Agenda

Operations Committee

Chair: Councillor Plummer
Tuesday, November 19, 2024
Council Chambers
6:00 p.m.

(This meeting is live streamed on the City's YouTube page or it can be viewed on YourTV Community Channel 12)

1. **Call to Order**

2. **Disclosure of Pecuniary Interest & General Nature Thereof**

3. **Approval/Amendment of Meeting Agenda**

4. **Approval of Minutes**
   - Operations Committee – September 17, 2024

5. **Business Arising from Minutes**

6. **Presentations/Delegations**
   a. Partners for Climate Protection – Milestone 2 Presentation – M. McLaughlin

7. **New Business**
   a. Bulk Water and Septage Receiving Depot – Tender No. 23-1067A – B. Lewis
   b. 2023 DWQMS Management Review Report – B. Lewis

8. **Adjournment**

Draft Operations Committee Meeting

Council Chambers
Pembroke, Ontario
September 17, 2024
7:31 p.m.

1. Call to Order

Present:
Councillor Plummer, Chair
Mayor Gervais
Deputy Mayor Abdallah
Councillor Kuehl
Councillor Lafreniere
Councillor Purcell

Regrets:
Councillor Jacyno

Also Present:
David Unrau, Chief Administrative Officer/Deputy Clerk
Angela Lochtie, Treasurer/Deputy Clerk (virtual)
Owen Hutton, Planner
Brian Lewis, Director of Operations
Victoria Charbonneau, Municipal Clerk

2. Disclosure of Pecuniary Interest and General Nature Thereof

There were no disclosures of pecuniary interests declared.

3. Approval/Amendment of Meeting Agenda

Motion:
Moved by Councillor Kuehl
Seconded by Councillor Purcell
That the agenda of the Operations Committee meeting of September 17, 2024, be approved as circulated.
Carried

4. New Business

a. FCM Grant Application: Green Municipal Fund Update

Treasurer/Deputy Clerk Lochtie presented the report indicating that a resolution would be coming forward to the September 17, 2024 Council meeting. A discussion was held and the following points were raised:

- It was discussed that the numbers presented include provisions for conservative cost contingencies. Should the grant application be approved, and budget numbers that the ministry is committed to funding come in lower than anticipated, Council has a clear picture of what the project could cost
- Clarification was provided that support of the resolution (and associated budget) is for grant application purposes, taking into account the conservative cost contingencies. If the grant

application is approved, actual numbers of grant program commitment will be outlined in a grant funding agreement (ministry funded portion and municipal funded portion), that Council can accept, or decline based on terms presented.

- It was iterated that actual costs will be clarified when the RFP process is completed, and submissions are reviewed.

Motion:
Moved by Deputy Mayor Abdallah
Seconded by Councillor Purcell
That the Operations Committee recommend approval of the City's revised draft resolution in support of the City's application to the FCM Green Municipal Fund to Council for a transit pilot project.
Carried

b. Appointment of By-law Enforcement Officers

Mr. Hutton presented the report indicating that a by-law would be coming forward to this evening's Council meeting. The following points from the report were highlighted:

- The updated by-law to is provide for additional staff hired by Protec-5, the City of Pembroke's Animal Control contractor
- Additionally, the City of Pembroke has hired additional staff in the Planning, Building, & By-law Enforcement Department, that is required to be appointed to enforce City by-laws for efficient business operations continuity

Motion:
Moved by Councillor Purcell
Seconded by Councillor Kuehl
That the Operations Committee endorse and recommend to Council for approval, By-law 2024-55 being a By-law to appoint Municipal By-law Enforcement Officers for the City of Pembroke.
Carried

c. Update of By-law to Regulate Traffic

Mr. Lewis presented the information report, for information purposes. The Operations Department reviewed and updated wording in By-law 2020-64 where required. Changes made to the by-law are outlined in the report.

d. Moratorium Relief – 135 Bell Street

Mr. Lewis presented the report. Indicating:

- that the developer of 135 Bell Street, would like to proceed with the construction of a housing development in the 2024/2025 construction season. The works included in this housing construction are the connections to the City' existing underground water, sanitary and storm infrastructure located under Bell Street.
- As the newly installed surface will not be in place for the usual 15 -20 years prior to reconstruction/resurfacing, the department feels that lifting the moratorium for this specific instance is reasonable.

Motion:
Moved by Deputy Mayor Abdallah
Seconded by Councillor Lafreniere
That the Operations Committee approve the relief of the City's Three (3) year moratorium for the development at 135 Bell Street, effective immediately.

Committee Report

To: Councillor Andrew Plummer
Operations Committee

From: Marielle McLaughlin, Manager
Operations Department

Date: 2024-11-19

Subject : Partners for Climate Protection – Milestone 2 Presentation

Recommendation:

This report is for information purposes.

CAO Review :

I concur with the information presented in this report.

Financial Implications/Comment:

There are no immediate financial impacts associated with this report.

Background:

In 2021 the City joined the program Partners for Climate Protection (PCP) delivered by the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability.

Milestone 1 was completed and presented to Council in September of 2023.

Discussion:

The PCP program supports and guides municipalities in reducing GHG emissions through a five (5) Milestone Framework. The five (5) milestones are as follows;

- Milestone 1 – Creating a baseline emissions inventory and forecast (Complete)
- Milestone 2 – Set emissions reduction target
- Milestone 3 – Develop a local action plan
- Milestone 4 – Implement the local action plan
- Milestone 5 – Monitor progress and report results

The City has now completed Milestone 2 and have been provided with a report that summarizes a feasible reduction in emissions that the City can achieve through the implementation of appropriate emission reduction measures.

Arpa Barua and Linda Lattner from WSP, the consultant that completed Milestones 1 and 2, are here this evening to provide Committee with a presentation on the City's Emission Reduction Targets.

Strategic Plan Impact:

This supports the City's commitment to be sustainable from an environmental perspective.

Attachments:

Consultant Milestone 2 Presentation

Respectfully submitted,

Marielle McLaughlin, Manager
Operations Department

David Unrau
Chief Administrative Officer

City of Pembroke

Milestone 2

Final Presentation

19th November 2024

PCP Program – Why does it matter?

- Climate change is an urgent issue that is impacting communities across Canada and globally.
  - Action on climate change must be taken by reducing emissions in your municipality
- Moving through the five milestones can save a municipality money, improve air quality, create jobs, improve residents' health and more (PCP, 2021).

PCP Milestone 1 - Background

- In 2021, City of Pembroke joined the PCP Program.
- In 2023, The City of Pembroke worked with WSP and completed Milestone 1 which focused on the following tasks:
  - Creating a baseline emissions inventory and forecasts for the Corporation of the City of Pembroke
  - Creating a baseline emissions inventory and forecasts for the Community of the City of Pembroke
- The approach follows the Global Protocols for Community-Scale Greenhouse Gas Emissions Inventories (GPC) BASIC level of reporting, which is considered the international best-in-class approach for quantifying emissions at the local level.
- Baseline Year of 2019 was chosen as it was the most recent year with a complete dataset.
- An energy and greenhouse gas (GHG) baseline and forecast reveal how a City and Community consumes energy, where GHG emissions are emitted, helps identify opportunities for strategies to reduce energy and emissions, and provides the necessary baseline and data from which progress is measured.

Difference Between Corporate Emissions and Community Emissions

	Corporate Emissions	Community Emissions
Description	Directly controlled by the municipal government.	Stem from broader activities of residents, businesses and private transportation.
Examples	Municipal Buildings	Residential Energy Use
	Vehicle Fleets	Private Transportation
	Street Lighting	Industrial Activities
	Waste Management	

PCP Milestone 1 – Data Sources

- Baseline Year of 2019 was chosen as it was the most recent year with a complete dataset.
- Corporate (City) GHG Emissions Inventory
  - ✓ Corporate Buildings
  - ✓ Corporate Vehicle Fleet
  - ✓ Streetlights
  - ✓ Water & Sewage
  - ✓ Waste
- Community GHG Emissions Inventory:
  - ✓ Residential Energy Consumption
  - ✓ Commercial/Institutional Energy Consumption
  - ✓ Industrial Energy Consumption
  - ✓ Transportation
  - ✓ Waste
  - ✓ Wastewater Treatment (Biogenic)

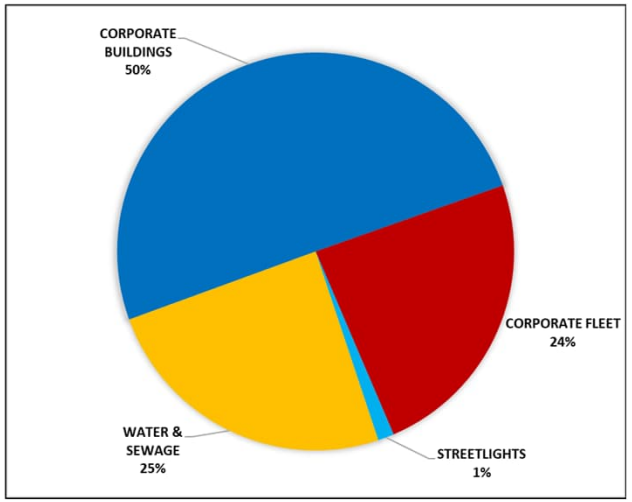
PCP Milestone 1 – Corporate Emissions Results

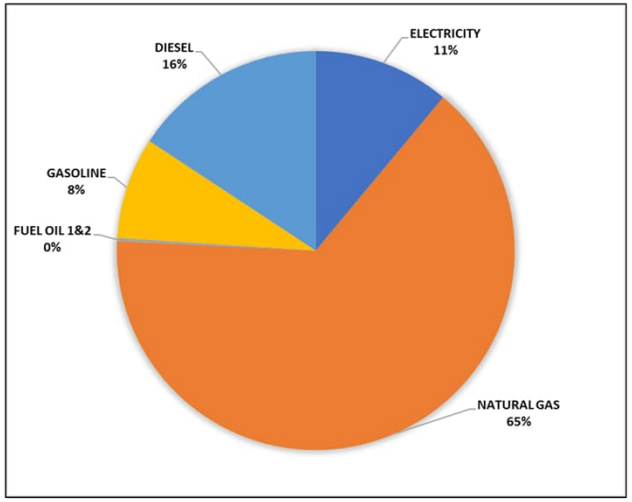
Table 1: Corporate GHG Emissions - 2019

CATEGORY	CO_2e PRODUCED (Tonnes)	CO_2e PRODUCED PERCENTAGE (%)
CORPORATE BUILDINGS	921	50
CORPORATE FLEET	440	24
STREETLIGHTS	24	1
WATER & SEWAGE	451	25
WASTE	0	0
TOTAL	1,836	100

