



CLEARVIEW

**Water Systems
Management Review 2022
Management Review Report**

Meeting Date: March 24, 2023

Time: 10:00 am – 12:00 pm

Location: Township Office Administration Boardroom

Attendance:

John Ferguson, CAO

Mike Rawn, Director of Public Works

Dan Perreault, Deputy Director of Public Works

Todd Patton, Public Works Manager / ORO

Dale Lightheart, Water/Sewer Foreman

Stephanie Schell, QMS Representative

In accordance with the Drinking Water Quality Management Standard (DWQMS), on an annual basis Top Management shall hold a review meeting to assess and ensure the continuing suitability, adequacy, and effectiveness of the Quality Management System (QMS).

For QMS purposes Top Management within the Water Systems has been identified to include:

- CAO
- Director of Public Works
- Deputy Director of Public Works
- Public Works Manager

The review meeting chairperson shall discuss information and data concerning the following categories:

- Incidents of regulatory non-compliance.
- Incidents of adverse drinking water tests.
- Deviations from identified critical control limits and actions taken.
- Results of any internal or external audits.
- Results of any relevant emergency responses or tests.
- Operational performance and water quality trends.
- Changes in resource requirements, infrastructure, process, personnel, Drinking Water Quality Management Standard, or regulations that could affect the QMS.
- Consumer feedback.
- Any resources needed to maintain the QMS.
- A summary of the effectiveness of the Maintenance, Rehabilitation and Renewal program.
- The results of the infrastructure review.
- Operational Plan currency, content, and updates.
- Staff comments & suggestions.
- The effectiveness of the risk assessment process.
- Best management practices.
- Potential non-conformities.
- Follow-up on action items from previous management reviews.
- Status of action items identified between reviews.

INCIDENTS OF REGULATORY NON-COMPLIANCE

- 100% compliance rating on all Ministry of Environment, Conservation and Parks inspections in 2022.
- Permit to Take Water (PTTW) for New Lowell, Well 2 daily flow total and number of hours of water taking exceeded on March 1, 2022. Due to well inadvertently having been left in hand mode. Additional alarms and electrical modifications were made to prevent from occurring again.
- Permit to Take Water (PTTW) for Buckingham Woods, Well 3 daily flow total exceeded on June 26, 2022. Due to high system demand and structure of PTTW whereby daily maximum volume allowable is reached before 24 hours of pumping in a day. A modification to well control settings was made along with new automatic shutdown of well with alarms to operators have been installed to prevent from occurring again.

INCIDENTS OF ADVERSE DRINKING WATER TESTS

- 3 reports made to Spills Action Centre and the Simcoe Muskoka District Health Unit in 2022.
- Adverse Water Quality Incident (AWQI) # 158315 – Colling-Woodlands – May 3, 2022 – Low system pressure for approx. 17 minutes due to PLC fault. Programming glitch with pressure transmitter selection prevented high lift pump from being called for. Changes were made to PLC program to prevent reoccurrence. Pressure restored to distribution system, system flushed, chlorine residuals checked, and bacteriological samples collected. All sample results were free from contamination. No further action was required.
- AWQI # 159024 – Colling-Woodlands – July 6, 2022 - Total Coliform detection in regular weekly distribution sample. Watermain flushed, set of resamples collected and results were all clean. No further action required.
- AWQI # 159796 – Nottawa – August 31, 2022 – Regular weekly distribution sample with overgrown plate meant that laboratory could not get accurate reading. Watermain flushed, set of resamples collected and results were all clean. No further action required.
- Summer sample station cleaning preventative maintenance schedule was added to help reduce the risk of inadvertent sample contamination.

DEVIATIONS FROM IDENTIFIED CRITICAL CONTROL LIMITS

** Limits have been identified through Risk Assessment process.

Pressure (<20 psi)

- One event at Colling-Woodlands, less than 20 minutes, reported as adverse (see above comments).

Source Water (Total Coliform >0, E-coli >0)

- Coliform detection in raw water samples.
- Of 657 samples collected, 23 of the samples had a bacteria count.
- Occurred in 8 of 18 municipal source wells.
- Across all systems.
- Both wells in New Lowell had a single no data, overgrown with target bacteria result.
- No E-coli detections in 2022.

