



City of Brockville

General Committee

Agenda

4:30 PM - Tuesday, March 21, 2023

City Hall, Council Chambers

THIS AGENDA HAS BEEN UPDATED TO INCLUDE STAFF REPORT 2023-43

Page

Land Acknowledgement Statement

Chair's Remarks

Disclosure of Interest

Delegations and Presentations

Nil.

Correspondence and Communications

Nil.

Reports from Boards and Committees

Nil.

Staff Reports

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1. 2023-30

Re-locate the designated boat trailer parking to 101 Water Street W.
(formerly the E.I.T property)

THAT the designated boat trailer parking area be moved from the gravel portion of the Home street lot, lower Home street lot and the Henry street lot to 101 Water Street W; and

THAT the Parking by-law 119-89 be amended accordingly.

2023-30

7 - 13

2. 2023-37

Tourism Delivery Options for City of Brockville

THAT Council provide direction to staff on which option they wish to move forward on.

2023-37

General Committee Agenda
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- 14 - 15 3. 2023-40
Purchase of Aluminum Sulphate - WPCC

THAT Council approve the purchase of Aluminum Sulphate coagulant (Alum) chemical from Kemira Water Solutions Inc. in Varennes Quebec.
[2023-40](#)
- 16 - 17 4. 2023-41
Sole Source Procurement of Dried Biosolids Disposal - WPCC

THAT Council approve the services of GFL Environmental (Formerly THF Limited DBA), for the disposal of the dried biosolids produced at the City's Water Pollution Control Centre.
[2023-41](#)
- 18 - 19 5. 2023-42
Sole Source Purchase of Flocculent Polymer - WPCC

THAT Council approve the sole source purchase from SNF Canada for the purchases of flocculent chemical polymer.
[2023-42](#)
- 20 - 21 6. 2023-43
Sole Source Procurement Chlorine Gas - WTP

THAT Council approve the sole source purchase from Brenntag Canada for chlorine gas.
[2023-43](#)
- 22 - 24 7. 2023-38
Next Generation 9-1-1 Transfer Payment Agreements

THAT the City of Brockville enter into a Transfer Payment Agreement with His Majesty the King in right of Ontario as represented by the Solicitor General in regards to the Brockville Fire Department's NG9-1-1 emergency response system; and

THAT the City of Brockville enter into a Transfer Payment Agreement with His Majesty the King in right of Ontario as represented by the Solicitor General in regards to the Brockville Police Services NG9-1-1 emergency response system; and

THAT Council authorize and direct the Mayor and City Clerk to execute all necessary documents to give effect to the Transfer Payment Agreements.

[2023-38](#)

Information Items

All matters listed as Information Items are considered to be routine and will be enacted by one motion. Should a Committee member wish an alternative action from the proposed recommendation, they shall request that this matter be moved to "separate" the item.

THAT the following Information Items be received:

- | | | |
|-----------|----|---|
| 25 - 33 | 1. | Water Systems Division Quarterly Report
October - December 2022
<u>Oct. - Dec. 2022 Quarterly Water Systems Report</u> |
| 34 - 91 | 2. | 2023-44
2022 Annual Water Quality Report Brockville Drinking Water System
<u>2023-44</u>
<u>2022 Annual Water Quality Report</u> |
| 92 - 141 | 3. | 2023-45
2022 Annual Report Water Pollution Control Centre
<u>2023-45</u>
<u>2022 WPCC Annual Report</u> |
| 142 - 143 | 4. | 2023-46
2023 Municipal Hazardous and Special Products Waste Event
<u>2023-46</u> |
| 144 - 145 | 5. | 2023-29
2022 Municipal Accommodation Tax - Year End Review
<u>2023-29</u> |
| 146 - 151 | 6. | 2023-39
2022 Council Remuneration and Expenses
<u>2023-39</u>
<u>SR2023-39 - Mayor & Council Honorariums & Expenses</u>
<u>SR2023-39 - Committees & Boards Honorariums & Expenses</u> |

New Business from Committee Members

Nil.

Committee Consent Agenda

THAT the following items as recommended by the General Committee be placed on the Consent Agenda:

Media Question Period

Adjournment

THAT the General Committee adjourn its meeting until the next regular meeting scheduled for April 18, 2023.

Minutes from City Boards and Committees

152 - 154 Accessibility Advisory Committee

[Municipal Accessibility Advisory Committee - 24 Jan 2023 - Minutes](#)

Airport Commission

Arena Advisory Board

Heritage Brockville

Library Board

Museum Board

Railway Tunnel Committee

155 - 158 Tourism Advisory Committee

[Tourism Advisory Committee - 28 Feb 2023 - Minutes](#)



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Alex Epp, Supervisor of Customer Service/Tax Collector Lynda Ferguson, Director of Finance & IT Services
Report Number:	2023-30
Subject:	Re-locate the designated boat trailer parking to 101 Water Street W. (formerly the E.I.T property)

Recommendation

THAT the designated boat trailer parking area be moved from the gravel portion of the Home street lot, lower Home street lot and the Henry street lot to 101 Water Street W; and

THAT the Parking by-law 119-89 be amended accordingly.

Background

Downtown parking is an ongoing issue for the City. The lack of space is exacerbated in the summer season when boaters need extra space in portions of the downtown lots for their trailers. Currently the designated boat trailer parking is located at the gravel and lower parts of the Home street lot as well as the Henry street lot. While the City welcomes the boaters, a more efficient use of space would be to move the designated boat trailer parking to the 101 Water St. W. lot, which is a large gravel space adjacent to Hardy park, usually reserved for event parking. This parking availability would be on a paid basis through permits as well as the Henry St. pay and display machine due to its close proximity to 101 Water St. W. This change is acceptable under the current lease agreement between the City and the owner of the lot, 6108555 Canada Limited.

Analysis

The re-location of the boat trailer parking would provide 20 new spots for vehicles downtown, and 101 Water St. W. would provide double the amount of space for boat trailers than is currently available. This would also allow for bigger sized trailers in general. This move is beneficial to both vehicular downtown visitors as well as boaters in that it creates more space for both, without the need for costly changes or additions to infrastructure. Public Works has also retained a supply of concrete parking curbs that could be used to create a new layout in the 101 Water St. W. lot as it needs to remain gravel.

Financial Implications

As per the parking lease agreement between the City and 6108555 Canada Limited, revenues from parking are to be split 50/50 between the lessor and lessee. Any revenue generated from boat trailer parking at 101 Water St. W. would therefore be shared equally between the City and 6108555 Canada Limited. The addition of new spots in Henry St. and Home St. for regular vehicles would create additional revenue to offset the revenue shared for boat trailer parking.

Moving the boat trailer signs from Home Street to 101 Water St. W. would be completed by public works staff and the purchase of 'Permit Parking Only' signs for 101 Water St. W. would be \$441 paid for through general parking maintenance.

Policy Alignment

Parking By-Law 119-89 will need to be updated for these changes.

Conclusion

Staff concludes that it is a more efficient use of space to re-locate the boat-trailer parking from Henry St. and lower Home St. to 101 Water St. W. which will create more parking space for both downtown visitors and boaters. Both parties would benefit in a meaningful way from this change. Staff recommends that by-law 119-89 be amended to reflect this change.

Approved by:	Status:
Alex Epp, Supervisor of Customer Service/Tax Collector	Approved - 15 Mar 2023
Lynda Ferguson, Director of Finance & IT Services	Approved - 15 Mar 2023
Sandra MacDonald, City Manager/City Clerk	Pending



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Anne Shropshire, Manager, Cultural Services Sandra MacDonald, City Manager/City Clerk
Report Number:	2023-37
Subject:	Tourism Delivery Options for City of Brockville

Recommendation

THAT Council provide direction to staff on which option they wish to move forward on.

Background

On June 19, 2020 the City of Brockville issued two RFPs for: (1) Tourism Information and Stakeholder Services and (2) Tourism Marketing and Promotion Services. Two submissions were received for each of these RFPs and following an evaluation, interviews, and written responses to the interview questions the panel recommended awarding the contracts to the Aquatarium at Tall Ships Landing (a partnership of agencies).

Having renewed the original one-year contract (2021) with the additional two one year renewals (2022 & 2023), the current tourism contract will end on December 31, 2023.

Since the original RFP process was implemented many internal changes have been made.

In 2018 the City of Brockville began collecting the Municipal Accommodation Tax (MAT), allowing for greater investment in tourism initiatives for the city. In late 2020 Council created the Cultural Services Department and hired a Manager of Cultural Services in March 2022. This has provided more resources and dedicated staff to oversee the tourism contract, providing experience and expertise and working with both the Destination Marketing Organization (DMO) and other City Departments to ensure commitments are fulfilled. The Tourism Advisory Committee was also created in the Fall of 2022.

Historically, Council has contracted the delivery of tourism to a third party. Tourism, pre-2020 is not the same as tourism 2023. The landscape has changed dramatically as the province continues to recover from Covid. Tourism businesses require different types of support, visitors' travel patterns have changed and many organizations have had to make a shift in how they provide services.

At the February 28, 2023 Council meeting, Council members directed staff to explore options for tourism delivery and report back to the General Committee no later than March 21, 2023.

Staff are providing a high level review of three options for tourism delivery going forward:

1. Third-party delivery;
2. Bring tourism in-house and create a Municipal Services Corporation to receive 50% MAT;
3. Regional collaboration.