Table 2: Corporate Energy Consumption - 2019

ENERGY SOURCE	CONSUMPTION (GJ)	CO_2e PRODUCED (Tonnes)	CO_2e PRODUCED PERCENTAGE (%)
ELECTRICITY	26,124	203	11
NATURAL GAS	23,174	1,187	65
GASOLINE	8,066	151	8
DIESEL	15,555	289	16
FUEL OIL 1&2	281	5	0.27
TOTAL	73,200	1,835	100





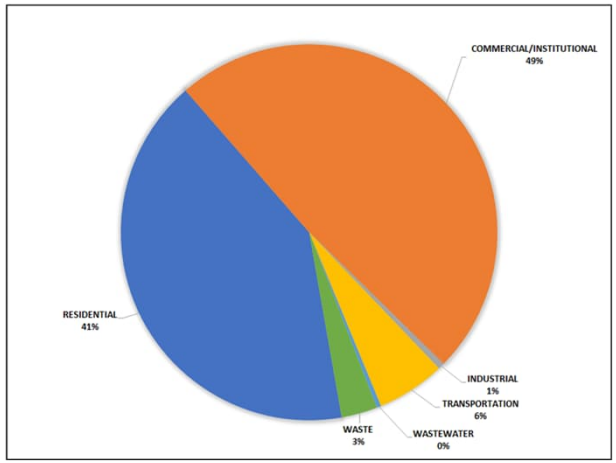
PCP Milestone 1 – Community Emissions Results

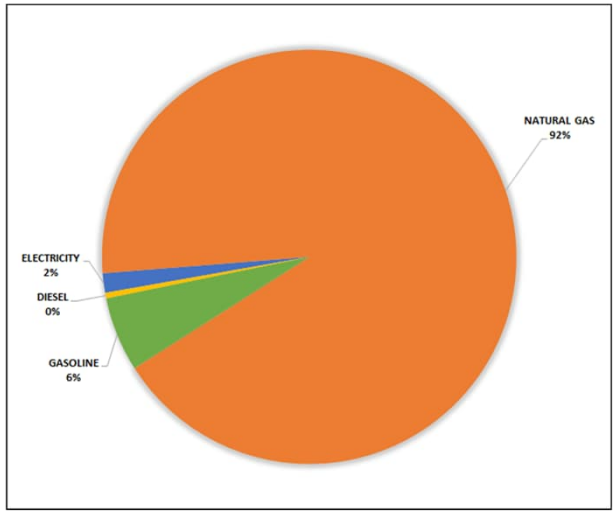
Table 3: Community GHG Emissions - 2019

CATEGORY	CO_2e PRODUCED (Tonnes)	CO_2e PRODUCED PERCENTAGE (%)
RESIDENTIAL	112,668	41
COMMERCIAL/ INSTITUTIONAL	132,677	49
INDUSTRIAL	1,545	1
TRANSPORTATION	16,481	6
WASTE	8,400	3
WASTEWATER TREATMENT	1,005	0.4
TOTAL	272,776	100

Table 4: Community Energy Consumption - 2019

ENERGY SOURCE	CONSUMPTION (GJ)	CO_2e PRODUCED (Tonnes)	CO_2e PRODUCED PERCENTAGE (%)
ELECTRICITY	480,419	4,003	2
NATURAL GAS	763,738	242,886	92
GASOLINE	602	15,326	6
DIESEL	221	1,154	0.4
TOTAL	1,244,980	263,369*	100





PCP Milestone 2 - What is an Emissions Reduction Target?

- GHG emission reduction targets create a basis for achieving PCP objectives and provide an end goal in which a municipality may track their progress in reaching.
- Setting Targets could do the following:
  - Act as a driver to implement carbon reduction strategies
  - Raise internal awareness on risks and opportunities associated with climate change
  - May result in cost savings with improvements made in resource efficiency and process changes
  - Demonstrate leadership and corporate responsibility
  - Improve reputations among stakeholders, employees, and the public

Federal, Provincial, and International Reduction Targets

- Federal targets are set by the Canadian government to meet its commitments under the Paris Agreement:
  - Goal of reducing GHG emissions by 40 to 45% below 2005 levels by 2030 and achieving net-zero emissions by 2050.
- These targets guide municipalities in developing their own local climate plans that contribute to Canada's broader emissions reduction goals.
- Provincial policies often shape the resources and incentives available to municipalities for initiatives like renewable energy adoption, building retrofits, and electric vehicle (EV) infrastructure.

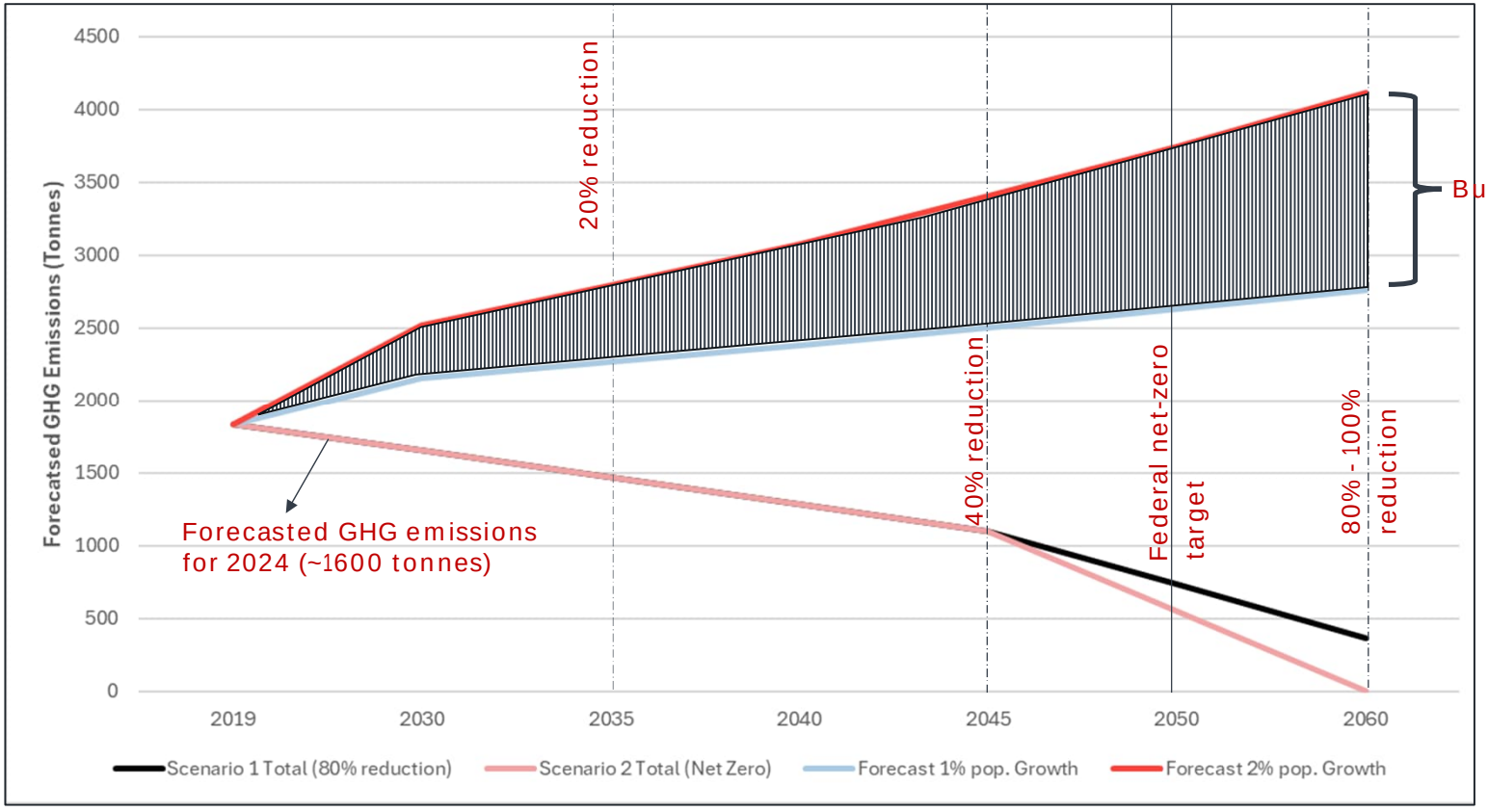
Table 5: Current Canada, Ontario, and IPCC GHG Emissions Reduction Targets

Organizing Body	GHG Reduction Target %		
	2030	2040	2050
Government of Ontario (Provincial)	30	60	100 (Net-Zero)
Government of Canada (Federal)	40	70	100 (Net-Zero)
International (Intergovernmental Panel on Climate Change)	45	70	100 (Net-Zero)