Primary Disinfection (Free Cl₂ <0.30 mg/L)

- 9 Low chlorine alarms (5 in Stayner and 4 in Creemore) over the course of 2022. In all cases, automatic well shut alarm was triggered and an operator responded to site to correct the situation.
- 1 Low chlorine alarm in Nottawa and 1 low chlorine alarm in Colling-Woodlands, operator promptly responded to alarms and made necessary repairs or adjustments to restore chlorine levels and ensure drinking water safety.
- No adverse conditions resulted from alarms and operator response.

Secondary Disinfection (Free Cl₂ <0.20 mg/L)

- None.

RESULTS OF ANY INTERNAL OR EXTERNAL AUDITS

External Audit

- Completed in May 2022 by SAI Global.
- Year 2 desktop surveillance audit.
- 1 Opportunity for Improvement (OFI) relating to emergency planning.
- System deemed to be effective.

Internal Audit

- Completed in February 2022 by Marc denBok.
- Process audits of Valve Maintenance, Calibration / Verification, and Internal Auditing.
- 4 OFI's noted relating to documents and records control and competencies.
- System deemed to be effective.

RESULTS OF ANY RELEVANT EMERGENCY RESPONSES OR TESTS

Emergency Responses

- 1 Watermain break and 3 service leaks in Stayner were responded to and repaired.
- 2 Main valves were replaced in Stayner.

Emergency Preparedness

- Spill event emergency exercise was conducted.
- Main line valve exercising and inspections to maintain system preparedness for watermain break response.
- Standby generators were installed at the Creemore pumphouse and Stayner reservoir and training was provided to operators.

OPERATIONAL PERFORMANCES AND WATER QUALITY TRENDS

- Well water provides stable water quality.
- Stayner Well 1 had a decrease in water production capabilities in that started in the spring of 2022. Similarly, flow rates from Well 3 were reduced towards the end of 2022. Well technician contractors

have been in already this year to perform cleaning and rehabilitation of the wells to restore flow rate capacity. Likely to recommend more frequent rehabilitation schedule to maintain flow rates.

- Monthly flushing of new developments to maintain water quality within the distribution system while homes are being built has been continuing. Once the watermain is connected Clearview is assuming responsibility for the water quality. Some new developments are taking a considerable amount of time from when the watermains are connected to the point at which there are enough homes occupied to maintain water quality. There is a significant amount of staff time and volume of water used during this time. It was noted that several other municipalities charge for the water used to flush and the services or require that the developer contract to an accredited 3rd party to ensure water quality while the subdivision is being built out.
- Increase in distribution water quality control measures such as unidirectional flushing, swabbing and reservoir cleaning are proving effective in mitigating discoloured water concerns.

