which datasets and parameters are of importance for annual reporting and performance tracking.

### 13. Resources needed to maintain the Quality Management System

To prepare for the introduction of the new CLI-ECA and approval by the MECP, the town will need to develop and implement a WWQMS (Wastewater Quality Management Standard) which includes:

- An Operational Plan that follows the same layout of the DWQMS.
- An Operations and Maintenance Manual for each facility.
- Emergency management procedures for each facility
- An Annual System Performance Report.

The Town of Newmarket is in the development phases of writing and finalizing the Operations Maintenance Manual(s) for the Storm and Sewage CLI-ECA as well as the development of the Annual Report for 2024. Specifically, to maintain the current DWQMS the resources that have been previously used will be sufficient to ensure the QMS is appropriately updated, revised, and corrective actions are established for all the minor findings and adjustments identified for the continual improvement phase of its life cycle. Additionally, software updates/improvements (GIS, Compliance365, etc.) will be critical to the collection of more comprehensive datasets as well as utilizing further technology to improve the systems capabilities in terms of oversight and monitoring.

#### 14. Results of infrastructure review

Appendix 14a in the Operational Plan describes the current procedural system in use to meet the requirements of the standard. The system remains the same as documented in the 2023 management review. The results from this review are documented to provide information on the condition of the distribution system infrastructure components based on performance and maintenance records from the previous year. Essentially, this annual meeting is utilized for Engineering Services to inform Public Works staff of capital projects that are anticipated to take place regarding drinking water infrastructure over a five (5) or ten (10) year period. Additionally, Public Works staff will inform Engineering Services staff of any drinking water infrastructure concerns that have been identified in the period elapsed between the previous infrastructure reviews and the current review period. Any operational concerns raised by Public Works staff may include:

- Previous review documentation
- Water/Wastewater staff input
- MECP Compliance Reports
- Watermain break/frequency history
- Infrastructure Age
- Water quality/enhanced monitoring initiatives
- Customer complains
- Historic maintenance records

**Identified action items:** The 2024 review is tentatively scheduled for March 19<sup>th</sup>. Annual infrastructure review for 2025 to be conducted in November.

#### 15. Operational Plan currency, content and updates

The content contained within the current version of the Operational Plan is up to date and compliant with the DWQMS 2.0 objectives and framework. Due to the length and complex nature of the current Operational Plan it has been identified as an Opportunity for Improvement (OFI) by previous auditors to modify, simplify, or adapt the Operational Plan in some regard to enhance its functionality. In addition, a newly streamlined version of the Operational Plan is expected to be created, implemented and fully functional by the end of 2025. Further commitment and endorsement by current standing upper management and council will be required in 2026 to allow transparency and full integration of proposed changes to Operational Plan and updates to its contents as required by the DWQMS guidelines.

**Identified action items:** Future *DWQMS Commitment and Endorsement* required by council for 2025/2026 to bring Operational Plan changes into effect.

## 16. Comments and suggestions made by staff/personnel

Continual review of any changes in the workplace environment and future growth expectations of the Water & Wastewater Department are considered. Additionally, roles and responsibilities are currently being reviewed and updates/modifications to job descriptions have been initiated for some positions. Ongoing staff engagement and communication is prioritized by management and supervisory staff. Furthermore, monthly team meetings are scheduled to promote meaningful collaborative discussions on operational strategies, training, health and safety, updates to standard operating procedures, and any other information that may be deemed important for operational objectives, targets, job tasks, duties, and expectations.

Operations staff continue to support the changes in operational strategy with an emphasis on preventative and reactionary maintenance activities. Staff continue to adapt to the day-to-day changes since the restructuring of these two work groups and provide meaningful feedback in group settings to enhance or identify any possible areas for improvement. Staff are required to inform the QMS Representative(s), as well as the Manager and Supervisory staff of any actual or potential non-conformities or non-compliance items in relation to the DWQMS, MDWL, DWWP, SDWA, and associated regulations as outlined in the continual improvement procedure under Element 21 of the Operational Plan.

## 17. Financial Plan

The 6-Year Financial Plan was last revised and submitted in 2021 to support the Drinking Water Works Permit (DWWP) and Municipal Drinking Water Licence (MDWL) renewal process. Renewals will be required again in 2026.