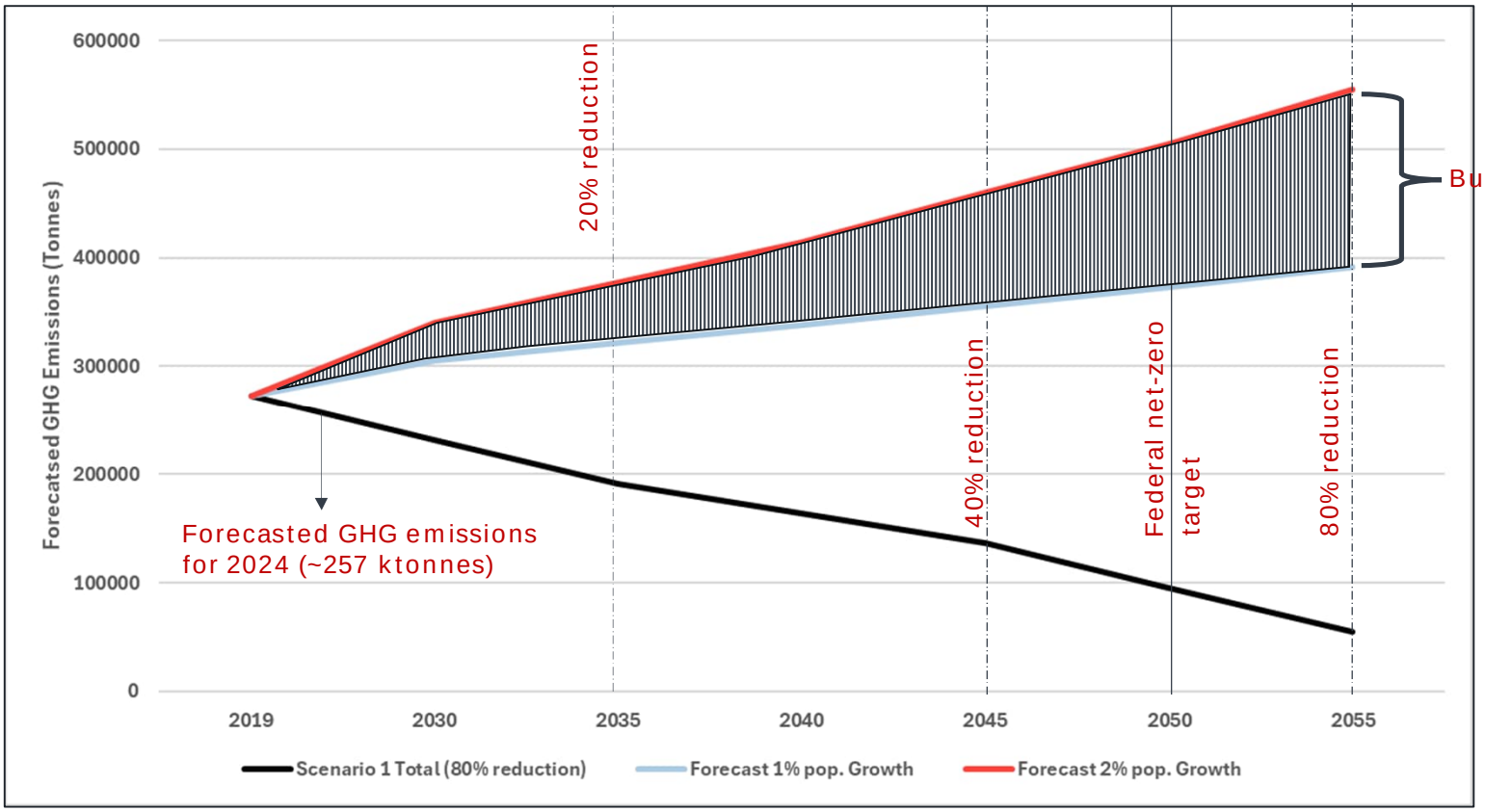
Recommended GHG Reduction Targets

Corporate GHG Emissions Reduction Targets	
Short-term Target	Reduce corporate GHG emissions by **20%** below the baseline year emissions **by 2035**
Medium-term Target	Reduce corporate GHG emissions by **40%** below the baseline year emissions **by 2045**
Long-term Target	Reduce corporate GHG emissions by **80%** below the baseline year emissions **by 2060**
Community GHG Emissions Targets	
Short-term Target	Reduce corporate GHG emissions by **30%** below the baseline year emissions **by 2035**
Medium-term Target	Reduce corporate GHG emissions by **50%** below the baseline year emissions **by 2045**
Long-term Target	Reduce corporate GHG emissions by **80%** below the baseline year emissions **by 2055**

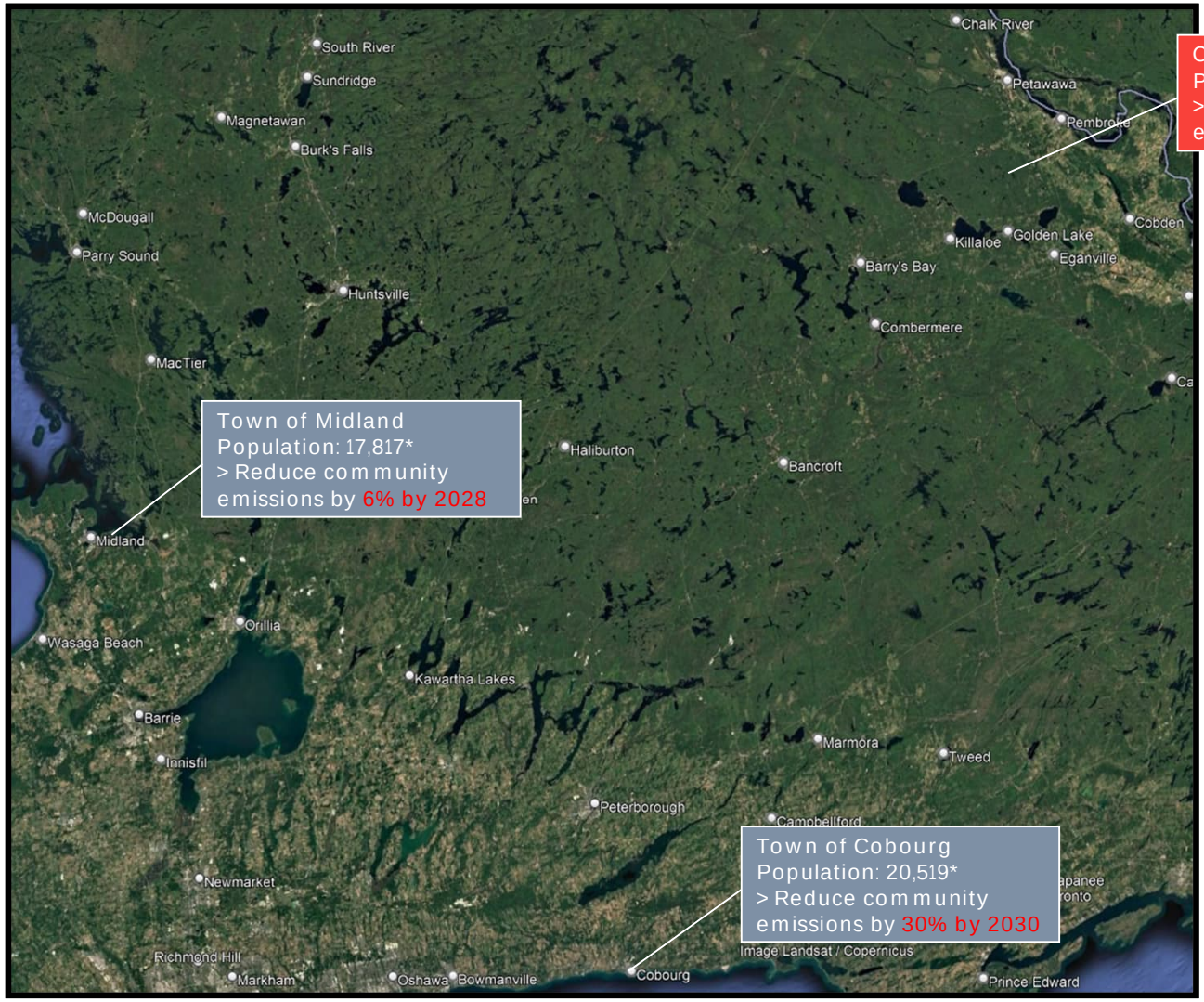
Corporate GHG Emissions Forecast



Community GHG Emissions Forecast



Targets Established by Comparable Municipalities



City of Pembroke
Population: 14,364*
> Reduce community emissions by 20% by 2030

Town of Midland
Population: 17,817*
> Reduce community emissions by 6% by 2028

Town of Cobourg
Population: 20,519*
> Reduce community emissions by 30% by 2030

*Population as of 2021

PCP Recommendations

- Direct GHG emissions reduction activities are the most effective way to mitigate effects of climate change and should be prioritized.
- Carbon offsets and sequestration opportunities are additional opportunities that can help the city reach absolute reduction.
- PCP requires that reduction targets are expressed in absolute terms.
- Some quick wins for large savings:
  - ✓ Conduct energy audits to identify areas for large savings and significant impacts
  - ✓ Consult with residents and other community stakeholders regarding emission reduction initiatives

Actions to Achieve Targets

Transportation

Action: Improve and encourage public and active transportation

Result: Reduce gasoline and diesel usage by corporation and community vehicles, thus reducing GHG emissions

Community Monitoring & Energy Efficiency

Action: Incorporate energy management into annual building maintenance procedures

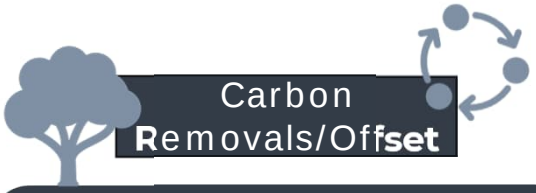
Result: Reduce energy demand that can be adjusted using maintenance procedures for continuous improvement

Natural Gas and Fuel Oil No. 1 & 2 Combustion

Action(s):

- Include renewable energy in new construction & major corporate and communal rehabilitation projects
- Incorporate environment-based solutions
- Using carbon offsets/renewable energy credits
- Heat recovery systems for new constructions/smaller buildings

Result: Reduce demand/reliance on natural gas and fuel oil 1&2



Carbon Removals/Offset

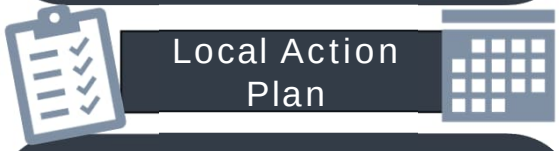
Action: Implement or continue Vegetation/Non-Vegetation Carbon Removal programs (i.e. community tree planting incentive program).

Result: Create awareness and incentivize carbon removals.

Community Engagement

Action: Community engagement, with outreach and activities that are climate positive

Result: Involve community members to aid in reduction of emissions outside of City's direct control.



Local Action Plan

Action(s):

- Climate action through control over owned emissions and influence over indirect emissions
- Climate action through incentives
- Prioritize GHG emissions from transportation and heating systems

Result: Reduce GHG emissions to meet the reduction targets set in Milestone 2.

Thank you

Linda Lattner – linda lattner@wsp.com
Principal Engineer

Arpa Barua - arpa.barua@wsp.com
Climate Resilience Professional

wsp.com

Committee Report

To: Councillor Andrew Plummer
Operations Committee

From: Brian Lewis, Director
Operations Department

Date: 2024-11-19

Subject : **Bulk Water and Septage Receiving Depot –Tender No. 23-1067A**

Recommendation:

That the City of Pembroke Operations Committee approve the award of Bulk Water and Septage Receiving Station Tender No. 23-1067A to 902474 Ontario Limited O/A Do-All Construction Ltd. for $1,291,396.00 plus HST, (as the lowest responsive bidder);

And that, additional expenditures of $50,000.00 for contingency be approved, bringing the total project cost to $1,341,396.00 plus HST;

Furthermore, that the budget shortfall of $443,170.62 be funded through the 2025 Capital Budget.

CAO Review :

The CAO supports the recommendation of the department.

Financial Comment:

- The 2024 Capital Budget has a combined budget of $1,312,010.00 for the Bulk Water and Septage Receiving Depot.
- The project costs as tendered, including design, site preparation, the completed pre-purchase of the septage receiving station, contract administration, construction, additional expenditures and net HST total $1,755,180.62.
- The shortfall in the budget, after carry-over, will be included in the appropriate Capital financing funds in the 2025 budget year.

Background:

- The contract was publicly advertised and tendered with four (4) bids received.