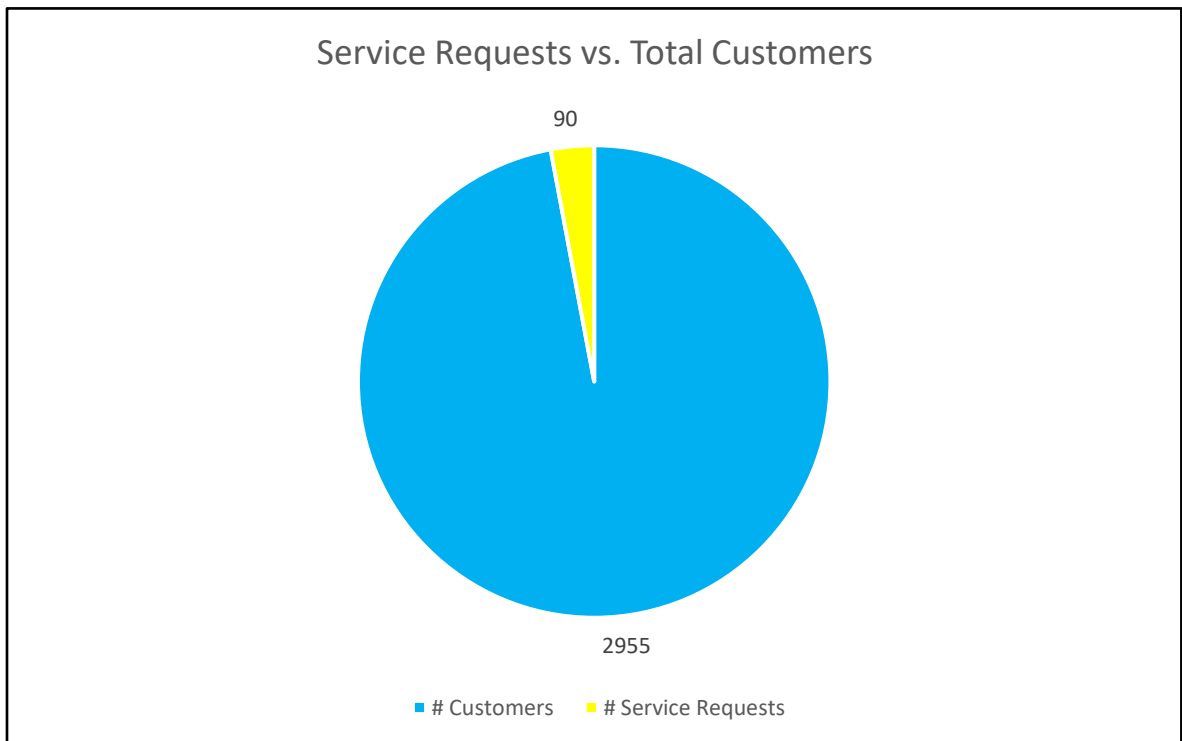
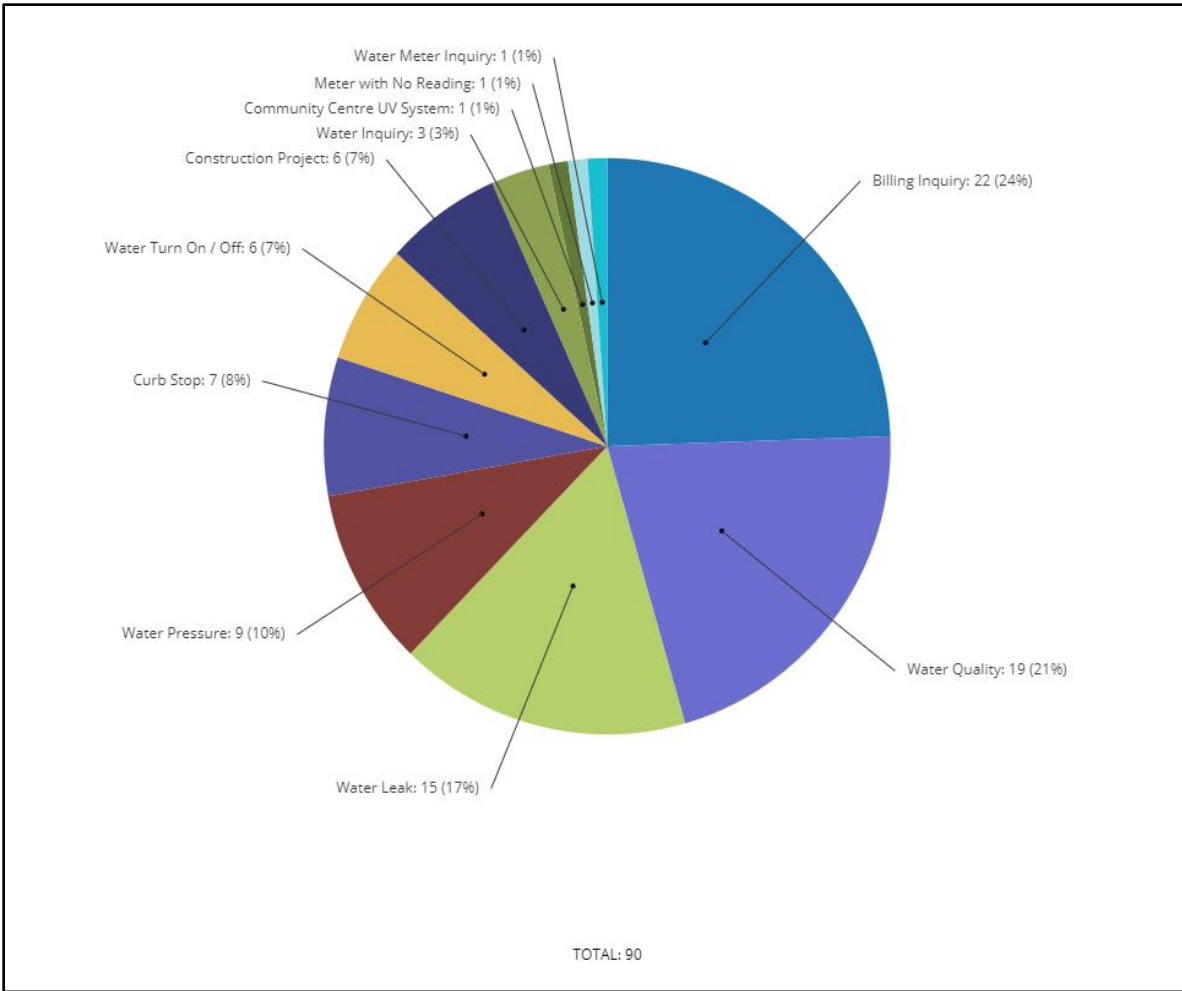
CHANGES IN RESOURCE REQUIREMENTS, INFRASTRUCTURE, PROCESS, PERSONNEL, DWQMS OR REGULATIONS THAT COULD AFFECT THE QMS