**Identified Action Items:** None with respect to licencing until the next renewal date. A new Financial Plan will be required at the end of 2025 to provide to the Ministry for future applications for the MDWL and DWWP. PWS to support Engineering and Asset Management on completing the Financial Plan and validating the requested projected plan outlook for completion by Q4 of 2025.

### Consultation

This report was prepared in part by the Water and Wastewater Compliance Coordinator with contributions from the Water Quality Analyst.

### Financial Implications

The cost of the DWQMS and annual auditing requirements are included in the existing operations budget.

Respectfully submitted by:

*T Meadows*

Tyler J. Meadows

Compliance and Training Coordinator

PWS - Water & Wastewater

Agenda Items	Annual Findings / Results	Notes, Considerations, & Contributions	Action Items	Assignment Timeline												
<p>a) <b>Incidents of regulatory non-compliance &amp; ministry inspections</b></p>	<ul style="list-style-type: none"> <li>• Site Inspection December 4/24</li> <li>• Inspection Risk Rating 0.00%</li> <li>• Final Inspection Rating 100.00%</li> <li>• 4<sup>th</sup> consecutive year</li> </ul>	<p>Noted by inspector:</p> <ul style="list-style-type: none"> <li>• Engineering sheet showing acceptance and understanding of MDWL and DWWP</li> </ul>														
<p>b) <b>Incidents of adverse drinking water tests</b></p>	<ul style="list-style-type: none"> <li>• Of the one thousand three hundred and ninety-two (1392) microbiological samples taken in 2024, the Town experienced (1) adverse drinking water test result.</li> </ul>	<ul style="list-style-type: none"> <li>• Adverse Condition: Total Coliform (TC)</li> <li>• Absent/Present: Present</li> <li>• Date Sampled: August 26, 2024</li> <li>• Date Reported by Laboratory: August 30, 2024</li> <li>• Location: SS31 Opposite 169 Penn Ave.</li> <li>• Cl<sub>2</sub> Residual: Free: 0.00 mg/L Total: 1.43 mg/L</li> </ul>	<p>Resolution notice provided.</p>	<p>Completed</p>												
<p>c) <b>Deviations from critical control points/critical control limits &amp; response actions</b></p>	<ul style="list-style-type: none"> <li>• Fifteen (15) (14 Chlorine) (1 sample) adverse or potentially Adverse Water Quality Incidents in 2024. Down from 68 in 2023.</li> <li>• Fifteen (15) Watermain Breaks in 2024.</li> </ul> <table border="1" data-bbox="506 971 1010 1052"> <thead> <tr> <th>2019</th> <th>2020</th> <th>2021</th> <th>2022</th> <th>2023</th> <th>2024</th> </tr> </thead> <tbody> <tr> <td>22</td> <td>12</td> <td>12</td> <td>15</td> <td>14</td> <td>15</td> </tr> </tbody> </table> <p style="text-align: center;"><b>Intelligent Auto Flushers</b></p> <ul style="list-style-type: none"> <li>• Standardized CCP limits are not possible currently due to system challenges. Operators continue to verify the units weekly and review the data as required in our MDWL-Issue 9.</li> </ul>	2019	2020	2021	2022	2023	2024	22	12	12	15	14	15	<ul style="list-style-type: none"> <li>• In October of 2024, The Manager, Supervisors, team leads, and the Water Quality Analyst &amp; acting Compliance &amp; Training Coordinator reviewed the Risk Assessment.</li> <li>• Determined the basis for critical control points based on internal best practices, best management practices and critical control limits subject to regulatory standards.</li> <li>• Comprehensive assessment to be done in 2025.</li> </ul>		
2019	2020	2021	2022	2023	2024											
22	12	12	15	14	15											