- Tenders were opened after 2:00:59pm on Thursday, November 7, 2024 and were evaluated by the City's Treasurer, Manager of Operations, Supervisor of Water & Sewer and Supervisor of Roads & Fleet.
- Jp2g Consultants Inc., the design consultant for the project, reviewed and analysed the bids
- Tenders were opened publicly and broadcast virtually with bidders in attendance. All bidders were provided with unofficial bid opening results following the tender opening.
- Bids were received as follows:

Contractor	Contract Value (HST extra)	Compliant
902474 Ontario Limited O/A Do-All Construction Ltd	$1,291,396.00	Yes
McCrae Excavating	$1,350,766.00	Yes
JWK Contracting Inc.	$1,352,604.03	Yes
BEI Excavating Inc.	$1,545,827.70	Yes

Discussion:

- The establishment of the John Beevis Bulk Water and Septage Receiving Station will provide for bulk water sales to local contractors that require water for construction activities and dust suppression, as well as to water haulers that transport water for various uses (swimming pool filling, milk production facilities, etc). Local businesses purchase bulk water from the City for their mobile cleaning operations and weed control services. The septage receiving station allows for the proper disposal of septage from septic pumping and cleaning service providers as well as for the disposal of septage from temporary washroom facilities.
- In the 2025 operations and maintenance budgets, $204,000 in revenue is included for bulk water sales and septage receiving sales. It is anticipated that revenues will increase annually, especially in the first few years of opening the new depot, as the location is more accessible to large hauling services, and as the City is reviewing the reinstatement of accepting portable toilet waste as part of septage receiving.
- The clearing of the lands for the new depot, establishment of the driveway access, and the purchase of the new bulk water station are already completed. The order for the septage receiving station equipment has been done. The subject tender of this report is for the installation of the equipment and the site works and underground infrastructure required.

Alternatives Considered:

- That the project be awarded as tendered with the budget shortfall being funded in the 2025 Capital budget. It is anticipated that roughly $1.1M worth of the project costs outlined above will be completed in the 2025 budget year.
- That the project be awarded as tendered with the majority of the paving works for the facility being completed in the 2026 budget year. Minor paving works at the entrance and around the septage receiving station would be required to be completed during this tendered construction. This would reduce the budget required by approximately $125,000.
- That the tender be cancelled and retendered in 2025. This project was tendered later in the 2024 construction season to provide for of a portion of the works being completed in the late fall/early spring, when contractors are usually less busy, to take advantage of available cost savings and to secure 2024 materials pricing. It is likely that there could be a tendered cost increase if delaying the construction due to continuing material price increases.

Strategic Plan Impact:

- To develop additional revenue streams.
- To ensure overall infrastructure is in good condition (linear and facilities)

Attachments:

None

Respectfully submitted,

Brian Lewis, Director
Operations Department

David Unrau
Chief Administrative Officer

Committee Report

To: Councillor Andrew Plummer
Operations Committee

From: Brian Lewis, Director
Operations Department

Date: 2024-11-19

Subject : **2023 Ontario Drinking Water Quality Management Standard (DWQMS) Management Review Report**

Recommendation:

That the City of Pembroke Operations Committee accept the DWQMS Management Review Report for 2023; and

Furthermore, that the Mayor and Chair of the Operations Committee sign and approve as indicated.

CAO Review :

CAO supports the recommendation of the department.

Financial Comment:

There are no financial impacts to this report. Costs associated are included in the annual operating and maintenance budgets

Background:

- A requirement of the Ontario Drinking Water Quality Management Standard (DWQMS) Operational Plan is for the Quality Management System (QMS) Representative to ensure annual management review results are conveyed to Top Management and the Owner (Council). This report fulfills that requirement.

- This report contains a summary of information that Top Management must review annually in accordance with the Management Standard.

- The DWQMS is the key tool that supports and ensures that Council, as the Owner of the drinking water systems, is meeting its duties and responsibilities under the *Safe Drinking Water Act* and Standard of Care.

- The DWQMS has been designed for continual improvement, which is the foundation of the DWQMS Policy endorsed by Top Management and Council. The current review considers the entire 2023 calendar year (the "review period") and where appropriate, touches on activities continuing in 2024.

- The DWQMS sets out a mandatory list of 16 issues to be examined during annual reviews and reports.

- The detailed results have been reviewed by Top Management in accordance with the DWQMS management review system procedure.

Discussion:

Highlights of the DWQMS Management Review findings are:

- During 2023 the City's Drinking Water System scored 100.00% Compliance Rating across the board after a detailed Ministry of the Environment, Conservation and Parks (MECP) inspection;
- The water quality testing program meets or exceeds regulations;
- Maintenance procedures are appropriate and continually improved and updated;
- Shortcomings are being addressed through the Preventative & Correction Action Request process;
- The operator certification program is working; and
- Staff are following procedures and showing a commitment to continual improvement.

In short, the 2023 Management Review shows the DWQMS is functioning successfully and reinforces the fact that the City of Pembroke produces and supplies high quality, safe drinking water.

The 2023 External Surveillance Audit of the Pembroke Drinking Water System was completed November 30, 2023, with only one (1) Minor Non-conforming finding. Staff will be addressing the Minor Non-conformance within the 60 (sixty) day time frame allowed.

Alternatives Considered:

Not Applicable

Strategic Plan Impact:

Overall infrastructure is good condition (linear and facilities)

Attachments:

City of Pembroke 2023 DWQMS Management Review Report

Respectfully submitted,

Brian Lewis, Director
Operations Department

David Unrau
Chief Administrative Officer

CORPORATION OF THE CITY OF PEMBROKE

2023 D.W.Q.M.S. Management Review Report

City of Pembroke – Pembroke Drinking Water System
2023 DWQMS Management Review October 2024
D. Burton, Supervisor, Drinking Water Treatment/Compliance, ORO
Quality Management System Representative

City of Pembroke
2023 DWQMS Management Review Report

R. Gervais
Mayor

A. Plummer
Chair - Operations Committee

D. Unrau
Chief Administrative Officer

Douglas Burton
Supervisor Drinking Water Treatment /Compliance, DWQMS Representative

Brian Lewis
Director of Operations

TABLE OF CONTENTS

LIST OF TABLES

List of Charts

Appendices

1.0 INTRODUCTION TO DWQMS MANAGEMENT REVIEW

The requirements of management review are dictated by Element 20 “Management Review” of the Ministry of the Environment, Conservation and Parks (MECP) Drinking Water Quality Management Standard (DWQMS). This standard requires that a management review be conducted at least once every 12 months to evaluate the continuing suitability, adequacy and effectiveness of the Quality Management System (QMS).

Through the management review process, Top Management shall identify deficiencies and action items (including personnel responsible and proposed timelines for implementation) to address the deficiencies. Results of the management review are reported to the Owner through Council Reports.

The following is a summary of information that Top Management must review annually in accordance with the Ontario DWQMS. The current review considers the entire 2023 calendar year (the “review period”) and where appropriate, touches on activities continuing in 2024. The following 16 aspects must be considered in the annual review:

The standard requires that input into management review include:

1) incidents of regulatory non-compliance
2) incidents of adverse drinking-water tests
3) deviations from critical control point (CCP) limits and response actions
4) the risk assessment process
5) internal and third-party audits
6) emergency response testing
7) operational performance
8) raw water supply and drinking water quality trends
9) action items from previous management reviews
10) status of other management action items
11) changes that could affect the quality management system
12) consumer feedback
13) resources to maintain the DWQMS
14) infrastructure review
15) operational plan: currency, content, updates
16) staff suggestions and recommendations for improvement

This report provides an overview of the operational performance of our drinking-water systems, as well as the functional performance of our management system.

2.0 EXECUTIVE SUMMARY

A requirement of the Ontario Drinking Water Quality Management Standard (DWQMS) Operational Plan is for the Quality Management System (QMS) Representative to ensure annual management review results are conveyed to Top Management and the Owner (Council). This report fulfills that requirement.

This report contains a summary of information that Top Management must review annually in accordance with the Management Standard.

The DWQMS is the key tool that supports and ensures that Council, as the Owner of the drinking water systems, is meeting its duties and responsibilities under the *Safe Drinking Water Act* and Standard of Care.

The DWQMS has been designed for continual improvement, which is the foundation of the DWQMS Policy endorsed by Top Management and Council. The current review considers the entire 2023 calendar year (the "review period") and where appropriate, touches on activities continuing in 2024.

The DWQMS sets out a mandatory list of 16 components to be examined during annual reviews and reports.

Top Management has reviewed the detailed results in accordance with the DWQMS management review system procedure.

Highlights of the review findings are:

- The City's Drinking Water System scored 100 % per cent across the board after a Detailed Ministry of the Environment inspection.
- The water quality testing program meets or is better than regulations.
- Maintenance procedures are appropriate.
- Shortcomings are being addressed.
- The operator certification program is working; and
- Staff is following procedures and showing a commitment to continual improvement.

In short, the 2023 Management Review shows the DWQMS is being implemented successfully and reinforces the fact that the City of Pembroke produces and supplies high quality, safe drinking water.

3.0 BACKGROUND & TIMELINE

November 18, 2009

City Council endorsed the City's QMS also known as the Operational Plan, which is in conformance with Ministry of Environment standards.

October 6, 2010

The City of Pembroke successful in meeting the requirements of Ontario's Drinking Water Quality Management Standard to the satisfaction of the CGSB Accreditation Program for Operating Authorities and awarded a Limited Scope – Entire accreditation (Drinking Water Quality Management System: Operational Plan # 198-401)

September 29, 2011

The City of Pembroke files application for Full Scope – Entire Accreditation. The Operating Authority must have a successful On-Site External Audit of its Operational Plan conducted by an accredited third party.

May 2012

The city is notified that C.G.S.B. had completed their Document Review Audit of our Full Scope – Entire Accreditation.

On May 28, 2012, the City of Pembroke Signed the required Transfer of Accreditation Agreement as required before the Ministry of the Environment's June 22, 2012, deadline, selecting QMI-SAI Global as our new Accreditation Body.

Maintaining Accreditation - Audit Cycle

The Quality Management System is subject to an External Audit each calendar year. The audit cycle consists of Surveillance Audits for 2 (two) concurrent calendar years, followed by a Full Scope Accreditation Audit every 3rd (third) year.

12 Month Surveillance Audits 2014, 2015, 2017, 2018, 2020, 2021, 2023

The 12 Month Surveillance Audit is conducted to evaluate the facilities and processes with the operating authority's QMS to obtain audit evidence and to determine a) whether the quality management activities and related results conform to DWQMS requirements, and b) if they have been effectively implemented.