- Return to normal working environment after over 2 years of COVID limitations.
- Klondike Park well site and trunk watermain were moving forward to the point of tender but have since stalled. Clearview received the Drinking Water Works Permit amendment and Permit to Take Water that would allow the site to be constructed and operate.
- Permit to Take Water for a pumping test at the Klondike Park Road site was applied for and received along with the long-term Permit to Take Water for Well 6 at the same site.
- The standby generator at the Creemore pumphouse was commissioned.
- A standby generator at the Stayner reservoir was installed and commissioned.
- 862 utility locate requests in 2022, down 21.5% from 2021.
- Water staff took over locating of stormwater infrastructure.
- Staff would like to see another full-time operator.
- The Director intends to retire at the end of 2023.
- The Deputy Director is working on becoming more familiar with and involved in the water operations.
- A new Council was elected in October 2022.

CUSTOMER FEEDBACK

The Water and Sewer Foreman reported:

- Total of 90 service requests received in 2022, approx. 3% of customers.
- A number of the leaks were determined to be on homeowner property or internal plumbing. Staff have helped troubleshoot for homeowners.
- Less billing inquiries are being received. With new meter reading system, we can access daily readings and show customers more detail on their water consumption.
- Staff have noticed improvements in the quality of the water in the distribution system. Efforts from extra reservoir cleaning, swabbing and unidirectional flushing are paying off.



ANY RESOURCES NEEDED TO MAINTAIN THE QMS

- A link was added on the Township website for requesting a copy of the Operational Plan, as website availability is required by the updated Director's Direction for Operational Plans that came into effect in May 2022. To date no requests have been received.
- Asset management software use requires more attention so that the full functionality of the system can be taken advantage of. The water rates and Financial Plan are required to be updated in 2024. The asset management software should be used for this process instead of the antiquated spreadsheets.
- Succession and transition planning for the upcoming retirement of the Director of Public Works is underway.

SUMMARY OF THE EFFECTIVENESS OF THE LIFE CYCLE COSTING PROGRAM

- Program is effective.
- The Manager and Foreman review the asset inventory when the budget is being created and then reviewed by the Director.
- Expected that CityWide software instead of spreadsheets would have been in use by now for tracking lifecycle replacement and budgeting, requires more resources than currently dedicated.
- Watermain replacement reviewed and updated based on attributes and history of breaks and coordination with road needs.
- Long term costs built into water rates; study last updated in 2019. Required to be redone in 2024.

RESULTS OF INFRASTRUCTURE REVIEW

- 2023 Budget passed by Council on February 27, 2023.
- Water Capital \$49,521,082 in 2023 up from \$27,394,405 in 2022.
- \$1,200,000 from user fees, \$46,000,000 from development charges.
- Although development potential is higher than anticipated when the Water Financial Plan and rate study was completed in 2019, operational budget targets are still accurate.
- Creemore Master Plan has started.
 - Tribute Homes has drilled test wells with some success, an aquifer study and modeling is required.
 - Creemore reservoir needs significant repairs, future storage capacity options will be reviewed with the Master Servicing Plan.
 - Financing agreements for projects are being discussed, to be reviewed by Township solicitor.
- Water operating budget \$3,086,500 in 2023 down from \$3,566,300 in 2022.
- The DC Study includes all upgrades required to accommodate projected growth. Next update in 2024.
- The sizing of replacement mains includes engineer's analysis of future needs and is completed with water modelling. Fire flow testing conducted by operators in 2021 in Nottawasaga Station has confirmed it to be accurate.
- Construction of the Klondike Park Road well supply and trunk main did not start as expected. Shovel ready and can be started once a financing solution is found.
- Well # 6 in New Lowell continues to be off-line. The well could be used in an emergency.