All options presented assume the same amount of funding as currently dispersed by Council (tax levy and 50% MAT).

MAT and how the City currently funds tourism:

Funding for tourism in Brockville come from two sources: Tax levy (\$250,638) and the MAT (\$536,388). As per legislation, the City can use 50% of the MAT for tourism related projects while the remaining 50% must go to an 'eligible tourism entity'[\[1\]](#) (O. Reg. 435-17) or Destination Marketing Organization (DMO)) for marketing and promotional purposes.

50% of the MAT goes to the Aquatarium as the Destination Marketing Organization (DMO) which is then contracted out to a third party for marketing and promotion. Funds from the tax levy also go Aquatarium as DMO to fund visitor and stakeholder services. During budget, Council elects to disperse the City's portion of the MAT to fund operations at the Aquatarium.

Third-party delivery:

Continuing with third-party delivery will likely see the same funding and service arrangement as outlined above.

Third-party delivery only requires the City to provide funding. Activities, performance metrics and outcomes can be established in the contract but are limited in directing the day-to-day operations.

In-house/Establish a Municipal Services Corporation:

Tourism would be brought in-house under the Cultural Services Department and funded through the tax levy at the current amount. Funds from the tax levy would employ staff to deliver visitor services, stakeholder engagement and oversee product development.

A Municipal Services Corporation (<https://www.ontario.ca/laws/regulation/060599>) is a non-share capital corporation with the municipality as the sole shareholder. Its

purpose is to provide a system, service or entity that the municipality itself could provide. As the sole shareholder, the municipality is able to establish policy to be followed by the Board of Directors. A Municipal Services Corporation (MSC) would be eligible to receive the 50% MAT for marketing and promotion. In turn, the MSC could contract marketing and promotion to the Cultural Services Department, ultimately bringing all of tourism delivery within the City, delivered by City staff, accountable directly to Council.

Regional Collaboration:

A regional collaboration could see the municipality provide some or all of the tax levy funding as well as 50% MAT for marketing and promotion to a regional partner to deliver tourism at a regional level. The municipality may wish to bring visitor services and stakeholder engagement in-house and have City staff work directly with the regional partner in product development, marketing and promotion.

[1] "eligible tourism entity" means a non-profit entity whose mandate includes the promotion of tourism in Ontario or in a municipality

Analysis

OPTION ONE - Third-party Delivery

Summary:

Third-party delivery of tourism is the traditional method of tourism delivery within the City. Prior to 2002, tourism was managed through the Economic Development Office. Beginning in 2002, the City contracted tourism delivery to the Brockville and District Chamber of Commerce. Once the City began collecting the Municipal Accommodation Tax (MAT) in 2018, the value of the contract increased (50% of the MAT collected could not remain with the City as it had to be given to an 'eligible tourism entity'[1] (O. Reg. 435-17) or Destination Marketing Organization DMO). The City developed an RFP for Visitor and Stakeholder Information Services and Marketing and Promotion in 2020. A successful candidate (Aquarium) was chosen from the two submissions received.

Third-party delivery only requires the City to provide funding. The city also provides in-kind services utilized by the DMO. This option also takes employment costs and liabilities out from the City and places them with an external organization. Control of the activities, performance metrics, outcomes and business planning are determined by the third-party and presented to Council on a quarterly basis.

Benefits:

- Familiar approach to tourism delivery; Council knows what it is going to get
- Less work for staff; not involved in day-to-day operations
- Provides clear roles and responsibilities for DMO and City
- Separates the City from employment costs and liabilities

- 50% MAT funds can be disbursed to eligible tourism entity for marketing and promotion

Considerations:

- There are not many not-for-profits groups that meet the criteria to be eligible to receive 50% MAT funding for marketing as laid out in the legislation
- Limited input and direction from Council and staff; issues identified with current contract could be refined in the development of a new RFP and contract
- Perceived conflict of interest if DMO is also a main tourist attraction
- Though not involved in day-to-day operations, there is still a large number of staff hours provided in-kind to the third-party contractor (preparing municipally owned space for tourism staff, coordination/monitoring of contract)

Financial Implications:

Assumes current amount provided in budget: \$250,638 + CPI annually and 50% MAT (\$268,194 for use in 2023)

Next Steps:

- Staff consult with DMO and stakeholders to get feedback regarding current contract
- Develop new RFP for approval

Municipalities:

- Carleton Place (no MAT)
 - Smiths Falls (hybrid of visitor services to Chamber of Commerce, product development, marketing and promotion in-house) (no MAT)
 - Gananoque
-

OPTION TWO - Bring Tourism in-house/Create a Municipal Services Corporation (MSC)**Summary:**

As more and more municipalities are collecting the Municipal Accommodation Tax (MAT), they are developing new and innovative ways to deliver tourism. Because 50% of the MAT collected must be given to an eligible tourism entity, many municipalities have established a Municipal Services Corporation (MSC) (O. Reg. 599/06) to deliver tourism entirely, or use 50% to fund product development and festivals and events, or the municipality has established an MOU with the Municipal Services Corporation to have the municipality deliver tourism. It should be noted that most municipalities fund tourism 100% through the MAT.

Brockville Council currently funds tourism through a hybrid of the MAT and tax levy. The option proposed would bring tourism in-house. Product development, visitor and stakeholder services could continue to be delivered by the City through the tax levy.

Council would establish a Municipal Services Corporation to direct 50% MAT funds for the provision of marketing and promotion to be delivered by the City on their behalf through an MOU. This arrangement would ultimately bring all of tourism delivery within the City, delivered by City staff, accountable directly to Council.

Benefits:

- Bring visitor and stakeholder services, marketing and promotion ‘under one roof’
- Tourism will be handled directly by City staff through an agreement with the Municipal Services Corporation
- As sole shareholder in the Corporation, Council will establish policies for the Corporation
- Council is responsible for appointing the Board of Directors while still allowing for representation from stakeholders
- Expertise within Cultural Services Department to provide guidance and leadership
- More accountability for funds spent, process taken and results
- Tourism funds already flow through Cultural Services Department
- In-house model could play a leading role in City-sponsored events and tourism related initiatives such as Tall Ships Festival and River of Lights as well as way-finding signage, allowing current staff to focus on primary roles and responsibilities
- Development of a tourism management strategy in line with Council’s strategic vision as well as collaboration with city departments and advisory committees (Brock Trail, Tunnel, Tourism Advisory Committee, Heritage Committee)
- A vision and strategy for tourism beyond a 1 to 3-year contract
- In future, Council may consider using 100% of MAT to fund tourism, removing it from the tax levy, completely
- A Municipal Services Corporation could apply for grant funding without relying on third-party DMO
- Websites, social media and physical assets are already owned by the City

Considerations:

- Timeline - will need to establish a MSC which will take approximately 6 months
- Requires establishing a new division within Cultural Services Department
- Requires hiring additional staff (funded through already established tourism budget and/or MAT)

Financial Implications:

Assumes current amount provided in budget: \$250,638 annually and 50% MAT going forward.

- Additional one-time cost to establish MSC estimated at \$20,000
- Small investment to upgrade space for visitor centre

Next Steps:

- Staff present a business case to Council (to include staff structure, budget, etc.)
- Begin incorporation process
- Stakeholder consultations
- Establish Terms of Reference and select initial board members

Municipalities:

Vaughan

- <https://pub-vaughan.escribemeetings.com/filestream.ashx?DocumentId=21962>
- https://www.vaughan.ca/business/Tourism_Art/tourism/Pages/tourismvaughancorp.aspx

Cornwall

- <https://cornwalltourism.com/>
- <https://cornwalltourism.com/tdf/>

Prince Edward County

- <https://haveyoursay.thecounty.ca/destination-marketing-organization>
 - <https://www.visitthecounty.com/>
-

OPTION THREE - Regional Collaboration**Summary:**

Visitors do not see political boundaries – a collaborative tourism entity could provide more opportunities to develop product beyond Brockville’s borders. Pooling regional tourism resources may be the way of the future as a more formal partnership would be complementary for all municipalities.

Currently, there are two regional resources that the City could partner with; RTO 9 and the Counties which is managing tourism under its Economic Development Department. Since all RTOs are funded provincially, their futures are dependent on the government in power (for example, RTO 9’s budget was cut by \$300,000 in 2019). With the change in funding, RTO 9 has shifted its focus to more product development encouraging partnerships across the region. There are also no other municipalities in the region that provide funds to the RTO for tourism delivery.

The Counties completed a regional tourism strategy in 2022 and have approved two actions (Branding and Experience/Trail Development). Should the City wish to do a collaborative partnership with the counties, direction and scope from City Council would need to occur in 2023 for staff to enter into formal discussions.