	<ul style="list-style-type: none"> <li>• Since regional upgrades to well 15 Bristol (iAF) has shown improvement in 2024.</li> <li>• Leslie Valley (iAF) is running 24h/7d due to the low CL2 residual in the area.</li> </ul>	<p><b>Bristol iAF Limits</b>          Desired Level 0.70mg/L          Minimum Level 0.45mg/L          Low Level Activation 0.30mg/L</p> <p><b>Leslie Valley iAF Limits</b>          Desired Level 0.35mg/L          Minimum Level 0.30mg/L          Low Level Activation 0.25mg/L</p>		
<p><b>d) Effectiveness of the risk assessment process</b></p>	<ul style="list-style-type: none"> <li>• No events leading to a hazardous situation occurred within the drinking water system that were not contemplated within the existing risk assessment process.</li> </ul>	<ul style="list-style-type: none"> <li>• The Risk Assessment (Comprehensive 36-Month Revision) was completed in May of 2022. This comprehensive assessment was completed by the Risk Assessment team. A new 36-month comprehensive revision to be completed in 2025</li> </ul>	<p>Completed by Q3 2025</p>	<p>TM</p>
<p><b>e) Internal audit and external) audit results</b></p>	<p><b>Internal Audit</b></p> <ul style="list-style-type: none"> <li>• The internal audit was conducted in November of 2024, by AET Group, and was supported by Water Quality Analyst, supervisors, and Manager of water/wastewater.</li> <li>• The internal audit provided six (6) corrective action response (CAR's) and were categorized as.</li> </ul> <ul style="list-style-type: none"> <li>• <i>Six (4) Opportunities for Improvement</i></li> <li>• <i>Zero (0) Best Management Practices</i></li> <li>• <i>Zero (0) Major NCR's (Non-Conformance)</i></li> <li>• <i>Two (2) Minor NCR's (Non-Conformance)</i></li> </ul>	<ul style="list-style-type: none"> <li>• The overall implementation of the QMS is effective. The eight (6) OFI's and one (2) minor NCR did not compromise the overall effectiveness of the QMS.</li> <li>• For comparison, the 2023 Internal Audit yielded eight (8) OFI's and one (1) Mn-NCR's.</li> <li>• No major NCRs were recorded for three (4) years running.</li> </ul> <p><b>Non-Conformance</b>  <u>E5 – Document and Record Control</u></p> <ul style="list-style-type: none"> <li>• The completed Best Management Practices Log (Appendix 21b), Preventive</li> </ul>		