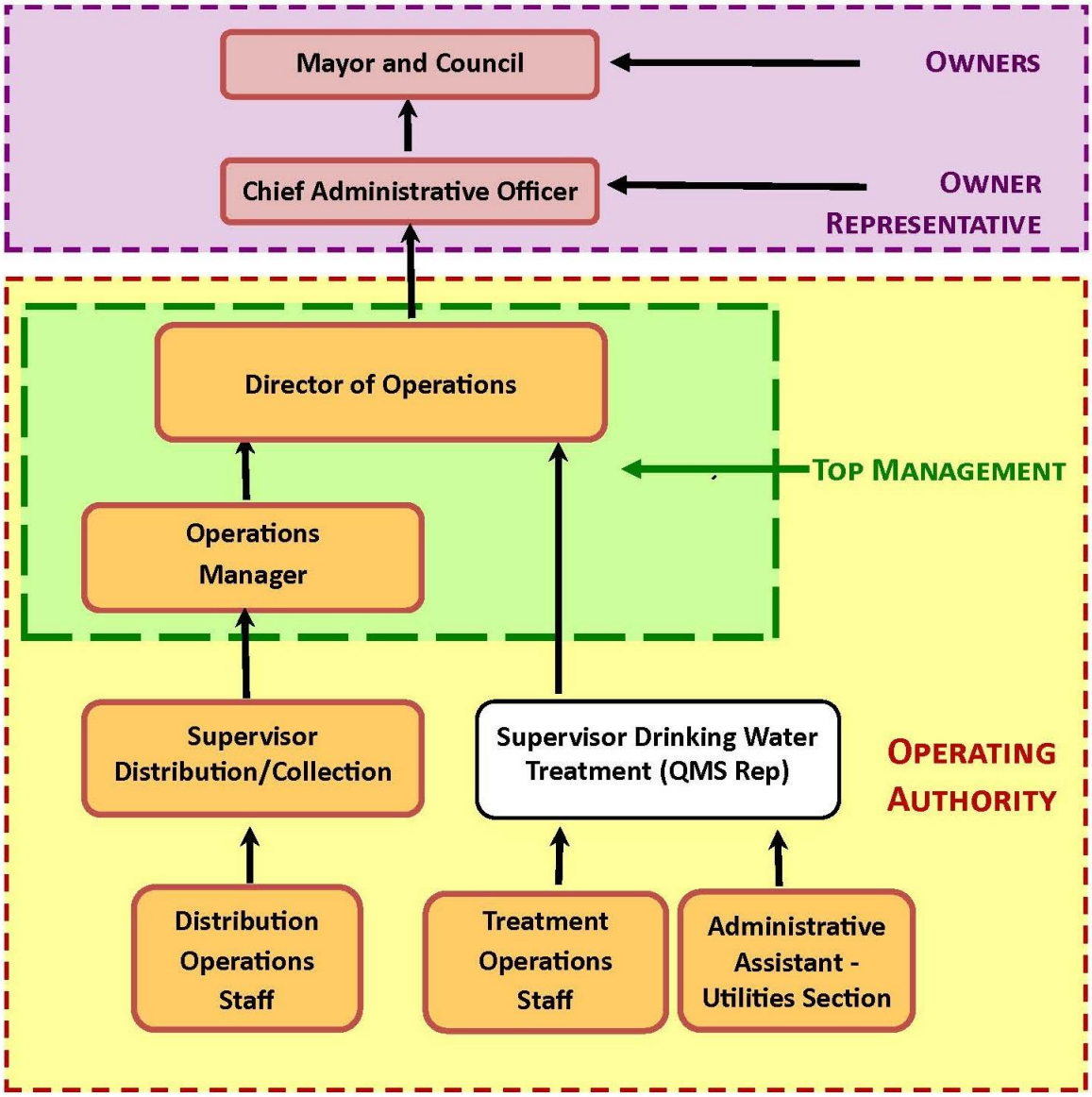
Full Scope Accreditations 2013, 2016, 2019, 2022

The External Audit consists of a full day on-site Audit of our documentation, procedures and conducting interviews with key personnel and operating staff involved with the QMS. November 2, 2022, marked the 4th (fourth) Successful External Audit of the Pembroke Drinking Water Quality Management System, conducted by SAI Global.

4.0 Roles & Responsibilities

Element 9 of the DWQMS requires the Operational Plan to document the organizational structure, roles, responsibilities and authorities of the Operating Authority (City of Pembroke). The table below outlines each group that has a role in the delivery of safe drinking water and their respective responsibilities.

Chart 1: DWQMS Organizational Structure



DWQMS Roles & Responsibilities

Participants	Roles & Responsibilities
Owner	• Maintain Municipal Drinking Water Licence • Endorse DWQMS Operational Plan • Endorse DWS Financial Plan • Provide resources for operation and maintenance of the DWS • Ensure that DWS is operated in compliance with legislation
Top Management	• Develop and endorse DWQMS Policy & Operational Plan • Allocate resources for operation and maintenance of the DWS • Participate in DWQMS Infrastructure Review, Internal Audits, and Management Review • Communicate with Owner, Staff, Suppliers & Consumers
QMS Representative	• Ensure that the DWQMS is established, implemented and maintained • Report to Top Management regarding QMS performance • Promote awareness of legislation, regulations, and QMS throughout Operating Authority • Administer document and record control processes
Operating Authority	• Meet and maintain required competencies for role • Perform work relating to the drinking water system as assigned • Participate in DWQMS Internal Audits • Maintain & continually improve DWQMS • Work in compliance with legislation, regulations, and procedures

5.0 Drinking-Water System Performance

i. Ministry of Environment, Conservation and Parks (MECP): inspection reports: All waterworks were inspected during 2023 - 24 by the MECP. For the 2023 – 24, inspection year, the water system received an inspection rating of 100 per cent.

Ministry of the Environment, Conservation and Parks - Inspection Summary Rating Record (Reporting Year - 2023-24)

DWS Name:	PEMBROKE DRINKING WATER SYSTEM
DWS Number:	220000941
DWS Owner:	CORPORATION OF THE CITY OF PEMBROKE
Municipal Location:	PEMBROKE
Regulation:	O.REG. 170/03
DWS Category:	DW Municipal Residential
Type of Inspection:	Focused
Inspection Date:	Nov-27-2023
Ministry Office:	Ottawa District Office

Maximum Risk Rating: 496

Inspection Module	Non Compliance Risk (X out of Y)
Capacity Assessment	0/30
Certification and Training	0/42
Logbooks	0/14
Operations Manuals	0/14
Reporting & Corrective Actions	0/70
Source	0/0
Treatment Processes	0/214
Water Quality Monitoring	0/112
Overall - Calculated	**0/496**

Inspection Risk Rating:	**0.00%**

Final Inspection Rating:	**100.00%**

5.1 Incidents of Regulatory Non-Compliance

All regulatory non-compliances, identified during the MECP inspection process, will be reported during the management review. The results help Operational Management identify regulatory deficiencies in our drinking-water system.

***There were ZERO Incidents of Regulatory Non-Compliance identified during the MECP Inspection process**.

5.2 Incidents of Adverse Drinking-Water Tests

****During January to December 2023, there were ZERO Adverse Water Quality Incidents.**

5.3 Deviations from Critical Control Point Limits and Response Actions

Through the DWQMS risk assessment review process, five Critical Control Points (CCPs) within Water Production were reviewed and fourteen CCPs were reviewed for Water Distribution Critical Control Limits (CCLs) are identified for each of these CCPs. The CCLs are self-imposed limits and are typically more stringent than MECP Drinking Water Standards or Municipal Drinking Water licence requirements. The identification of CCPs and associated CCLs results in a more rigorous screening of potential risks to water quality and is one benefit of the implementation of the DWQMS.

Deviations from CCLs do occur from time to time and do not necessarily mean that unsafe drinking water was delivered to the consumer. However, CCL deviations do require prompt action from water system operators to remediate the problem and prevent the passage of potentially unsafe water.

****There were no deviations of a Critical Control Limit identified in 2023**.

5.4 Operational Performance

Table 1:

Per Capita Water Consumption for the City of Pembroke Drinking Water System 2023.

Month	2023 m^3 per month	2022 m^3 per month	2023 Monthly Percapita Usage Cubic Meters	2022 Monthly Percapita Usage Cubic Meters	Monthly **Increase** **Decrease** **Per Capita**
Jan	192,323	234,670	11,767	14,258	-2,647
Feb	182,743	214,971	11,204	13,099	-2,014
Mar	199,845	223,346	12,210	13,592	-1,469
April	194,220	202,796	11,879	12,383	-536
May	224,792	206,493	13,677	12,601	1,144
June	270,215	200,873	16,349	12,270	4,334
July	263,242	243,251	15,939	14,763	1,249
August	254,301	243,068	15,413	14,752	702
Sept	262,702	207,316	15,907	12,649	3,462
Oct	250,243	191,577	15,174	11,723	3,667
Nov	227,260	183,651	13,822	11,257	2,726
Dec	226,147	192,138	13,757	11,756	2,126
Population	17,454	17,454	17,454	17,454	
Per Capita	**157.44**	**145.76**	**9.57**	**8.89**	

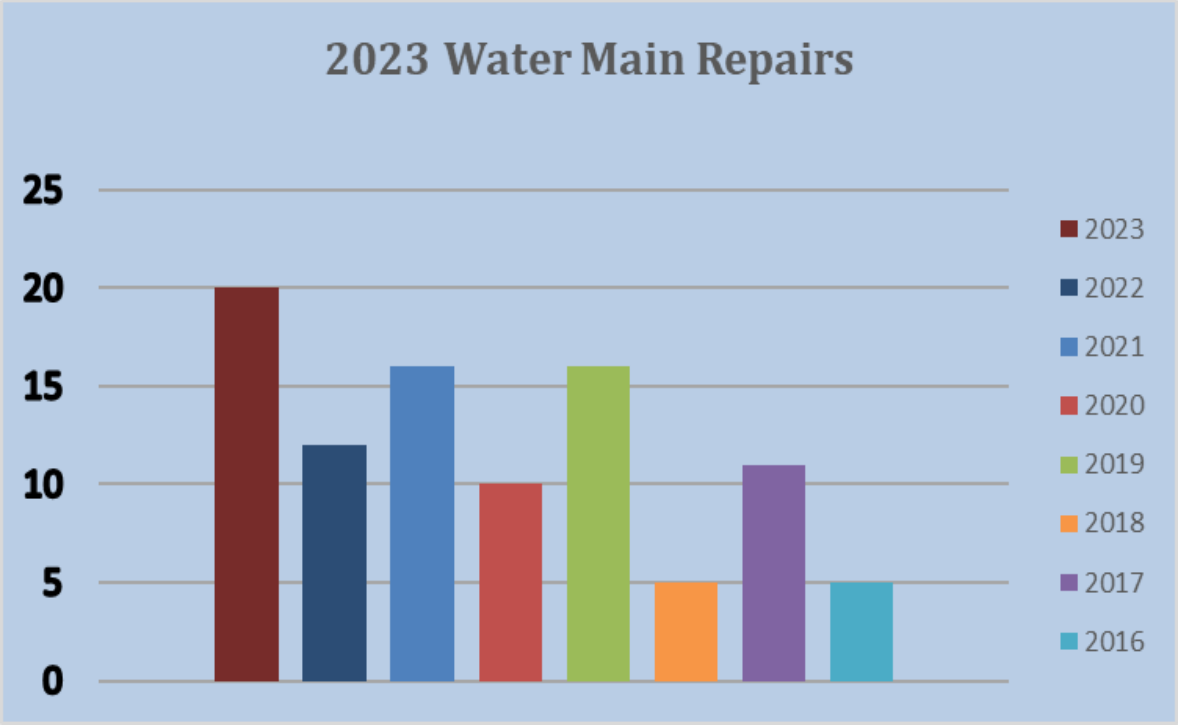
Per Capita Average Residential Water Consumption Increased in 2023 compared to 2022.