Benefits:

- Pooling marketing funds could create larger campaigns with a broader reach
- Promoting a ‘hub and spoke’ model, could entice more visitors to stay longer

Considerations:

- Counties have not established a Tourism department for 2023
- RTOs are funded provincially and are their existence relies on the government in power
- May be a harder sell for tourism stakeholders, particularly with MAT funding (why is that area being promoted and not me)
- Would need complete buy-in from Counties official with a well written MOU listing responsibilities and expectations (who contributes what)
- Brockville may not get the financial benefits as tourism offerings are not balanced equally across the region
- Counties can't collect MAT therefore a larger amount may have to be used from their tax levy – which may not have support
- City may still wish to fund a tourism position(s)

Financial Implications:

Assumes current amount provided in budget: \$250,638 annually and 50% MAT going forward

Next Steps:

- Begin formal discussions, assess interest

Municipalities/Organizations:

RTO 9

- <https://rto9.ca/>

United Counties of Leeds and Grenville

https://invest.leedsgrenville.com/en/resourcesGeneral/Publications/Leeds-Grenville-Regional-Tourism-Destination-Strategy_FINAL---July-6-2022.pdf

Conclusion

All above options provide benefits and considerations. Staff are requesting that Council review the tourism options presented and provide direction to staff on which option they wish to move forward on.

Approved by:

Anne Shropshire, Manager, Cultural Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Pending



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services Brandon Goddard, WPCC Supervisor
Report Number:	2023-40
Subject:	Purchase of Aluminum Sulphate - WPCC

Recommendation

THAT Council approve the purchase of Aluminum Sulphate coagulant (Alum) chemical from Kemira Water Solutions Inc. in Varennes Quebec.

Background

The Brockville wastewater treatment facility is a traditional, activated sludge, secondary treatment process. This process uses clarifier tanks to gravity assist the settling of solids out of the processed wastewater. Also, aerated biological reactor tanks are used to cultivate biological activity to consume nutrient pollutants from the wastewater. Following the biological reaction section of the process, coagulant (Alum) is added to assist in the precipitation settling of finer particulate. This function is a critical step in the removal of dissolved phase phosphorus, a primary nutrient pollutant to the effluent receiving water. Phosphorus is a principal wastewater nutrient pollutant for which the Ministry of Environment, Conservation and Parks dictates specific target and compliance metrics for removal in the facility's Environmental Compliance Approval (ECA).

The coagulant chemical the Brockville WPCC was designed for is liquid Aluminum Sulfate ($\text{Al}_2(\text{SO}_4)_3$) which carries the trade name "Alum" in the wastewater industry. The WPCC utilizes between 800 – 1,100 kg of liquid Alum per day based on the process characteristics and operational needs.

Analysis

The supply of Alum coagulant in the eastern Ontario region is available from a very small number of industrial chemical vendors and manufacturers. In the past, the WPCC has been supplied with Alum from Kemira in Varennes, Quebec and Sodrox Chemicals Ltd in Guelph, Ontario. Sodrox purchases Alum from Kemira and was not confident in better their price. After requesting a price, Sodrox did not return with one. A third vendor, Chemtrade was approached to provide a competitive price for consideration but a bid was not received. As such, WPCC staff were only able to acquire one cost for comparison shown below:

1. Kemira Water Solutions Inc.....\$349.00/tonne
2. SODROX Chemicals Ltd..... (No Bid)
3. Chemtrade..... (No bid)

Financial Implications

The 2023 wastewater operating was approved with a budget estimate of \$160,000 for the purchase of Aluminum Sulfate coagulant, to allow for quarterly price increases as seen in the past due to market volatility.

Based on the historical consumption and demand at the plant, it is estimated that the total cost for the year will be within the approved budget.

There are sufficient funds in account 04-5-331750-2014 to accommodate the purchase.

Policy Alignment

This report is in accordance with the City's Procurement and Budget Control policies.

Conclusion

It is recommended that Council approve the purchase of Aluminum Sulphate coagulant (Alum) chemical from Kemira.

Approved by:

Peter Raabe, Director of Engineering & Infrastructure Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Approved - 16 Mar 2023



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services Brandon Goddard, WPCC Supervisor
Report Number:	2023-41
Subject:	Sole Source Procurement of Dried Biosolids Disposal - WPCC

Recommendation

THAT Council approve the services of GFL Environmental (Formerly THF Limited DBA), for the disposal of the dried biosolids produced at the City's Water Pollution Control Centre.

Background

The dewatering process at the WPCC is an important process that separates water from the digested sludge resulting in a dry soil-like product that can be disposed of in a much more cost-effective way than disposing of the digested sludge in its liquid form. The resulting dried biosolids product is referred to in the wastewater industry as "cake".

The WPCC has utilized GFL Environmental since 2005 for biosolids removal for land application and then transitioned to biosolids recycling in 2013. The current biosolids recycling services through THF Limited includes pickup and delivery of the 21-yard roll-off bin from the WPCC every other day, 365 days per year as needed. The recycling process utilizes the nutrient rich biosolids from the WPCC in a process that makes it suitable as an agricultural product. As a result, the biosolids produced by the City of Brockville are not disposed of as an end-of-life product in landfill waste but in fact utilized for its nutrient value in agriculture applications.

Additionally, the Brockville WPCC participates in the federally regulated National Pollutant Release Inventory (NPRI) where the City's waste biosolid products must be accounted for as either land applied, disposed in a landfill, or recycled.

For reference, according to the 2021 NPRI report submitted by the City of Brockville; 100% of the 1,713,790 kg of waste biosolid product was recycled with GFL Environmental as opposed to being land applied or disposed of in landfills.

Analysis

The City of Brockville no longer maintains means of land applying biosolids products. Other than the current recycling utilization, the biosolids can only be disposed of in a landfill as waste.

Currently, the WPCC utilizes THF Limited at a projected cost of \$112.30 per metric ton including pickup of the product. In keeping with the City's commitment to green initiatives, recycling the biosolids at GFL Environmental facility is preferred over disposing in a landfill.

Financial Implications

The 2023 wastewater operating budget was approved with a budget estimate of \$192,000 for the removal and disposal of waste cake from the WPCC.

Based on the historical production of cake at the plant, it is estimated that the total cost for the year will be within the approved budget.

There are sufficient funds in account 04-5-331750-3010 to accommodate the purchase.

Policy Alignment

This report is in accordance with the City's Procurement and Budget Control policies.

Conclusion

It is recommended that Council approve contracting the services of GFL Environmental, for the disposal of the dried biosolids produced at the City's Water Pollution Control Centre.

Approved by:

Peter Raabe, Director of Engineering &
Infrastructure Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Approved - 16 Mar 2023



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services Brandon Goddard, WPCC Supervisor
Report Number:	2023-42
Subject:	Sole Source Purchase of Flocculent Polymer - WPCC

Recommendation

THAT Council approve the sole source purchase from SNF Canada for the purchases of flocculent chemical polymer.

Background

The dewatering process at the WPCC is an important process that separates water from the digested sludge resulting in a dry soil-like product that can be disposed of in a much more cost-effective way than disposing of the digested sludge in its liquid form.

The WPCC dewatering process utilizes a decanting centrifuge to separate the water from the solids material and requires a flocculent polymer chemical to be injected at a specific rate and dose prior to the centrifuge. The flocculent polymer in simplified terms initiates the separation of the liquid sludge from the liquid water in a solution. Each facility in every municipality has subtle differences in the physical and chemical make-up of sludge products. In Brockville, the process equipment was designed around the use of the HB 4484 polymer from SNF because initial testing indicated the polymer's performance with regards to the desired sludge flocculent characteristic results were relative to the chemical and physical makeup of the digested sludge material produced at the WPCC. Currently the SNF Polymer works very well, often achieving cake product which exceeds the target cake dryness (water content) with exceptional process by-product characteristics.

Analysis

In the past, competitors of SNF Canada have conducted testing at the Brockville WPCC in an attempt to replicate or improve on the performance of the SNF polymer, however, they have failed to provide evidence of even equivalent performance. Additionally, process and polymer injection equipment currently in service at the WPCC may need to be modified to accommodate an alternative polymer product if an equivalent was available.

Financial Implications

The 2023 wastewater operating budget was approved with an estimate of \$75,000 for the purchase of flocculent chemical polymer.

Based on the historical consumption and demand at the plant, it is estimated that the total cost for the year will be within the approved budget.

There are sufficient funds in account 04-5-331750-2014 to accommodate the purchase.

Policy Alignment

This report is in accordance with the City's Procurement and Budget Control policies.

Conclusion

It is recommended that Council approve the sole source purchase with SNF Canada for the purchases of flocculent chemical polymer used in the dewatering process at the Brockville Water Pollution Control Centre.

Approved by:

Peter Raabe, Director of Engineering &
Infrastructure Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Pending



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services
Report Number:	2023-43
Subject:	Sole Source Procurement Chlorine Gas - WTP

Recommendation

THAT Council approve the sole source purchase from Brenntag Canada for chlorine gas.

Background

The chlorination processes of the Water Treatment Plant (WTP) are regulated to ensure proper disinfection or inactivation of virus, bacteria, protozoa, and oocysts in the City's drinking water. Chlorination is also used to provide a suitable free chlorine residual throughout the water distribution network, ensuring that a safe supply of water is delivered to each home and business.

Chlorine gas is considered an essential chemical required by the City to remain compliant with the WTP's Drinking Water License.

Analysis

Brenntag is a global market leader in the supply and distribution of industrial chemicals. In Canada they are the largest and nearest regional distributor of chlorine gas and HFSA. At the City's WTP, chlorine gas inventories are maintained at a 5 to 6 week capacity. Chlorine gas production is sensitive to supply line and logistical complications. As a large supplier of industrial chemicals, Brenntag has the ability store large quantities chlorine gas and have their own transportation fleet specifically trained to transport chemicals of this nature. This ensures the City has an uninterrupted supply of these essential chemicals even during emergency situations.