	<p style="text-align: center;"><b>External Audit (3<sup>rd</sup> party)</b></p> <ul style="list-style-type: none"> <li>In April of 2024, SAI Global completed a “System (Stage 1) Remote Audit” of the Quality Management System (QMS) for the Town of Newmarket Drinking Water Distribution System.</li> <li>The audit was supported by the Water Quality Analyst, and the manager of water/wastewater.</li> <li>The objective of this system audit was to review the management system and processes, confirm the scope for certification, and determine the organization’s preparedness for the onsite verification audit (stage 2)</li> <li>The Town of Newmarket QMS received five (5) Opportunities for Improvement during the 2024 external audit.</li> </ul>	<p>Action (Appendix 21d), and Corrective Action Forms (Appendix 21C) were not available at the time of the audit.</p> <p><u>E5 – Document and Record Control</u></p> <ul style="list-style-type: none"> <li>The Operating Authority could not provide evidence to support that the 36-month review of BMP was completed.</li> <li>This non-conformity was also identified during the 2022 Internal Audit.</li> </ul> <p style="text-align: center;"><b>Opportunities for Improvement</b></p> <p><u>E6 Drinking Water System</u></p> <ul style="list-style-type: none"> <li>Consider describing the nature of water received from York Region which leads to operational challenges in maintaining secondary disinfection.</li> </ul> <p><u>E8 Risk Assessment Outcomes</u></p> <ul style="list-style-type: none"> <li>Consider making it clearer where CCP have been assigned to potentially hazardous events (e.g. ensuring CCP, Critical Control Limits, monitoring procedures, and response, reporting and recording procedures have been identified for any CPP).</li> </ul> <p><u>E17 Measurement &amp; Recording Equipment Calibration &amp; Maintenance</u></p> <ul style="list-style-type: none"> <li>Consider obtaining calibration standards directly from the original supplier containers to reduce the likelihood of contamination or dilution.</li> </ul>	<p>BMP, PA, &amp; CAF will be revised and addressed</p> <p>36 Month Review to take place in 2025</p> <p>The bottles are adequate and meet the requirements.</p>	<p>TM</p> <p>TM</p> <p>Completed</p>
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	<p><b>External Audit (3<sup>rd</sup> party) Re-accreditation (REACC)</b></p> <ul style="list-style-type: none"> <li>In May of 2024, SAI Global completed a “Re-accreditation Audit” of the Quality Management System Version 2 – 2017 (QMS) for the drinking water system.</li> <li>The objective of this re-accreditation audit was to assess the performance, suitability, and effectiveness of the QMS and complete the stage 2 process.</li> <li>The Town of Newmarket QMS received. Nine (9) OFIs during the 2024 re-accreditation audit.</li> </ul> <p><b>Outcome(s)</b></p> <ul style="list-style-type: none"> <li>Based on the results of this audit it has been determined that the management system is effectively implemented and maintained and meets the requirements of the standard relative to the scope of certification identified in this report; therefore, a recommendation for (continued) certification will be submitted to Intertek - SAI Global review team.</li> </ul>	<p><u>E19 Internal Audits</u></p> <ul style="list-style-type: none"> <li>Consider whether it is reasonable to require internal auditors re-new their internal auditor training every five years given their experience or more stringent auditor certifications in place.</li> </ul> <p><b>Opportunities for Improvement (REACC)</b></p> <p><u>E3 Commitment and Endorsement</u></p> <ul style="list-style-type: none"> <li>It was noted that the OP was previously endorsed, in March 2021, by all parties named in Appendix 3c. However, the May 2023 endorsement was incomplete. Should the situation remain as it is during the REACC audit, this OFI may be escalated to an NCR.</li> </ul> <p><u>E13 Essential Supplies and Services</u></p> <ul style="list-style-type: none"> <li>Procedures described in Appendix 13a and 13b are in general conformance. However, the management may consider describing how all applicable supplies conform with NSF 60, NSF 61, and NSF 372 requirements.</li> </ul> <p><u>E15 Infrastructure Maintenance, Rehabilitation &amp; Renewal</u></p> <ul style="list-style-type: none"> <li>Procedures described in Appendix 15 &amp; 15a are in general conformance. As an improvement, the management should consider going beyond “replacement program” to include extensions of the distribution infrastructure.</li> </ul>	<p><i>Document was signed by all parties and included in OP for REACC audit.</i></p>	<p>Completed</p>
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		<p><u>E18 Emergency Management</u></p> <ul style="list-style-type: none"> <li>Procedures as described in Appendix 18a and 18b are in general conformance. However, as an improvement, the management should include a list of the potential emergency situations or service interruptions, rather than just describing it as “The Element 7: Risk Assessment of the Operational Plan shall be used for identifying potential emergency situations that may arise.</li> </ul> <p><u>E21 Continual Improvement</u></p> <ul style="list-style-type: none"> <li>Procedure as described in Appendix 21a is in general conformance. As an improvement, the management may consider not to confine itself to only reviewing the publications by the MECP once every 36 months for Best Management Practices (BMP). Many such BMP are available through observing good practices by other Operating Authorities.</li> </ul> <p style="text-align: center;"><b>Additional OFIs</b></p> <p><u>E7 Risk Assessment</u></p> <ul style="list-style-type: none"> <li>Reviewed an attendance record of the once every calendar year verification of information and assumptions used in RA, held on May 31, 2023. Although the objective of the meeting was stated, its outcome was not recorded. As an improvement, the management</li> </ul>		
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		<p>concerned should ensure that this would not be repeated.</p> <ul style="list-style-type: none"> <li>The last once every 36-month risk assessment (RA) was on Sept 14, 2022. The record showed that that was done with the numbers for likelihood, ranking, etc. carried over from the earlier RA. The management is to consider performing the next RA in 2025 without the numbers, so that it would be a re-assessment rather than a review.</li> </ul> <p><u>E9 Structure, Roles, Responsibility &amp; Authorities</u></p> <ul style="list-style-type: none"> <li>Management may consider separating the title of QMS representative from the Compliance &amp; Training Coordinator as in the Appendix 9c. This is because the QMS rep is not always the Compliance &amp; Training Coordinator. Also, the responsibilities of the QMS rep are already defined in section 4 of the Operational Plan.</li> </ul> <p><u>Element 14 Review &amp; Provision of Infrastructure</u></p> <ul style="list-style-type: none"> <li>Record of a RA review on May 21, 2023, attended by the manager, supervisor, compliance / training coordinator, team lead, water analyst. However, there was no conclusion or results recorded for this review meeting. Therefore, the management should ensure that the next review be better recorded.</li> </ul>		
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<p><b>f) Results of emergency response training and testing</b></p>	<ul style="list-style-type: none"> <li>One (1) emergency response test was conducted in December 2024 as per the requirements of the approved operational plan. On December 20, 2024, the Water Quality Analyst conducted the annual</li> </ul>	<ul style="list-style-type: none"> <li>The emergency response training was a mock exercise based on a major power loss to several areas of significance. It was performed to assess and respond to a significant loss of critical assets within</li> </ul>		