MAINTENANCE, REHABILITATION AND RENEWAL PROGRAM REVIEW

- 2235 Work orders completed by water staff in 2022.
- Hydrant flushing and watermain swabbing programs.
 - Stayner monthly new developments and select dead ends.
 - All systems completed in both spring and fall.
 - Targeted unidirectional flushing completed in Stayner.
 - Buckingham Woods and Colling-Woodlands swabbed two times.
- 74 Main valves were exercised.
- 2 Main valves were replaced.
- 15 Water services installed.
- Regular maintenance occurred in pumphouses:
 - Chemical feed system; cleaning, part replacements.
 - Standby generators; exercised, oil and filter changes.
 - Equipment calibrations; flow meters, level sensors, chlorine analyzers.
 - Control valve maintenance.
- Colling-Woodlands, Buckingham Woods, Nottawa and Creemore reservoirs cleaned.
- Items replaced per Life Cycle maintenance program:
 - Chlorine pumps – Creemore, Stayner Pumphouse 1 and Stayner Pumphouse 3
 - Well level probes and data loggers replaced in Stayner, Nottawa, New Lowell and Creemore.
 - Buckingham Woods and Nottawa raw water flow meters replaced.
 - Locke Avenue watermain.

OPERATIONAL PLAN CURRENCY, CONTENTS AND UPDATES

- Version 26 – last updated on March 30, 2022.
- New revisions included addition of Deputy Director of Public Works role and formatting of the document.

STAFF COMMENTS AND SUGGESTIONS

- More operators are needed, especially for the on-call rotation. Currently only 3 operators participate in weekly schedule from November to April. Would like to have more operators included so that it is less frequent.
- Darryl Sweeney received OIT certificate, completed the entry level course and passed his Class 1 exam. Now just completing the required number of operating hours to obtain Class 1 certificate, should have in spring of 2023.

THE EFFECTIVENESS OF THE RISK ASSESSMENT PROCESS

- Quarterly risk assessment meetings have been occurring on schedule, were able to return to in person meetings in 2022.
- Lots of good discussions taking place.
- Held annual full staff meeting after missing previous 2 years due to COVID restrictions.

- Side meetings were held to discuss Stayner supply capacity and reverse flow monitoring from water meter reports.

BEST MANAGEMENT PRACTICES

- None noted in MECP inspection reports.
- Permit to Take Water applications and water taking reporting completed online.
- Increased reservoir cleaning, flushing, and swabbing in small systems have shown to improve water quality.
- Unidirectional flushing being completed in sections of Stayner.
- All operators took the New Watermain Commissioning course from the Walkerton Clean Water Centre.
- Online training software platform being used to facilitate regular training sessions and obtain accredited training for operators.
- Best Management Practices for Water and Wastewater Summit attended by staff.
- Labour Management Committee meeting with the union staff are being held regularly.

POTENTIAL NON-CONFORMITIES

- Discussed at risk assessment meetings:
 - New Operator added to on-call rotation.
 - Cyber security attacks.
 - Historian computer hardware issues.
 - Dedicated Locator services.
 - Rogers outage – July 8, 2022
 - Backflow device testing at Township facilities.
 - Meter calibration services.
 - Creemore closed loop operation and water main break risk.
 - New Council QMS Policy and Operational Plan endorsement.
 - Stayner water allocation and new development limitations.

FOLLOW UP ON ACTION ITEMS FROM PREVIOUS MANAGEMENT REVIEWS

- All action items from last year's meeting were completed within the projected time frame.

STATUS OF ACTION ITEMS IDENTIFIED BETWEEN REVIEWS

- Number of items have been identified through corrective actions, risk assessment meetings, audits, best management practices, staff suggestions etc.
 - 21 Action Item Requests
 - 6 Corrective Action Reports
- Items include creation of procedures, operator training, operational improvements.
- Currently in progress
 - 9 items are being worked on.
 - 8 items are complete but waiting for an effectiveness assessment.