Other companies are able to provide these chemicals, but these companies are general industrial product suppliers of a wide range of products and their supplier of chemicals is Brenntag. These third-party companies do not specialize in chemicals; they do not operate their own transportation fleet and they do not have the ability to store large quantities of chemicals. This is important in maintaining an uninterrupted supply of essential chemicals.

Financial Implications

The budget to purchase these treatment chemicals and others used at the WTP was approved through the 2023 budget process where \$187,500 was allocated for chemical purchases.

At the time of 2023 budget preparation, the price of chlorine gas was \$6.6015/kg (including net HST) for an estimated annual cost of \$109,000.

Historical consumption suggests that the 2023 supply requirements of chlorine gas would be approximately 16,500 kg. The current price of the chlorine gas from Brenntag Canada is \$7.4257/kg (including net HST) for a projected total annual cost of \$122,500.

In preparing the 2023, staff took into consideration additional cost increases and budgeted accordingly. There are currently sufficient funds in the chemical budget to accommodate the purchases, but staff will monitor the budget.

Policy Alignment

This report is in accordance with the City's Procurement and Budget Control policies.

Conclusion

It is recommended that Council approve the sole source purchase with Brenntag Canada for chlorine gas, used in treatment processes at the Brockville Water Treatment Plant.

Approved by:	Status:
Peter Raabe, Director of Engineering & Infrastructure Services	Approved - 16 Mar 2023
Sandra MacDonald, City Manager/City Clerk	Pending



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Lynda Ferguson, Director of Finance & IT Services Chris Paul, Director of Fire & Partner Services Mark Noonan, Police Chief
Report Number:	2023-38
Subject:	Next Generation 9-1-1 Transfer Payment Agreements

Recommendation

THAT the City of Brockville enter into a Transfer Payment Agreement with His Majesty the King in right of Ontario as represented by the Solicitor General in regards to the Brockville Fire Department's NG9-1-1 emergency response system; and

THAT the City of Brockville enter into a Transfer Payment Agreement with His Majesty the King in right of Ontario as represented by the Solicitor General in regards to the Brockville Police Services NG9-1-1 emergency response system; and

THAT Council authorize and direct the Mayor and City Clerk to execute all necessary documents to give effect to the Transfer Payment Agreements.

Background

The existing 9-1-1 system has been in place for more than 30 years and has reached its end of life. The Canadian Radio-television and Telecommunications Commission (CRTC) has mandated the emergency telecommunications networks and 9-1-1 call centres, also referred to as Public Safety Answering Points (PSAPs), must transition to a new 9-1-1 communications system, known as Next Generation 9-1-1 (NG9-1-1), by March 4, 2025. Our current emergency telecommunications systems over 30 years old and use older analog technology. The new 9-1-1 communication systems are digital.

Once fully implemented, the new NG9-1-1 system will make it easier to provide additional details about emergency situations, such as video from the scene of an accident and ability to text 9-1-1 when requesting immediate help from police, fire or ambulance services. It will also give emergency operators and dispatchers the ability to identify the location of a call using Global Positioning System (GPS) coordinates, resulting in a safer, faster, and more informed emergency response.

To support PSAPs with their transition to NG9-1-1, the Ontario government is investing \$208 million over three years to enhance the province's 9-1-1 emergency response

system. A call for applications for year funding in 2022-23 was publicly announced on November 28, 2022 and closed on January 10, 2023.

This Transfer Payment Agreement is prepared under this program to support our PSAP to meet the March 4, 2025 federally mandated deadline with eligible expenditures to implement technology and infrastructure upgrades to support the transition to NG9-1-1.

Analysis

The funding provided must be used to support the implementation and operationalization of NG9-1-1 technology. Funding will be provided on a one-time basis and must be spent in accordance with the eligible cost categories defined in the agreement. The eligible costs include:

- NG9-1-1 Technology Upgrades
- Project support such as:
 - Consultants
 - Training
 - Change management to manage technology changes
 - Dedicated NG9-1-1 project resources
- Infrastructure Requirements
 - Facility assessments to support NG9-1-1 technology
 - Physical site/facilities upgrades required to support NG9-1-1 technology such as heating, cooling, power, NG9-1-1 system security
 - NG9-1-1 network requirements
 - NG9-1-1 server racks, cabling

The costs must be incurred between April 2 , 2022 and March 31, 2023. As the grant was just announced the first of March 2023, it is not anticipated that all of the funds can be spent by the end of March. Currently the Ministry is seeking approval on the funding allocations for the remaining two years that meet the goals of the transfer payment program and achieve equity. The Ministry is targeting a release of more information on the final two years of the program commencing March 2023.

Financial Implications

Two transfer payments agreements have been received, one for the Brockville Fire Department, up to \$1,245,000, and one for the Brockville Police Services, up to \$600,000. T

Policy Alignment

Council must approve transfer payment agreements.

Conclusion

The City is mandated to upgrade its emergency response systems to the Next Generation 9-1-1 systems. The Ministry has provided for initial funding for both the Brockville Fire Department and the Brockville Police Services. Currently the Ministry is seeking approval for future funding the remainder two years so that the deadline of compliance of March 4, 2025 may be met.

Approved by:

Lynda Ferguson, Director of Finance & IT
Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 13 Mar 2023

Approved - 16 Mar 2023

Water Systems Division Quarterly Report October - December 2022

Brockville Drinking Water System 220001263

Elizabethtown-Kitley Water Distribution System 260007777

This report covers the quarterly period of October 1st, 2022 to December 31st, 2022. The intent of the report is to keep the Committee, Council, and the public current with performance and major operational aspects of the Water Treatment Plant, Water Distribution Systems, including any notable highlights, MECP inspections and adverse conditions.

The City continues to be in compliance with the Water Treatment Plant's Municipal Drinking Water Licence and Drinking Water Works Permit, in addition to the Ontario Safe Drinking Water Act and Regulations.

Adverse Water Quality Incidents

Adverse Water Quality Incident	
October	None to report
November	None to report
December	None to report

Regulatory Sampling

Bacteriological Sampling:

Bacteriological Parameter	October	November	December
E. coli (EC)	39 out of 39 safe	49 out of 49 safe	37 out of 37 safe
Total Coliform (TC)	39 out of 39 safe	49 out of 49 safe	37 out of 37 safe
Heterotrophic Plate Count (HPC)	27 out of 27 safe	34 out of 34 safe	26 out of 26 safe

System Free Chlorine Residuals:

Free Chlorine Residual (mg/L)	October	November	December
Minimum	1.01	1.15	1.25
Maximum	2.10	2.00	1.97
Average	1.64	1.64	1.62

Fluoride Residuals:

Fluoride Residual (mg/L)	October	November	December
Minimum	0.22	0.32	0.25
Maximum	0.80	0.75	1.20
Average	0.45	0.47	0.58

Microcystin Sampling: Weekly sampling from June 7th through October 25th, 2022

Raw Water			
Microcystin (mg/L)	October	November	December
Minimum	<0.00015	Not Tested	Not Tested
Maximum	>0.00500	Not Tested	Not Tested
Geometric Mean	0.00049	Not Tested	Not Tested

Treated Water			
Microcystin (mg/L)	October	November	December
Minimum	<0.00015	Not Tested	Not Tested
Maximum	<0.00015	Not Tested	Not Tested
Geometric Mean	<0.00015	Not Tested	Not Tested

Quarterly Sampling:

Completed October 4th, 2022
Next Scheduled for January 3rd, 2023

Annual Sampling:

Completed January 11th, 2022
Next Scheduled for January 10th, 2023

Lead Sampling:

Completed September 13th
Next Scheduled for April 2023

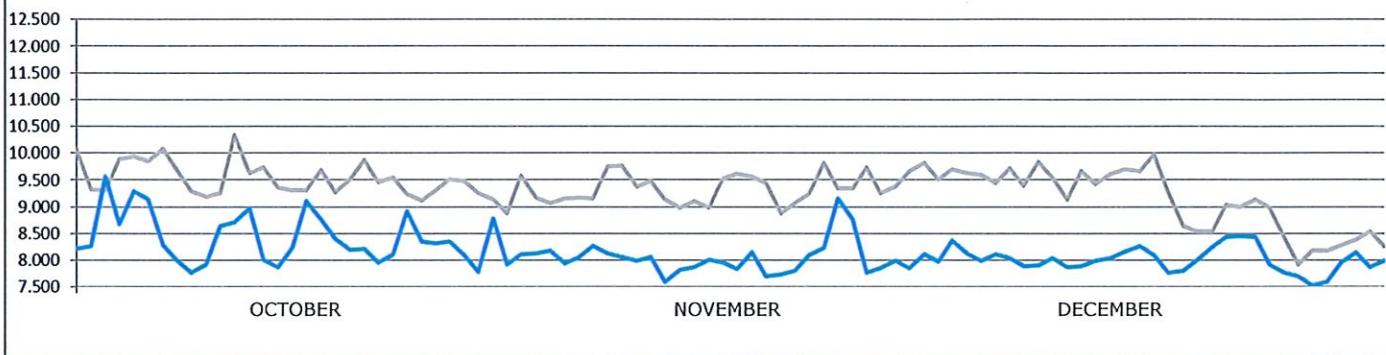
Treated Volumes: Water Treatment Plant

* As calculated through SCADA

Brockville:

	Average Daily Volume (ML)	Maximum Daily Volume (ML)	Total Volume (ML)	% WTP Capacity
October	8.413	9.559	260.802	26.3%
November	8.042	9.163	241.271	25.2%
December	8.015	8.448	248.478	23.2%

Main Plant Daily Total Volume (ML) 2021 vs 2022

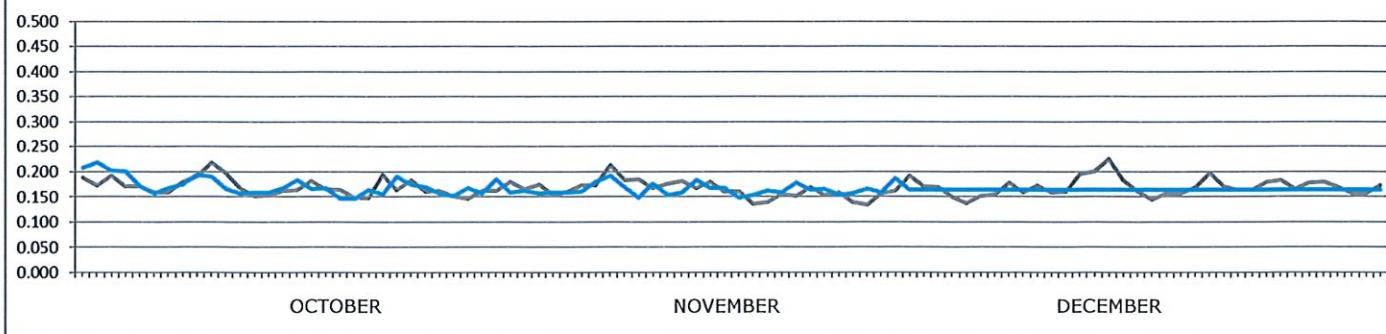


Note:

Elizabethtown-Kitley:

	Average Daily Volume (m³)	Maximum Daily Volume (m³)	Total Volume (m³)	% WTP Total
October	172	218	5320	2.04%
November	164	192	4924	2.04%
December	164	164	5084	2.05%

Elizabethtown-Kitley Daily Total Volume (ML) 2021 vs 2022



Note: Flow meter motherboard failed November 28, 2022. Flow estimated on available November data averages.

Operational Highlights – Brockville Water System

Water Treatment Plant:

- Weekly, Monthly operational cleaning and calibrations on all chlorine, pH, and turbidity analyzers completed
- Spare Rosemount differential pressure flow transmitter ordered from Laurentide Controls September 22, 2022 – Received October 2022

Low Lift System:

- Low Lift Pump #3 removed from service in late September. Awaiting approval from Council for replacement or refurbishment.

Trunk Feedemain:

- Leak investigation at Church and Perth ongoing.

Overhead Storage Tank:

- No items to report.

Parkedale Reservoir:

- Annual diving inspection completed by Dundee Marine December 7, 2022.

Zone 3 - First Avenue Booster Station:

- Long term, on-going communication outages during rain events
 - On-going Bell company investigation

Watermain Repairs:

- 6" watermain break at 15 Downey repaired October 30, 2022. Large blow out required section to be cut out and replaced. Water service restored same day.
- 6" watermain break at 26 Elm Avenue reported November 23, 2022. Multiple large corrosion holes at break site required section to be shut down and cut out. A 6" main break in front of 14 Elm Avenue the same day prevented the shut down of the section to cut out at 26 Elm Avenue. Repairs completed at 14 Elm Avenue November 24, 2022 and then area shut down to complete repairs at 26 Elm Avenue the same day. Water service restored by 8:00 pm.
- 6" watermain break 40 Oxford Avenue reported November 29, 2022 near site of 1809 Oxford. Repairs completed the same day.

Leak Detection:

- Ongoing acoustic and electronic leak detection
- Leaks located at locations on customer owned services:
 - Service remains off at 26 Victoria Avenue pending repairs to plumbing
 - Service leak present at 1296 Brockmount Place - homeowner to address
 - 6" service leak present at 2210 Parkedale (Wills Transfer) - owners to address
 - Service leak present at 1338 Borden Crescent - homeowner completed repair October 7, 2022.
 - Possible service leak investigated at 74 Bisley Crescent – Operators determined leak on private side – to be repaired by homeowners
 - Curbstop box and rod replacement at 3 Park/62 Water Street East completed Nov 30, 2022.

- Leaks located at 3 locations on City owned services:
 - Service leak present at Blockhouse isolated by Parks – to be repaired

Valve Inspections/Repairs:

- WV583 at Elm Avenue and Dewick replaced Dec 1, 2022 as it was found to have failed, approximately 80% closed after repairs were completed at 26 Elm Avenue mainbreak.
- WV429 servicing H776 at Ernie Fox Quay was used to shutdown hydrant in order to rebuild. Was found to be unable to stop flow of water. Valve was rebuilt in 2016. To be replaced.
- 7 repairs to valve boxes completed post ACPM projects.

Hydrant Inspections/Repairs:

- Annual hydrant inspections and flushing completed:
 - 14 of 14 Township hydrants complete (100%)
 - 856 of 856 City hydrants complete (100%)
 - 105 of 106 Private hydrants complete (99.05%)
 - H673 inspection unable to be completed do to missing valve nut and main break before hydrant (private property)
- Hydrants identified as Out of Service (7) pending repairs:
 - Private Hydrant H649 at Country Club Place to be addressed by property management
 - Private Hydrant H673 at Wills Transfer to be addressed by 3rd party as part of private watermain repairs
 - Hydrant H350 at 9 Riverview Drive. Issues with hydro pole and retaining wall proximity to hydrant have delayed excavation.
 - Hydrant H255 at 2170 California Avenue. Hydrant appears to be connected to trunk main. Will require significant service outage to address. Alternative options under consideration.
 - Hydrant H410 at 393 Stewart Boulevard was slated for replacement during Stewart Boulevard main replacement - project rescinded. Repairs delayed due to exceptional depth of main, soil conditions, and proximity of large established tree.
 - Hydrant H714 at Crocker Crescent and Parkedale to be repaired using Valve Nut RX once additional training and orientation on new equipment can be completed
 - Private Hydrant H929 at Waste Management damaged by contractors August 18th. Repairs to be undertaken by 3rd party and Fire Dispatch notified directly. Hydrant verified still out of service.
- 2 Work Orders completed allowing 2 hydrants to be called back into service with Brockville Fire Department (BFD):
 - Hydrant H317 at 265 Reynolds was identified as having a missing operation nut on branch valve. Repair completed with Valve Nut Rx October 27, 2022 and called back into service with BFD.
 - Hydrant H621 at Ormond and King Street appears to have been struck by a vehicle – barrel damage. Repairs completed November 9-10, 2022 and called back into service with BFD.
- 7 Hydrant in-use notifications initiated by BFD, post use inspections completed, all satisfactory.

Service Inquiries Repairs/Replacement:

- 30 requests for service isolation completed
- 12 curbstop repair work orders created from the 30 requests for isolation:
 - 10 completed and repaired. 2 deferred as no leak or work to be done internally.
- 1 service leak repaired at 15 Downey Street November 4, 2022, directly linked to main break October 30, 2022
- 1 possible service leak investigated 74 Bisley Crescent – Operators determined leak on private side – to be repaired by homeowners

- Service proposed for 205 King Street West to be completed in 2023
- 1 service capped at property line to 222 Bartholomew November 22, 2022
- 1 service curbstop box at 412 Pearl Street West identified/located for homeowner to maintain accessibility during the winter
- Responded to 6 general water service quality inquiries:
 - 3 no water complaints and 3 leaking water meter issues - all resolved
- 2 fire flow tests were completed by private contractors under the supervision of City Operators
- Lead service replacement program underway
 - Excavation and service replacements at 3,5,6,7 Bartholomew Street deferred indefinitely

Backflow Program:

- Backflow oversight program to be proposed for 2023 Capital Budget
- 7 of 7 backflow devices inspected and validated at WPCC. Last remaining backflow was repaired and tested on November 15, 2022 by Venditti Backflow Repair.
- 2 additional metered backflow protected platforms to be constructed and deployed for use at WPCC septic receiving station and in support of mainline flushing program for 2023

Watermain Commissioning:

- 4"X6" tap completed for servicing 1809 Oxford Avenue
 - Main commissioning procedure initiated November 25, 2022 and final bacteriological sample taken December 1, 2022
 - Service tied into City water system December 2, 2022
- 6"X10" tap at 29 Central Avenue West (Westminster School) completed September 20, 2022
 - Main commissioning procedure initiated on October 5, 2022 and final bacteriological sample taken October 7, 2022
 - Service tied into City water system October 18, 2022

Capital Projects

- Backwash Wastewater Upgrades
 - Automated controls integration to be completed
 - Diffuser to be installed at sanitary manhole at King Street and Rivers Avenue
- TSSA Fuel Containment Dikes
 - Final TSSA inspection report received July 17th, 2022. Minor deficiencies to be addressed for full clearance.
 - Fuel containment area at Parkedale Avenue Reservoir to be coated with epoxy
- External Connection for WTP Genset
 - Final testing and commissioning pending contractor availability
- Chlorine Analyzer Replacements
 - Final mounting and switchover planned for 2022 – not completed.
- Chlorine system
 - Annual preventive maintenance on chlorine gas injection system completed
- WTP Low Lift and High Lift pump refurbishments tender closed May 6th, 2022
 - NEVTRO of London, Ontario was the lowest successful bidder
 - Removal of pumps was to proceed October 17th – 18th 2022. Awaiting approval from Council for refurbishing or new pump and motor set.