	<p>emergency exercise in accordance with the Town’s approved Operational Plan.</p> <ul style="list-style-type: none"> <li>Eighteen (18) water/wastewater staff were present during this exercise and received on-the-job training hours.</li> <li>Remaining water/wastewater staff took the training at a later scheduled date.</li> </ul>	<p>the distribution network. The scope of the exercise included activities for internal and external communication protocol, initial assessments, learning objectives, practical experience, continual improvement, and relevant operating procedures to be applied during this type of event.</p> <ul style="list-style-type: none"> <li>The next emergency exercise is to occur in 2025, as per the Operational Plan requirements.</li> </ul>		
<p><b>g) Operational performance &amp; water quality testing</b></p>	<p><b>Chlorine (Cl<sub>2</sub>) Residuals:</b></p> <ul style="list-style-type: none"> <li>In total, three thousand nine hundred and ten (3910) Cl<sub>2</sub> tests were performed within the water distribution system (daily Cl<sub>2</sub> tests + Cl<sub>2</sub> tests taken while flushing + Cl<sub>2</sub> tests taken during microbiological sampling + Cl<sub>2</sub> tests taken during chemical sampling for organic and inorganic compounds + Cl<sub>2</sub> tests taken during corrective actions).</li> <li>This satisfies and exceeds the requirements set by the SDWA and its Regulations, see breakdown below.</li> </ul> <p><b>Microbiological Sample Residuals:</b></p> <ul style="list-style-type: none"> <li>Of the three thousand nine hundred and ten (3910) Cl<sub>2</sub> tests, one thousand three hundred and ninety-two (1392) were taken during Microbiological Sampling, which includes the three hundred and thirty-eight (338) samples taken during Heterotrophic Plate Count (HPC) microbiological tests.</li> </ul>	<p>Note: each time a Cl<sub>2</sub> sample is taken, two (2) parameters are tested to calculate Combined Cl<sub>2</sub>.</p> <p><b>Total Chlorine – Free Chlorine = Combined Cl<sub>2</sub></b></p> <ul style="list-style-type: none"> <li>A total seven thousand eight hundred and twenty (7820) Cl<sub>2</sub> tests were taken in 2024, however, only the combined chlorine result is reported therefore all reporting values are for combined chlorine, as the Newmarket drinking water is a chloraminated system.</li> <li>25% of all required microbiological samples must be tested for HPC.</li> </ul>		