****Calculations compiled above are based on data from Statistics Canada, as well as information obtained from the Ontario Ministry of the Environment - Drinking Water Website****

Population Data - There are 16,751 people served by the Pembroke Drinking Water System. This number includes 1,770 residents of Laurentian Valley, serviced by 703 connections to the Pembroke system.

Water Distribution Key Performance Indicators (KPI): The KPI's for Water Distribution give an indication of the effectiveness and the efficiency of the corrective and preventative maintenance programs.

During the 2023 calendar year, there were 20 Water main Repairs in the Distribution System compared to 12 in 2022. All were the result of environmental conditions combined with aging infrastructure (Mains 60-70 years old).

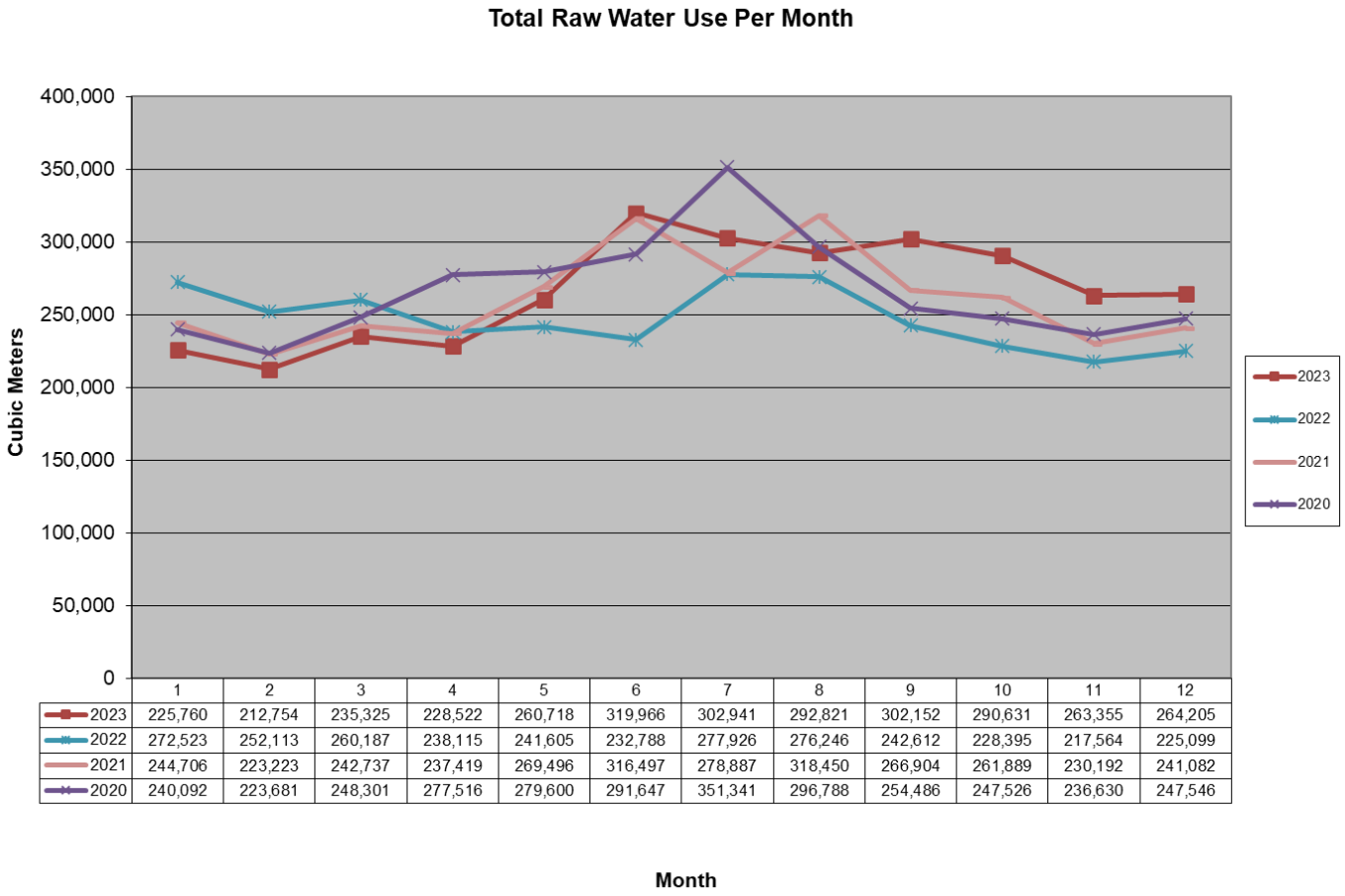


5.5 Raw Water Supply and Drinking Water Quality Trends

As part of the Municipal Drinking Water License (MDWL), the City of Pembroke is required to provide information pertaining to raw water supply and drinking water quality trends. This information should identify key water quality issues that need to be addressed by Operational Management.

The Ottawa River provides a steady and abundant supply of source water for the treatment plants. Raw water quality monitoring for 2023 covered more than 400 test parameters utilizing in house testing and external laboratory testing. Our source water-monitoring program exceeds the MECP requirements. In general, raw water trends were found to show typical levels of variation during 2023. There were no indications of raw water quality that would cause difficulties for the treatment process.

Table 2: Raw Water Taking Pembroke Drinking Water System 2023



	1	2	3	4	5	6	7	8	9	10	11	12
2023	225,760	212,754	235,325	228,522	260,718	319,966	302,941	292,821	302,152	290,631	263,355	264,205
2022	272,523	252,113	260,187	238,115	241,605	232,788	277,926	276,246	242,612	228,395	217,564	225,099
2021	244,706	223,223	242,737	237,419	269,496	316,497	278,887	318,450	266,904	261,889	230,192	241,082
2020	240,092	223,681	248,301	277,516	279,600	291,647	351,341	296,788	254,486	247,526	236,630	247,546

Chart 2: 2023 Raw Water Characteristics

Month	pH	Temperature	Hardness	Alkalinity	Colour	Turbidity	Iron
January	7.15	3.8	24	21	72	3.42	0.120
February	7.21	3.5	24	22	79	4.34	0.150
March	7.21	5.3	24	21	85	4.26	0.128
April	7.12	9.2	19	18	77	3.12	0.138
May	7.10	12.1	20	18	83	3.42	0.133
June	7.12	17.1	21	20	71	2.78	0.101
July	7.04	20.7	22	21	68	2.32	0.096
August	7.08	22.4	24	22	65	2.02	0.092
September	7.13	21	24	23	61	1.84	0.256
October	7.17	16.7	24	23	59	1.91	0.070
November	7.13	10	23	21	64	2.37	0.091
December	7.12	5.4	23	21	69	3.03	0.101

pH – measurement of hydrogen ion activity; indication of acidity; effects efficiency of all chemical reactions in water treatment

Alkalinity – buffering capacity of water; the capacity of water to neutralize itself. Alkalinity stabilizes water at pH levels around 7.

Hardness - The hardness is determined by the number of calcium and magnesium atoms present.

Turbidity - measure of non-transparency of water due to the presence of suspended matter

5.6 Treated Water Quality:

The 2023 performance measures for Water Quality indicate ongoing high quality drinking water. A One Hundred Percent (100%) rating for microbiological quality indicates that the treatment process effectively removed pathogens at all times. Similarly, a 100 per cent rating for chemical water quality indicates that all water quality tests were within the provincial and federal standards for safe drinking water.

Table 4: Summary of Distribution Bacteriological Sampling 2023

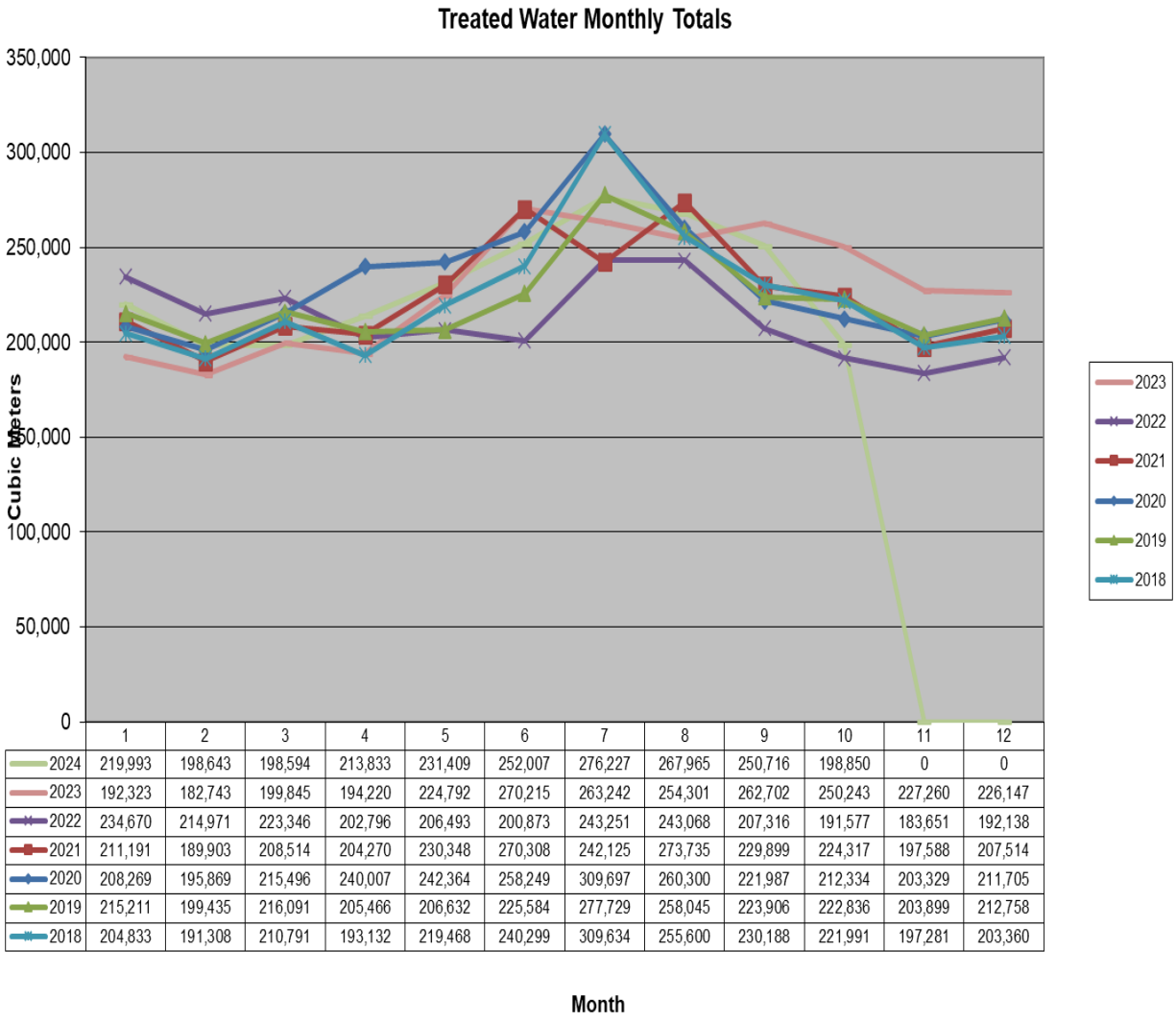
Month	# Of Samples Collected	Minimum Cl2 Residual	Maximum Cl2 Residual	Average Cl2 Residual	Average pH
January	36	0.11	1.34	0.97	7.40
February	36	0.53	1.37	1.00	7.56
March	42	0.35	1.41	1.01	7.50
April	39	0.40	1.29	0.95	7.46
May	47	0.23	1.35	0.90	7.66
June	36	0.43	1.35	0.83	7.65
July	37	0.21	1.21	0.71	7.55
August	41	0.14	1.08	0.52	7.49
September	39	0.09	1.11	0.54	7.54
October	36	0.11	1.04	0.57	7.56
November	47	0.15	1.27	0.75	7.57
December	41	0.27	1.19	0.82	7.43