- PLC programming software updates in progress
 - iFix (SCADA) licensing purchased in order for new instrumentation technician to make changes and upgrades/repairs as needed
- Elizabethtown-Kitley proposed Capital Projects to be reviewed
- First Avenue and King Street line and valve orientation project in development
- Coagulant system
 - Flushed PAC system pumps, headers, and lines
 - Wrote SOP and incorporated in regular plant maintenance
- Overhead Tank Coating
 - Eastern Engineering engaged to provide survey and scope of work for required earthworks to accommodate future rehabilitation work
 - Awaiting survey and scope of work
- Pumping systems study in development
- WTP High Lift VFD project in development
 - VFDs to be sourced and installed
- Trunk/Feedermain Class EA pending changes to EA requirements to determine pre-planning needs
- WTP and Parkedale Reservoir Cleaning and Inspections
 - (3) quotes received for ROV inspection and manned diver services
 - Water Plant reservoir inspection completed by Dundee Marine December 6, 2022
 - Parkedale reservoir inspection completed By Dundee Marine December 7, 2022
- Repairs for WTP walkway and steps
 - Project delayed to 2023 due to contractor availability

Service Requests

- 101 Work Orders Completed through SysAID between Brockville and EZK- detailed summary available for review
 - 92 completed and closed
 - 7 deferred until spring as non-emergency
 - 2 deferred indefinitely pending repairs needed – currently no leak or repairs required
 - Numbers of incidents supplied from SysAID report are inaccurate due to duplicate calls/tickets

Customer Inquiries

- 6 customer requests to investigate water quality concerns due to pressure, discolored water, or air in lines - all issues resolved

Operational Highlights Elizabethtown-Kitley Distribution System

Local Distribution:

- 8 requests for service related issues:
 - 7 requests for service isolation for leak repair or maintenance – all completed
 - 1 request for 1" main tap for servicing new lot on Brockmere Cliffs Road – completed

Meter Chamber:

- Inaccurate representation of total volume and usage as Country Club meter experienced motherboard failure on November 28, 2022 – replaced January 4, 2023
- Proposed replacement of communications system to be discussed

Lilly Bay Booster Station:

- Proposed replacement of communications system to be discussed

Hydrants:

- H803E used by Elizabethtown-Kitley Fire Department.
 - Post-use inspection completed - no issues

Administrative:

General:

- 2023 Operating and Capital Budget preparations underway

Drinking Water Quality Management System (DWQMS):

- Review and revision of Operational Plans and associated procedures ongoing
- DWQMS Management Review Summary Report submitted for review. Due to staff absence DWQMS Management Review meeting did not take place in 2022.

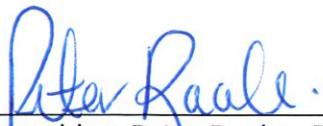
MECP Inspections and Regulatory Reporting:

- MECP annual inspection of the City of Brockville and Elizabethtown-Kitley water systems was completed November 9, 2022

Training and Safety:

- CEU and training plan for 2022 in progress.
 - All Operators current for Standard First Aid through 2022
 - 4 Water Systems staff attended training sessions in Smiths Falls October 24–25
- Review and revision of Emergency Response Procedure Manual ongoing
- Daily "tailgate" meetings to discuss work orders and safety concerns and measures in place
- Monthly Health and Safety equipment and facility inspections completed
- Replacement of fleet First Aid kits and fire extinguishers as needed
- Tabletop safety discussions underway

- The COVID-19 global pandemic is ongoing with a sustained focus on maintaining staff health to ensure the protection and integrity of all water systems operations:
 - Masking protocols have laxed
 - Staff continue to self-monitor



Reviewed by: Peter Raabe, P. Eng.
Director of Engineering and Infrastructure



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services
Report Number:	2023-44
Subject:	2022 Annual Water Quality Report Brockville Drinking Water System

Recommendation

THAT Council receive Report SR2023-44, 2022 Annual Water Quality Report for the Brockville Drinking Water System.

Background

This annual report covers the period January 1, 2022 through December 31, 2022 and is a requirement under the Safe Drinking Water Act, 2002 – Ontario Regulation 170/03, Schedule 22.

The report is prepared annually and is required to be presented to Council no later than March 31st following the end of the period being reported upon.

Analysis

The 2022 Annual Water Quality Report for the Brockville Drinking Water System provides a summary of the plant description and design, flow data, and water quality parameters. This report has been posted on the City's website and is available at City Hall and the City's Public Library.

Financial Implications

No financial implications at this time.

Policy Alignment

In accordance with Provincial Regulations.

Conclusion

It is recommended that Council receive the report.

Approved by:

Peter Raabe, Director of Engineering &
Infrastructure Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Approved - 16 Mar 2023

Attachments:

[2022 Annual Water Quality Report](#)

BROCKVILLE DRINKING WATER SYSTEM



BROCKVILLE
CITY OF THE 1000 ISLANDS

2022 ANNUAL WATER QUALITY REPORT

P. Raabe, P. Eng., Director of Engineering and Infrastructure

DATE: February 27, 2023



Brockville Drinking Water System Annual Water Quality Report 2022

EXECUTIVE SUMMARY

The City of Brockville's Water Systems Division is pleased to provide the 2022 Annual Drinking Water Quality Report. The purpose of this report is to keep the public and Council informed regarding the quality of the City's drinking water and the performance and maintenance of our water treatment and distribution systems.

The City of Brockville is dedicated to delivering a clean, safe, reliable, drinking water supply to the consumer while remaining compliant with all regulatory requirements. Achievement of those commitments is supported by risk-based process evaluation, staff competency, effective communications, and appropriate contingency / incident response measures. The managers and employees of the City of Brockville who are directly involved in the production and delivery of safe drinking water are committed to and share in the responsibilities for implementing, maintaining, and contributing to the continual improvement of the Drinking Water Quality Management System. The water delivered to the consumers in the City of Brockville and a portion in the Township of Elizabethtown-Kitley continues to be safe, meeting all drinking water quality regulatory standards.

This Annual Drinking Water Quality Report is prepared in accordance with the Municipal Drinking Water Licence, Drinking Water Works Permit for the Brockville Drinking Water System and Ontario Regulation 170/03, Section 11 and Schedule 22. Included with this report are analytical data, plant flow, adverse water quality incidents and corrective action resolutions, as well as a process flow schematic of the facility.



Brockville Drinking Water System Annual Water Quality Report 2022

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Brockville Drinking Water System Annual Water Quality Report 2022

LIST OF ACRONYMS & DEFINITIONS

AWQI	Adverse Water Quality Incidents Examples of adverse water results: <ul style="list-style-type: none">▪ An analytical result that exceeds a health-based water quality standards▪ Any evidence that disinfection may not have been effective▪ Low chlorine residuals
C of A	Certificate of Approval
CFU	colony forming units
CGSB	Canadian General Standards Board
DWQMS	Drinking Water Quality Management Standard
GUDI	groundwater under the direct influence of surface water
L/s	litres per second
m³/d	cubic metres per day
mg/L	milligrams per litre
mL	milliliter
ML/d	Mega (million) litres per day
MECP	Ministry of the Environment, Conservation and Parks (Ontario)
MOH	Medical Officer of Health
PVC	Poly Vinyl Chloride
O. Reg.	Ontario Regulation
PTTW	Permit to Take Water
R.R.O.	Revised Regulations Ontario (1990)
SCADA	Supervisory Control and Data Acquisition
SDWA	Safe Drinking Water Act, 2002
WTP	Water Treatment Plant



Brockville Drinking Water System Annual Water Quality Report 2022

1. INTRODUCTION

This Annual Water Quality Report is for the period from January 1st to December 31st, 2022 and includes reporting for both the municipal drinking water treatment and distribution systems that the City of Brockville owns and operates and the water distribution system that the Township of Elizabethtown-Kitley owns and the City of Brockville operates.

This report contains three different reports required for the City of Brockville and the Elizabethtown-Kitley Drinking Water Systems:

- Section 11 Annual Report, as per Section 11 of O. Reg. 170/03
- Summary report as per Schedule 22 of O. Reg. 170/03
- Summary of the raw water values that were submitted to the Ministry of the Environment, Conservation and Parks under O. Reg. 387/04 Water Taking & Transfer

This annual report is available to the public at no charge. Users of this drinking water system have been notified that this annual report is available by placing a notice on the City of Brockville's website and water billing inserts. The 2022 Annual Water Quality Report is available at the following locations:

- City of Brockville's website - www.brockville.com
- City of Brockville – Public Library
- City of Brockville – Customer Service office, City Hall
- City of Brockville – Water Systems Division, 20 Rivers Ave., 613-342-8772 ext. 5512
- Township of Elizabethtown-Kitley's website - <http://www.ektwp.ca>
- Township of Elizabethtown-Kitley's Municipal Office – 6544 New Dublin Road, Addison

2. LEGISLATED REQUIREMENTS

2.1 Drinking-Water Systems Regulation (O. Reg. 170/03)

Under Schedule 22 of the Drinking Water Systems Regulation (O. Reg. 170/03), Summary Reports for Municipalities, annual reports to the owners of large municipal residential systems and small municipal systems are required. The summary report must be submitted no later than March 31st to members of municipal council. The contents must list the requirements of the *Safe Drinking Water Act, 2002*, the regulations, the system's approval and any order that the system failed to meet at any time during the reporting period covered, specify the duration of the failure, and the measures taken to correct the failure.