	<ul style="list-style-type: none"> <li>This satisfies and exceeds the requirements of O. Reg 170/03; Schedule 6 – Operational Checks, Sampling and Testing – General, as well as Schedule 10 – Microbiological Sampling and Testing.</li> </ul> <p style="text-align: center;"><b>Daily Residuals:</b></p> <ul style="list-style-type: none"> <li>Of the three thousand nine hundred and ten (3910) Cl<sub>2</sub> tests, one thousand two hundred and fifty-six (1256) combined Cl<sub>2</sub> samples were taken during the “Daily Cl<sub>2</sub>” sampling program as required to satisfy O. Reg 170/03; Schedule 6 as well as Schedule 10.</li> </ul> <p style="text-align: center;"><b>Flushing Programs:</b></p> <ul style="list-style-type: none"> <li>The Town of Newmarket performs a UDF program and a dead-end flushing program. The flushing is done at fire hydrants, and sample stations. This is done to purge stagnant water from within the distribution system and allowing Cl<sub>2</sub> residuals to be monitored and maintained at acceptable levels.</li> <li>Of the three thousand nine hundred and ten (3910) Cl<sub>2</sub> tests, two hundred and seventy-four (274) Cl<sub>2</sub> residuals were taken while flushing “dead ends” and four hundred and twenty-four (424) were taken during unidirectional flushing, predominantly contractor led.</li> </ul>	<p style="text-align: center;"><b>Note on Reduced Lead sampling and Regulatory Lead Relief:</b></p> <ul style="list-style-type: none"> <li>Schedule 15.1 – Reduced Sampling in the case of a system that serves a population of 50,000 or more, in each of four consecutive periods described in subsection O. Reg 170/03</li> <li>Schedule 15.1-4 (2) – Standard Sampling, not more than 10 per cent of all the samples taken from plumbing under section 15.1-4 and tested for lead exceeded the standard prescribed for lead, according to the results of the tests conducted under section 15.1-7.</li> <li>Therefore, the Town of Newmarket possesses Lead Regulatory Relief under Schedule D of the Municipal Drinking Water (MDWL) License 124-101</li> <li>Required to sample eight (8) points in our respective distribution system during each of the sampling periods identified within O. Reg 170/03.</li> <li>All other lead sampling that is completed is above the requirements stipulated in the above referenced MDWL and is done at the sole discretion of the Town.</li> </ul>		
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	<p><b>Corrective / Preventative Actions:</b></p> <ul style="list-style-type: none"> <li>• Of the three thousand nine hundred and ten (3910) Cl<sub>2</sub> tests, three hundred and fifty (350) were taken as part of a corrective action, including but not limited to customer calls, complaints, watermain breaks, and adverse water quality incidents.</li> <li>• The range of combined Cl<sub>2</sub> residual from all samples was 0.04mg/L (min) to 3.26mg/L (max). The minimum acceptable legislated combined chlorine residual level is 0.25mg/L and the maximum is 4.00mg/L.</li> </ul> <p><b>Locations of high and low Cl<sub>2</sub> residuals</b></p> <ul style="list-style-type: none"> <li>• In 2024, the highest analyzed combined Cl<sub>2</sub> residual was 3.26 mg/L and occurred on May 13, 2024, at sample station 18 1035 Poppy Lane.</li> <li>• In 2024, the lowest analyzed was 0.04 mg/L and occurred at a hydrant fronting 50 Portland Cres and occurred on October 22, 2024.</li> <li>• This location is near the northern extremity of the system and has a very high-water age, leading to high chlorine decay. The location has been flagged and is part of the ongoing list to monitor closely and part of the enhanced monitoring program.</li> </ul>			
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	<ul style="list-style-type: none"> <li>The maximum twelve (12) month running average allowable limit is 80 µg/L. The results of the Town samples for the HAA twelve (12) month running average for 2024 is 8.3 µg/L, demonstrating the Town’s results are all within compliance limits.</li> </ul> <p style="text-align: center;"><b>NDMA Sample Results</b></p> <ul style="list-style-type: none"> <li>Four (4) samples were tested for nitrosodimethylamine (NDMA) at locations deemed to have the highest potential of the highest possible NDMA values (locations at the furthest points in the Distribution System).</li> <li>The maximum twelve (12) month running average allowable limit is 0.09 µg/L. The results of the Town samples for the NDMA twelve (12) month running average for 2024 is &lt; 0.0009 demonstrating the Town’s results are all within compliance limits.</li> </ul>			
<p><b>g) Operational performance – system maintenance</b></p>	<p style="text-align: center;"><b>Number of Watermain breaks.</b></p> <ul style="list-style-type: none"> <li>Fifteen (15) in 2024</li> </ul> <p style="text-align: center;"><b>Number Water Service Repairs</b></p> <ul style="list-style-type: none"> <li>Thirty-One (207) water service repairs in 2024 including non-emergency planned Service Line repairs, and emergency unplanned service line replacements.</li> <li>Planned repairs regarding Water Service leaks are issues deemed to not cause property damage, do not cause an endangerment to the health and safety of the public, and do not cause loss of service.</li> </ul>	<ul style="list-style-type: none"> <li>Number was created through locate alternate location agreements (ALAs). A new and improved way of tracking these repairs is being worked on for 2025</li> </ul>		