** **Where the provision of secondary disinfection is required by the Regulation, the drinking-water system's distribution system must be operated such that at all times and at all locations within the distribution system, where there is a daily flow, there is at least a free chlorine residual of 0.05 mg/L at a pH 8.5 or lower.**

Table 4: Treated Water Produced Pembroke Water Purification Plant 2023

Treated Water for 2023								
Month	Total (m^3)	Average (m^3/day)	Max (m^3/day)	Rated Capacity (m^3/day)	% of Capacity	Max Instantaneous Peak Flow (L/s)	Rated Flows (L/s)	Exceedence
January	192,323	6,204	6,922	36,372	19.03	311.5	421	no
February	182,743	6,527	8,159	36,372	22.43	312.8	421	no
March	199,845	6,447	7,100	36,372	19.52	306.5	421	no
April	194,220	6,474	7,482	36,372	20.57	310.4	421	no
May	224,792	7,251	10,804	36,372	29.70	305.7	421	no
June	270,215	9,007	11,967	36,372	32.90	312.9	421	no
July	263,242	8,492	9,833	36,372	27.03	312.0	421	no
August	254,301	8,203	9,636	36,372	26.49	309.0	421	no
September	262,702	8,757	10,264	36,372	28.22	309.3	421	no
October	250,243	8,072	9,472	36,372	26.04	308.0	421	no
November	227,260	7,575	8,429	36,372	23.17	309.6	421	no
December	226,147	7,295	8,267	36,372	22.73	306.4	421	no
Total	**2,748,031**							
Min								
Max			**11,966.80**		**32.90**	**312.9**		
Average		**7525.3**						
Average Daily Flow		**7528.85**	**m^3/day**					

Chart 3: 2023 Treated Water Production



	1	2	3	4	5	6	7	8	9	10	11	12
2024	219,993	198,643	198,594	213,833	231,409	252,007	276,227	267,965	250,716	198,850	0	0
2023	192,323	182,743	199,845	194,220	224,792	270,215	263,242	254,301	262,702	250,243	227,260	226,147
2022	234,670	214,971	223,346	202,796	206,493	200,873	243,251	243,068	207,316	191,577	183,651	192,138
2021	211,191	189,903	208,514	204,270	230,348	270,308	242,125	273,735	229,899	224,317	197,588	207,514
2020	208,269	195,869	215,496	240,007	242,364	258,249	309,697	260,300	221,987	212,334	203,329	211,705
2019	215,211	199,435	216,091	205,466	206,632	225,584	277,729	258,045	223,906	222,836	203,899	212,758
2018	204,833	191,308	210,791	193,132	219,468	240,299	309,634	255,600	230,188	221,991	197,281	203,360

5.7 Summary of Consumer Feedback

Element #12 “Communications” requires the development of a procedure for communications with various levels of the organization and its’ stakeholders. This section of management review will provide a summary of communication received from our customers regarding water quality.

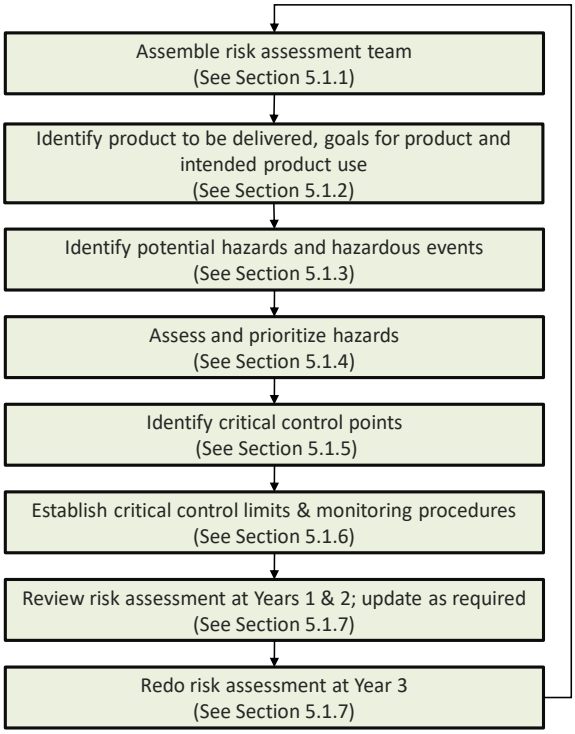
The number of water quality investigations in 2023 was eleven (11) a decease of (6) compared to 2022 (17).

6.0 Management System Performance

6.1 The Risk Assessment Process

Element 7 of the DWQMS requires a risk assessment process be documented that identifies potential hazardous events and associated hazards then assesses and ranks risks related to each hazardous event. Furthermore, control measures must be identified, critical control measures must be identified, and critical control points must be realized. The currency of information and assumptions used in the risk assessment process must be verified annually and a re-assessment of the risks in the drinking-water system must occur every 36 months.

Chart 4: Risk Assessment Process ***Risk Assessment Process – Overview***



The risk assessment matrix contains all drinking-water components and their associated risks. The matrix is maintained by the Supervisor of Drinking Water Treatment.

The risk assessment outcomes from 2023 were critically reviewed during the 2023 risk assessment review in order to make the CCPs/CCLs more effective as an operational tool and capture additional risks deemed important for safe drinking water. No changes to CCPs were identified for Water Production or Water Distribution.

6.2 Results of Audits (Internal and External)

The DWQMS requires each Operating Authority to implement a procedure that ensures internal audits are conducted at least once every 12 months to evaluate conformance to the Standard. The City of Pembroke's Operational Plan specifies that the Drinking Water System be audited internally once every 12 months. An external audit is conducted by an accreditation body in response to an Operating Authority's application for accreditation.

A procedure has been developed that outlines aspects of the internal audit process (i.e., scheduling, audit preparation, conducting the audit and reporting results).

All Internal and Third-Party audit results will be communicated during Management Review.

***Internal Audit*:** May 9th & 10th, 2023

Scope and Objective

All elements were audited over the 2 days. A desktop audit was performed on all elements to determine whether the documented QMS meets the PLAN requirements of the DWQMS. Interviews were also done within the audit group as there were representatives from both water treatment, water collection and admin within the Utilities department. The interviews were to determine if DWQMS requirements have been effectively implemented and/or maintained.

General Audit Findings

The City of Pembroke has a good framework to guide its operations of the drinking water system. Upon review, there were areas that required updates on equipment and corresponding procedures providing the opportunity for continuous improvement on routine procedures.

The following non-conformances or opportunities for improvement were found during the audit process:
Element #2 – policy is not posted on the city website
Element #3 – Last endorsement was 2019; OFI to have new council endorse a current version of the Operational Plan.
Element #7 & Element #8 – most recent documented Risk Assessment OPS-UTL-FRM-004-001 was April 21, 2021.
Element #12 – Implement a recording document to track correspondence.
Element #13 – Updated chemical list required
Element #18 – add real time events to Emergency Response Training
Element #21 – implement a "Continual Improvement Log/Report to track items.

External Audit: As previously discussed in the **Background & Timeline Section** of this report on November 30, 2023. External Auditor, Ryan Bourner (Intertek) completed an Off–Site Re-Accreditation Audit of our DWQMS. The facilities and processes with the operating authority's QMS were objectively evaluated to obtain audit evidence and to determine a) whether the quality management activities and related results conform to DWQMS requirements, and b) if they have been effectively implemented.

As a result of the External Audit one (1) Minor Nonconformity (Listed Below) was identified and addressed within the required timeframe.

Finding:
The Operational Plan does not list a process for reviewing and considering best management practices.

Requirement:
The Operating Authority shall develop a procedure for tracking and measuring continual improvement of its Quality Management System by:
a) reviewing and considering applicable best management practices, including any published by the Ministry of the Environment, Conservation & Parks and available on www.ontario.ca/drinkingwater, at least once every thirty-six months;

Objective Evidence: (Evidence recorded at, if multi-site:)
Neither the Operational Plan (Rev. 5, May 2019) nor the Preventive and Corrective Action Procedure (OPS-UTL-DWS-GEN-PRO-015-001) include a process for the consideration of best management practices.

Issued by: Ryan Bourner

Root Cause (Required in all cases)

Procedure OPS-UTL-GEN-PRO-016-001 did not adequately conform to DWQMS Standard

Correction (if not required, please justify)

Updated procedures OPS-UTL-GEN-PRO-015-001 and OPS-UTL-GEN-PRO-017-001 to document best management practices as well as implemented form **DWQMS Continual Improvement Report (CIR) Spreadsheet: OPS-UTL-GEN-FRM-017-002** to track and measure continual improvement from a variety of sources.
Updated procedure OPS-UTL-GEN-PRO-016-001 to add BMP to the Management Review Meeting Minutes

Corrective action (Required in all cases)

- Added section 5.13 to document OPS-UTL-GEN-PRO-015-001
- Added section 5.3.9 to document OPS-UTL-GEN-PRO-017-001
- Added section "q" to the agenda for Mgt Review Meetings OPS-UTL-GEN-PRO-015-001
- Added BMP to section "D" of the Mgt Review Agenda Checklist OPS-UTL-GEN-FRM-016-001
- Implemented form - DWQMS Continual Improvement Report (CIR) Spreadsheet: OPS-UTL-GEN-FRM-

017-002

Plan for verification of effectiveness (Required in all cases)		
Verification by supervisor and external auditor		
Target date for completion: February 7, 2024	**Signature:** Doug Burton	**Date:** Feb 7, 2024

Minor nonconformity: Acceptance of corrective action plan stated above. Implementation to be verified during the next audit.