Brockville Drinking Water System Annual Water Quality Report 2022

In addition, the report must include a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly averages, maximum daily flows and daily instantaneous peak flows. The summary must be compared to the rated capacity and flows provided in the system's Municipal Drinking Water Licence.

The City of Brockville is the Owner of the Water Treatment Plant, trunk and local water distribution systems, and the City of Brockville is the Operating Authority for the Township of Elizabethtown-Kitley's water distribution system.

2.2 Summary of Regulatory Requirements

Acts and Regulations

Regulated systems must meet the requirements of Ontario's *Safe Drinking Water Act, 2002* and its regulations. Most notably, the Drinking Water Systems Regulation sets out treatment and testing requirements for all categories of regulated water systems, including small non-municipal and seasonal operations.

Safe Drinking Water Act, 2002

In the Part Two Report of the Walkerton Inquiry, Justice O'Connor recommended that the Ontario government enact a *Safe Drinking Water Act, 2002* to deal with matters related to treatment and distribution of drinking water. As articulated by Justice O'Connor, the purpose of the *Safe Drinking Water Act, 2002* is to gather in one place all legislation and regulations relating to the treatment and distribution of drinking water.

Summary of Provincial Legislation Significant to Water Operations

ACT	O. Reg.
WATER OPPORTUNITIES and WATER CONSERVATION ACT	
➤ Water Opportunities and Water Conservation Act, 2010	Bill 72
CLEAN WATER ACT, 2006	
➤ Source Protection Areas and Regions	O. Reg. 284/10
➤ Source Protection Committees	O. Reg. 288/10
➤ Terms of Reference	O. Reg. 287/07
SAFE DRINKING WATER ACT, 2002	
➤ Drinking Water Systems Regulation	O. Reg. 170/03
➤ Certification of Drinking-Water System Operators and Water Quality Analysts	O. Reg. 128/04
➤ Drinking Water Testing Services - relating to laboratory licensing	O. Reg. 248/03
➤ Schools, private schools and day nurseries	O. Reg. 243/07
➤ Compliance and Enforcement Regulation	O. Reg. 242/05



Brockville Drinking Water System Annual Water Quality Report 2022

SAFE DRINKING WATER ACT, 2002 Continued	
➤ Ontario Drinking Water Quality Standards	O. Reg. 169/03
➤ Definitions of Words and Expressions Used in the Act	O. Reg. 171/03
➤ Definition of Deficiency and Municipal Drinking Water System	O. Reg. 172/03
➤ Licensing of Municipal Drinking-Water Systems	O. Reg. 188/07
➤ Financial Plans	O. Reg. 453/07
ONTARIO WATER RESOURCES ACT	
➤ Licensing of Sewage Works Operators	O. Reg. 129/04
➤ Approval Exemption	O. Reg. 525/98
➤ Wells	R.R.O. 1990, Reg. 903
➤ Revoking Ontario Regulation 459/00	O. Reg. 175/03
➤ Revoking Ontario Regulation 505/01	O. Reg. 176/03
➤ Water Taking	O. Reg. 387/04
➤ Charges for Industrial and Commercial Water Users	O. Reg. 450/07
ENVIRONMENTAL PROTECTION ACT	
➤ Certificate of Approval Exemptions - Air	O. Reg. 524/98
ENVIRONMENTAL BILL OF RIGHTS ACT	
➤ Prescribing the Safe Drinking Water Act, 2002	O. Reg. 257/03

3. ANNUAL WATER QUALITY SUMMARY FOR 2022

The City of Brockville's Water Systems Division is responsible for the Brockville Drinking Water System under O. Reg. 170/03 including water treatment plant, trunk water distribution system (elevated storage, reservoirs, booster stations) and local water distribution systems. Staff's primary responsibility is water treatment and distribution in compliance with all applicable legislation and municipal drinking water licenses and drinking water works permits. Routine water quality testing and continuous monitoring of water quality and quantity is conducted to ensure compliance. All data from SCADA, process control point data, in-house laboratory results and external laboratory results are all captured in a WaterTrax data management system.

3.1 Water Quality Data

Raw and treated water is sampled and tested for chemical, physical and microbiological parameters in accordance with the requirements of O. Reg. 170/03 and individual municipal licenses and permits. Sampling is also conducted in the distribution system primarily for bacteriological indicators and evidence of sustained chlorine residuals. Enhanced sampling programs are also defined by the Water Systems Division, and testing procedures followed and where necessary submitted to external accredited laboratory for analysis. This level of water quality monitoring ensures public health and public confidence in the water supply.



Brockville Drinking Water System Annual Water Quality Report 2022

The majority of analysis is conducted by an external accredited laboratory, with some specialized analysis contracted to other accredited laboratories. In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents are provided to the Spills Action Centre and Medical Officer of Health.

Operational Testing:

The following table is a summary of the operational testing completed in 2022 (as per O. Reg. 170/03, Schedules 6 and 7).

Parameter	# of Grab Samples	Results		
		MIN	MAX	AVG
Turbidity – Raw (NTU)	Continuous monitoring	0.10	9.99	0.42
Turbidity – Filter 1 (NTU)	Continuous monitoring	0.00	0.17	0.06
Turbidity – Filter 2 (NTU)	Continuous monitoring	0.00	0.55	0.08
Turbidity – Treated (NTU)	Continuous monitoring	0.03	6.94	0.07
Chlorine – Pre Filter (mg/l)	Continuous monitoring	0.00	1.45	0.33
Chlorine – Reservoir (Main Plant) (mg/l)	Continuous monitoring	1.60	2.71	2.05
Chlorine – Plant Effluent (mg/l)	Continuous monitoring	0.59	2.80	2.05
Chlorine – Distribution System Parkedale Reservoir (mg/l)	Continuous monitoring	1.06	2.50	1.77
Chlorine – Elizabethtown-Kitley Distribution System (mg/l)	52	0.89	1.85	1.37
Fluoride – Plant Effluent (mg/l)	365	0.18	1.20	0.50
UV Dosage (mJ/cm ²)	Continuous monitoring	0	3277	2
UV Intensity (mW/cm ²)	Continuous monitoring	0	0	n/a
UV Transmittance (%)	366	93.5	100	96.9

Microbiological Testing:

Microbiological testing completed under the Schedule 10, 11 or 12 of O. Reg. 170/03 during 2022 reporting period.

Sample Description:	Number of Samples	Range of E. Coli Or Fecal Results CFU/100ml		Range of Total Coliform Results CFU/100ml		Number of HPC Samples	Range of HPC Results CFU/ml	
		MIN	MAX	MIN	MAX		MIN	MAX
Raw	52	0	22	0	197	52	<10	>2000
Treated	53	0	0	0	0	53	<1	800
Distribution	513	0	0	0	0	358	<1	40



Brockville Drinking Water System Annual Water Quality Report 2022

Chemical Testing:

The following Tables are a summary of the chemical testing completed in 2022 (as per O. Reg. 170/03, Schedule 13).

Schedule 23**Summary of Inorganic parameters tested during this reporting period or the most recent sample results:**

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Antimony	2022-01-11	0.0001	mg/l	No	No
Arsenic	2022-01-11	0.0006	mg/l	No	No
Barium	2022-01-11	0.023	mg/l	No	No
Boron	2022-01-11	0.020	mg/l	No	No
Cadmium	2022-01-11	<0.000015	mg/l	No	No
Chromium	2022-01-11	<0.002	mg/l	No	No
Mercury	2022-01-11	<0.00002	mg/l	No	No
Selenium	2022-01-11	<0.001	mg/l	No	No
Sodium	Jan. – Dec. (12 samples)	14.3*	mg/l	No	n/a
Uranium	2022-01-11	0.00028	mg/l	No	No
Nitrite	Quarterly (4 samples)	<0.1*	mg/l	No	No
Nitrate	Quarterly (4 samples)	0.3*	mg/l	No	No

**average*

n/a – not applicable



Brockville Drinking Water System Annual Water Quality Report 2022

Schedule 24**Summary of Organic parameters sampled during this reporting period or the most recent sample results:**