	<p style="text-align: center;"><b>Fire Hydrant Repairs, Replacements, Rehabilitation</b></p> <ul style="list-style-type: none"> <li>Twenty-seven (27) fire hydrants overhauled, plus additional works (i.e. raising hydrant to meet grade and standard) in 2024</li> </ul> <p style="text-align: center;"><b>Hydrant Inspections and Preventative Maintenance</b></p> <ul style="list-style-type: none"> <li>All hydrants in the Town are inspected once per year as per the Ontario Fire Code O. Reg 213/07, as well as inspected following each use by the Fire Department.</li> </ul> <p style="text-align: center;"><b>Mainline Valve Repair, Replacement &amp; Rehabilitation</b></p> <ul style="list-style-type: none"> <li>Twelve (12) mainline valve(s) replaced &amp; repaired in 2024.</li> </ul>	<ul style="list-style-type: none"> <li>Staff inspected hydrants in 2024. Program was successful with 100% completion.</li> </ul>		
<p><b>h) Raw water supply &amp; drinking water</b></p>	<p style="text-align: center;"><b>Raw Water Supply</b></p> <ul style="list-style-type: none"> <li>Town staff have reviewed the Raw water quality parameters from the Regional Municipality of York website.</li> </ul> <p style="text-align: center;"><b>Drinking Water Quality Trends</b></p> <ul style="list-style-type: none"> <li>Discussed in g) Operational Performance – Water Quality Testing, above.</li> </ul>			
<p><b>i) Follow-up on action items from previous management reviews</b></p>	<ul style="list-style-type: none"> <li>Tango Cres. Only portion of Tango is assumed. (previous year AWQI Hits)</li> <li>Review with staff requirements for Cat. I and Cat. II and private areas for water main breaks.</li> <li>SOPs to be always shared through OneDrive – Available to all water/wastewater staff</li> <li>Review CCP and CCL.</li> </ul>	<ul style="list-style-type: none"> <li>Tango to be assumed by Q4 2025</li> <li>On-going.</li> <li>On-going</li> <li>On-going</li> </ul>	<p>SOP revised and training associated needed</p>	<p>TM &amp; PH</p>

	<ul style="list-style-type: none"> <li>Enhanced Monitoring Discussion (6 months of data)</li> <li>Financial Plan</li> </ul>	<ul style="list-style-type: none"> <li>Requirements for data reduced. TON will now do 6-month rotation</li> <li>10-year financial plan for Water as of Dec 2023 was located</li> </ul>		
<p><b>j) The status of management action items identified between reviews</b></p>	<ul style="list-style-type: none"> <li>Town staff and management continue to review internal short-and long-term plans, KPI reports, metrics, water models, infrastructure needs, risk assessments and risk assessment outcomes, local neighbouring municipalities’ system performances, and industry best practices to determine and implement efficiencies as part of Element 21- Continual Improvement. We commit to the four (4) step continual improvement process.</li> </ul> <p style="text-align: center;"><b>Plan-Do-Check-Improve</b></p>	<p style="text-align: center;">No outstanding action items identified</p>		
<p><b>k) Changes that could affect the Quality Management System</b></p>	<p style="text-align: center;"><b>Resource &amp; Personnel</b></p> <ul style="list-style-type: none"> <li>New Supervisor Hired</li> <li>Compliance and Training Coordinator left Jan/24</li> <li>New QMS Rep appointed to fill role left vacant by Compliance and Training Coordinator transitioning away from TON.</li> </ul> <p style="text-align: center;"><b>Infrastructure</b></p> <ul style="list-style-type: none"> <li>Millard Ave – 580m of w/m lined. 5 New hydrants/replacements. Valves</li> <li>Elm Street 145m of pipe installed/replaced.</li> </ul> <p style="text-align: center;"><b>Process</b></p> <ul style="list-style-type: none"> <li>Valve exercising program developed in 2022 and implemented again in 2024.</li> <li>Enhanced Monitoring Program</li> <li>Dead End Flushing Program</li> </ul>	<ul style="list-style-type: none"> <li>Christian Saunders Hired as Second Supervisor for Water/Wastewater</li> <li>Phil Hughes appointed QMS rep Jan/24</li> <li>Phil Hughes appointed acting Compliance and Training Coordinator until vacant position was filled.</li> </ul>		