Based on the results of this audit the management system remains effectively implemented and maintained and meets the requirements of the standard relative to the scope of certification; therefore, a recommendation for continued certification will be submitted.

6.3 Results of Relevant Emergency Response Testing

Element 18 of the DWQMS is Emergency Management. An emergency is considered a potential situation that may result in the loss of the ability to maintain a service to customers. The DWQMS requires the Operating Authority to maintain a state of emergency preparedness. There are approximately 19 procedures that have been developed to effectively handle emergencies in our drinking water system.

Several methods have been identified to train staff and test emergency procedures including:

- mock emergency testing of procedures related to a specific event, which audits a specific procedure.
- requirement for Operational Staff to review all emergency procedures annually and "sign off".

6.3.1 Emergency Test – Emergency Response Plan for Water Operations

1. The exercise tested the Water Treatment Plant's response to OPS-UTL-DWS-GEN-SOP-014-06.

Appendix A – Page 25 Copy of Emergency Exercise.

6.4 Follow up items from Previous Management Review

Action items from management review meetings are initiated to address deficiencies in the Quality Management System. At each management review, the status of action items from previous management reviews will be reported.

2023 marks the City of Pembroke's Eleventh Management Review.

6.5 Status of Management Action Items identified between Reviews

As previously identified the QMS is a Living Document, some items must be addressed over the long term, but it is expected that the majority of items will be completed by the time of the next management review. Action items are prioritized and tracked to completion.

6.6 Changes that could affect the QMS

Changes that could affect the QMS' allows for discussion of changes that have occurred within the organization or management system that cover the review period.

N/A

6.7 Resources Needed to Maintain the QMS

Resources are broadly defined as those things needed to implement and maintain the management system – they include human, physical work environment and financial resources. As part of the maintenance and continual improvement of the DWQMS, resources required to run the system will be discussed at management review.

These resources support the implementation of the continual improvement process under the DWQMS and involve the dedication of staff to support the Drinking Water System.

Additional resource needs relate to ongoing implementation of operational improvements and staffs "buy in".

The current DWQMS Representative is concurrently responsible for the Supervision of Drinking Water Treatment, a component of the QMS, and at the same time is responsible to "audit and ensure compliance" creating a possible conflict.

The training of additional auditors was last conducted during the fall of 2022, two New Auditors received certification and at the same time refresher training was provided to our current pool of auditors. However, due to attrition we have lost trained auditors, it would be helpful to once again provide auditor training to an expanded cross section of City personnel to increase our pool of auditors.

Increased effort is required to continuously address the needs and priorities within the Drinking Water System by having Supervisors dedicate time and resources for development of required creation, revision of procedures and documents.

6.8 Results of the Infrastructure Review

The annual review of the provision of drinking water infrastructure has two objectives: (I) to identify new drinking water infrastructure needs related to growth and system optimization and (ii) to identify upgrades or renewals of existing infrastructure to optimize operations and maintenance.

In February 2023, the Council approved a Multi-Year Capital Construction Forecast (MYCCF). This MYCCF identified the intentions of the city for infrastructure renewal for the next several years. This is the nineth year that the city has undertaken this exercise and the MYCCF will evolve over time.

The City retained the services of Watson & Associates to prepare a Financial Plan for its drinking water system. The Financial Plan required under O. Reg. 453/07 is for the ten (10) year period from 2019 to 2029 inclusive.

Over the last several years, data has been collected relating to such items as watermain repairs, inoperable valves, etc. As identified in previous Management Review Reports, the city now integrates this data into the MYCCF and either advances or defers major capital expenditures to address inferred infrastructure deficiencies.

The Operations Department began populating an infrastructure management database (Municipal Data Works – MDW) in 2011. This database is used to update the MYCCF and confirm priorities. The Operations Department continues to make extensive use of our Geographical Information System (G.I.S.)

The Operations Department is aware of capital needs for water-related infrastructure renewal. These capital needs must be balanced with the ratepayers “ability to pay” and integrated with other priority infrastructure renewal initiatives (Roads for example).

6.9 Operational Plan Currency, Content and Updates

The DWQMS requires Operating Authorities to document QMS for our drinking water system in the form of an Operational Plan. The Operational Plan is required by the Director’s Direction; therefore, it must be submitted to the MECP for acceptance. The Operational Plan is the document that describes how the City of Pembroke plans to meet the requirements of the DWQMS. It is then the responsibility of the Operating Authority to implement the plan.

The DWQMS Operational Plan has gone through minor revisions during the 2023 calendar year. Revisions and updates made to System Level Procedures & Supporting Documentation have been completed as per schedule or as required in a timely manner and updated controlled hard copies were distributed.

7.0 Summary of Staff Suggestions

Any staff suggestions regarding DWQMS are presented initially to Supervisors; once validated a *Change Request Form* OPS-UTL-DWS-GEN-FRM-002-003 is then filled out to accommodate the necessary change. Staff suggestions continue to be addressed through the DWQMS continual improvement process.

8.0 Next Management Review Meeting

Scheduled for 2024.

Appendix A

CORPORATION OF THE CITY OF PEMBROKE
Department of Operations – Utilities Section

Test of Emergency Response Plan –	
Date of Training:	*June 9, 2023*
Training of Document(s) #:	*OPS-UTL-DWS-GEN-SOP-014-006*
Participants:	*Douglas Burton, Supervisor Drinking Water Treatment; Operators; Tim Ward, Matt Pilon, Michelle Dubois, Shannon Klawitter, Paul Cook*
Absent:	

In accordance with the DWQMS, the City of Pembroke is required to test the performance of the Emergency Response Plan as it specifically relates to the Utilities Section and as documented in the DWQMS.

EXERCISE

On June 20th, 2023, a Chinook Helicopter crashed into the Ottawa River upstream of our Raw Water Intakes.

OUTCOMES

Emergency Response Plan for Water Operations – 6. Raw Water Failure or Contamination.

The following procedure was followed:

Title:	***DWQMS Emergency Response Plan for Water Operations – 6. Raw Water Failure or Contamination***		
Document #	*OPS-UTL-DWS-GEN-SOP-014-06*	**Reviewed by:**	*Douglas Burton*
Status of Document:	*Final*	**Approved by:**	*Brian Lewis*
Issue/ Revision Date:	*November 2021*	**Start of Next Review Period:**	*November 2024 or as required*
Revision #:	*11*	**No. of Pages**	*3*

1.0 PURPOSE

The purpose of this document is to outline the actions required in the case of raw water failure or contamination.

2.0 SCOPE

This procedure applies to Water Treatment Operators

3.0 DEFINITIONS

None

This is a Controlled Document Page 1 of 4

4.0 RESPONSIBILITIES

Director of Operations	Communicate with CAO
Supervisor Drinking Water Treatment	Communicate with upper management and MECP
Chief Operator/OIC.	Ensure closure of the intake to the raw water wells if required

5.0 PROCEDURE – Known Contaminates

1. Isolate the raw water wells.
2. Notify the Supervisor Drinking Water Treatment.
3. If the substance can be deactivated or killed in the case of a contaminating organism with the use of chlorine, chlorinate both raw water wells with 12% hypochlorite solution.
4. Continually monitor by use of grab samples and on line analyzers for chlorine residual.
5. If need be, drain the raw water wells and pump the contaminated water out of the sump pipes.
6. After the contaminant has passed, the appropriate monitoring test have been conducted and come back safe, put both raw water cells back in operation.
7. Record all actions taken in Log Book.

SEWAGE SPILLS:

Normally the MECP or the Renfrew County & District Health Unit will inform you of a spill upstream. However, for more information the Spills Action Center (ENVIRONMENTAL SPILL REPORTING 24 HOUR) 1-800-268-6060 can be contacted. The anticipated arrival time of the spill should be determined and what impact it will have on the drinking water supply.

TRITIUM SPILL (CHALK RIVER):

CONTACT Chalk River Research Laboratories – Environmental Technologies Division
Coordinator of Emergency Services at **1 (613) 584-8811**

If it is a Tritium spill, Chalk River Research Laboratories will set up a sampling program. Also Health and Welfare Canada (Ottawa) will be involved with the emergency sampling program

OTHER CONTAMINANTS

The Director of Operations will notify the Chief Administrative Officer or Alternate to inform the local Media to announce an immediate water restriction if required.

Relay information on when the spill occurred and how long the contaminant will take to get to the plant

1. Plant operators will continue to fill clear well, Quarry Road Reservoir and Elevated Tower before the spill arrives.
2. Isolate both intakes and lockout both low lift pumps when the spill is estimated to arrive
3. If the substance can be deactivated or killed in the case of a contaminating organism with the use of chlorine, chlorinate both raw water wells with 12% hypochlorite solution.
4. Continually monitor by use of grab samples and on line analyzers for chlorine residual.
5. If need be, drain the raw water wells and pump the contaminated water out of the sump pipes.
6. As an added precaution, after the contaminant has passed, the appropriate monitoring test have been conducted and come back safe, put both raw water cells back in operation.
7. After the contaminant has passed, the appropriate monitoring test have been conducted and come back safe, put both raw water cells back in operation.
8. Record all actions taken in Log Book.

6.0 ASSOCIATED DOCUMENTS

None

7.0 REVISION HISTORY

Revision No.:	11
Date of Last Revision:	November 2021
Last Approval Date:	November 2021
Reason for Change(s):	Document Review
Summary of Change(s):	Change Manager of Operations to Director of Operations

				[illegible]
				170 l/sec for the night and master flow at 140 L/sec.
JUN 20 2023			SK	S.Klawitter duty operator/standby D.Burton ORO
			SK	T.Ward, M.Pilon, M.Dubois, P.Cook & ~~C.Cousins~~ SL maintenance operators
			SK	Hours of work 7:30am - 3:30pm
			SK	Increased CR fill to 94% from 90%. Increased master
				flow rate to 150 L/sec from 140 L/se and override
				rate to 180 L/s. from 170 L/s
	0.25 hrs OT Banked	8:04	SK	Called at 2:23AM by Pembroke Fire Department about
				helicopter going down in Petawawa and the possibility
				of Petawawa needing water. Called D.Burton to inform
				him of the situation.
		8:05	SK	Increased Acid pump time to 8.40min from 8.35min batch clear.
		8:41	SK	Completed daily walk around checklist
		8:42	SK	M.Dubois placed interface turbidity meters #1 & #2 in CAL to adjust