	<ul style="list-style-type: none"> <li>UDF Program</li> <li>New Hydrant Inspection Program</li> </ul> <p><b>Regulations that could affect the QMS.</b></p> <ul style="list-style-type: none"> <li>Introduction of the new Consolidated Linear Infrastructure Environmental Compliance Approval process for sewage and storm will affect the Towns QMS in that updates will need to be made to make the QMS current.</li> </ul>	<ul style="list-style-type: none"> <li>555 valves exercised</li> <li>Review and enhancement of unidirectional flushing program</li> <li>416 Samples taken (enhanced)</li> <li>All completed twice min. 292 total</li> <li>151,418 meters flushed</li> <li>Hydrants completed (2501)</li> </ul>		
<p><b>l) Consumer feedback</b></p>	<p><b>Taste and Odour Complaints</b></p> <ul style="list-style-type: none"> <li>Thirty-three (33) taste &amp; odour customer complaints</li> </ul> <p><b>Low Water Pressure Complaints</b></p> <ul style="list-style-type: none"> <li>One hundred eighty-six (190) low water pressure customer complaints. This number is relative to 2023 (186 complaints)</li> </ul> <p><b>Possible watermain/water Service leaks &amp; breaks feedback</b></p> <ul style="list-style-type: none"> <li>Thirty-one (31) possible watermain &amp; water service leaks &amp; breaks</li> </ul> <p><b>Discoloured Water</b></p> <ul style="list-style-type: none"> <li>Seventy-eight (78) discoloured water complaints.</li> </ul>			
<p><b>m) Resources needed to maintain the Quality Management System</b></p>	<p><b>Introduction of the new Storm CLI-ECA and Sewer CLI-ECA</b></p> <ul style="list-style-type: none"> <li>The CLI-ECA is the new Consolidated Linear Infrastructure Environmental Compliance Assessment, designed to replace and meld all individual Certificates of Approvals and individual Environmental Compliance Approvals (ECA's) into one overarching</li> </ul>	<ul style="list-style-type: none"> <li>O&amp;M Manuals have been developed which include individual station and system O&amp;M manuals.</li> <li>Emergency procedures have been created for each station and for the collection system.</li> </ul>	<p>Complete report by end of Q1</p>	<p>PL</p>

	<p>regulated approval procedure, just as was designed and implemented for the DWQMS.</p> <ul style="list-style-type: none"> <li>For the Town’s new CLI-ECA to be approved by the MECP, the town will need to develop and implement a WWQMS (Wastewater Quality Management Standard) which includes. <ul style="list-style-type: none"> <li><i>Operational Plan that follows the ‘Element’ layout of the DWQMS.</i></li> <li><i>Operations and Maintenance Manual for each facility.</i></li> <li><i>Emergency management procedures for each facility,</i></li> <li><i>Annual System Performance Report.</i></li> </ul> </li> <li>The first-ever wastewater annual report will be presented to town council in 2025.</li> </ul>	<ul style="list-style-type: none"> <li>Annual report has been created and submitted for 2023 reporting year. 2024 annual report is in draft. Necessary information and data are being collected to be entered into the 2024 report and submitted to the Director no later than March 31, 2025.</li> <li>SDWT report created using a consultant for both waste and storm water.</li> <li>Signage portion, due December 27, 2025, is underway</li> </ul>	Complete by Q4 2025	PL
<b>n) Results of the infrastructure review</b>	<ul style="list-style-type: none"> <li>Infrastructure Review for 2024 to take place in Q1 2025</li> </ul>	<ul style="list-style-type: none"> <li>Review should take place within calendar year. Should include projects of current year review and forward projects of upcoming year</li> </ul>	Scheduled for March/2025 & Q4 2025	RG, TM, PH
<b>o) Operational plan currency, content, and updates</b>	<ul style="list-style-type: none"> <li>3<sup>rd</sup> Party external audits have confirmed currency and content of the Operational Plan.</li> </ul>	<ul style="list-style-type: none"> <li>Need to schedule external audit for 2024 in 2025</li> </ul>	Q2 2025	TM & PH
<b>p) Staff suggestions</b>	<ul style="list-style-type: none"> <li>Continual review of the workplace environment &amp; growth of the department.</li> <li>Roles and responsibilities being reviewed.</li> <li>Staff engagement &amp; cross training</li> </ul>			