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Alachlor	2022-01-11	<0.3	ug/l	No	No
Atrazine + N-dealkylated metabolites	2022-01-11	<0.5	ug/l	No	No
Azinphos-methyl	2022-01-11	<1	ug/l	No	No
Benzene	2022-01-11	<0.5	ug/l	No	No
Benzo(a)pyrene	2022-01-11	<0.006	ug/l	No	No
Bromoxynil	2022-01-11	<0.5	ug/l	No	No
Carbaryl	2022-01-11	<3	ug/l	No	No
Carbofuran	2022-01-11	<1	ug/l	No	No
Carbon Tetrachloride	2022-01-11	<0.2	ug/l	No	No
Chlorpyrifos	2022-01-11	<0.5	ug/l	No	No
Diazinon	2022-01-11	<1	ug/l	No	No
Dicamba	2022-01-11	<1	ug/l	No	No
1,2-Dichlorobenzene	2022-01-11	<0.5	ug/l	No	No
1,4-Dichlorobenzene	2022-01-11	<0.5	ug/l	No	No
1,2-Dichloroethane	2022-01-11	<0.5	ug/l	No	No
1,1-Dichloroethylene	2022-01-11	<0.5	ug/l	No	No
Dichloromethane	2022-01-11	<5	ug/l	No	No
2-4 Dichlorophenol	2022-01-11	<0.2	ug/l	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2022-01-11	<1	ug/l	No	No
Diclofop-methyl	2022-01-11	<0.9	ug/l	No	No
Dimethoate	2022-01-11	<1	ug/l	No	No
Diquat	2022-01-11	<5	ug/l	No	No
Diuron	2022-01-11	<5	ug/l	No	No
Glyphosate	2022-01-11	<25	ug/l	No	No
Malathion	2022-01-11	<5	ug/l	No	No
2-Methyl-4-Chlorophenoxyacetic acid (MCPA)	2022-01-11	<10	mg/l	No	No



Brockville Drinking Water System Annual Water Quality Report 2022

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Metolachlor	2022-01-11	<3	ug/l	No	No
Metribuzin	2022-01-11	<3	ug/l	No	No
Monochlorobenzene	2022-01-11	<0.5	ug/l	No	No
Paraquat	2022-01-11	<1	ug/l	No	No
Pentachlorophenol	2022-01-11	<0.2	ug/l	No	No
Phorate	2022-01-11	<0.3	ug/l	No	No
Picloram	2022-01-11	<5	ug/l	No	No
Polychlorinated Biphenyls(PCB)	2022-01-11	<0.05	ug/l	No	No
Prometryne	2022-01-11	<0.1	ug/l	No	No
Simazine	2022-01-11	<0.5	ug/l	No	No
THM (NOTE: shows latest annual average)	Quarterly (min) (4 samples)	30.0*	ug/l	No	No
HAA's (NOTE: shows latest annual average)	Quarterly (min) (4 samples)	19.1*	ug/l	No	No
Terbufos	2022-01-11	<0.5	ug/l	No	No
Tetrachloroethylene	2022-01-11	<0.5	ug/l	No	No
2,3,4,6-Tetrachlorophenol	2022-01-11	<0.2	ug/l	No	No
Triallate	2022-01-11	<10	ug/l	No	No
Trichloroethylene	2022-01-11	<0.5	ug/l	No	No
2,4,6-Trichlorophenol	2022-01-11	<0.2	ug/l	No	No
Trifluralin	2022-01-11	<0.5	ug/l	No	No
Vinyl Chloride	2022-01-11	<0.2	ug/l	No	No

*average



Brockville Drinking Water System Annual Water Quality Report 2022

LEAD SAMPLING:Brockville Drinking Water System (Lead Sampling Exemption for plumbing only)

Sampling Period – Winter (December 15th to April 15th)	Plumbing	Distribution
Number of individual samples	N/A	4
Number of sample points (locations)	N/A	4
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A

Sampling Period - Summer (June 15th to October 15th)	Plumbing	Distribution
Number of individual samples	N/A	4
Number of sample points (locations)	N/A	4
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A



Brockville Drinking Water System Annual Water Quality Report 2022

Elizabethtown-Kitley Distribution System (Lead Sampling Exemption for plumbing only)

Sampling Period – Winter (December 15th to April 15th)	Plumbing	Distribution
Number of individual samples	(Lead Sampling Regulatory Relief)	2
Number of sample points (locations)	N/A	2
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A

Sampling Period - Summer (June 15th to October 15th)	Plumbing	Distribution
Number of individual samples	(Lead Sampling Regulatory Relief)	2
Number of sample points (locations)	N/A	2
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A



Brockville Drinking Water System Annual Water Quality Report 2022

4. BROCKVILLE DRINKING WATER SYSTEM**4.1 Water System Description**

Drinking-Water System Number:	220001263
Drinking-Water System Name:	Brockville Drinking Water System
Drinking-Water System Owner:	City of Brockville
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	152-101
Drinking Water Works Permit:	152-201
Permit To Take Water:	8577-5ZCP45
Drinking-Water System Category:	Large Municipal
Design Capacity:	36.4 ML/D
Treatment:	Direct Filtration Class III
Local Distribution:	Class II
Trunk Distribution:	Class III
Source Water:	St Lawrence River
Population Served:	22,000

Connected Drinking-Water Systems:

Drinking-Water System Number:	260007777
Drinking-Water System Name:	Elizabethtown-Kitley Distribution System
Drinking-Water System Owner:	Township of Elizabethtown-Kitley
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	257-101
Drinking Water Works Permit:	257-201
Drinking-Water System Category:	Large Municipal Class I
Water Source:	City of Brockville DWS
Population Served:	350



Brockville Drinking Water System Annual Water Quality Report 2022

4.1.1 Water Treatment Plant

The City of Brockville's Water Treatment Plant is a Class III direct filtration facility located at 20 Rivers Avenue, located on the St. Lawrence River and serves the City of Brockville (population 22,000), and a portion of the Township of Elizabethtown-Kitley (population 350).

A 900 mm raw water intake pipe equipped with zebra mussel control lies on the bottom of the St. Lawrence River extending 300 meters offshore at a depth of 10.5 meters. The treatment process has a design maximum flow rate of 36.4 ML/d and is composed of a number of sub-units:

- low lift pumping station
- coagulation and flocculation using polyaluminum chloride (PAC)
- pre- and post-filter disinfection with chlorine gas
- two granular activated carbon filters
- fluoride addition
- treated water reservoir and high lift pumping station
- final treated water UV disinfection and additional chlorination

4.1.2 Treatment Chemicals Used

All chemicals used in the operation of the drinking water system meets all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61

Chemical	Application	Supplier
Chlorine Gas	Pre Filter, Post Filter, Plant Effluent (Primary Disinfection)	Brenntag Canada
Poly Aluminum Chloride XL-6 (SternPAC) PAX XL-1900 (ACH)	Pre Filter (Coagulant)	Kemira Water Solutions
Hydrofluorosilicic acid (HFSA)	Plant Effluent (Fluoride)	Brenntag Canada

4.1.3 Water Distribution System – Trunk and Local Systems

The Water Distribution System is separated into a Class III Trunk Water Distribution System (Certificate #3811) and a Class II Local Water Distribution System (Certificate #2193).

The distribution is comprised of 3 distinct pressure zones and consists of underground pipes ranging in size from 100 mm to 600 mm in diameter, made of a variety of materials including cast iron, ductile iron, poly vinyl chloride (PVC), concrete, steel, high density polyethylene (HDPE), and asbestos cement. There are approximately 8,400 service connections, 940 fire hydrants and 2,800 valves. Several treated water storage facilities and booster stations are located throughout the system as indicated below.



Brockville Drinking Water System Annual Water Quality Report 2022

- [Trunk Feeder Main & Local Distribution Systems](#)
600 mm single trunk feeder main from the WTP to the Church Street/Perth Street area where flow splits between the Water Tower and the Local and Trunk distribution systems.
- [Water Booster Stations](#)
There are three (3) booster pump stations (First Avenue., Sunset Boulevard., Parkedale Avenue.) within the distribution system. These booster stations utilize pumps to ensure consistent pressure throughout the system.
- [Perth Street Elevated Storage Tank \(Water Tower\)](#)
The most visible feature of the distribution system is the 2,270 m³ (500,000 IG) elevated storage tank located on Perth St in Zone 1. It is a single cell, steel, non-baffled treated water storage tank.
- [Parkedale Avenue Reservoir Booster Station](#)
The Parkedale Avenue Reservoir Booster Station is a 7,600 m³ capacity reservoir at-grade, single cell, concrete, non-baffled, treated water reservoir. The station services two geographical areas. Zone 1 is the area South of Highway 401, and Zone 2 is the area North of Highway 401.
Zone 1 and Zone 2 booster stations are located on this site and assist in maintaining system pressures within the 2 zones.
- [First Avenue Booster Station](#)
The First Avenue Booster Station located on First Avenue services Zone 3. Zone 3 is defined by the boundary of First Avenue to the West, King Street East to the South, Broadway Avenue to the North, and Oxford Avenue to the East.
- [Sunset Boulevard Booster Station](#)
This booster station is located within a below grade pump chamber on Sunset Boulevard and provides consistent pressure locally to Sunset Boulevard and Hollywood Place

4.2 2022 Flow Summary

In 2022 the maximum or peak instantaneous raw water flow recorded was 28.910 ML/day (20,076 L/min) which occurred on August 17th, 2022 and was below the permitted maximum amount of 36.400 ML/day (25,278 L/min). The maximum volume of raw water taken on any single day was 12.482 ML which occurred on August 17th, 2022, and was also below the permitted maximum of 36.400 ML/d.

The annual average daily raw water volume to the WTP was 9.540 ML/day or 26.2% of its maximum approved treatment capacity of 36.4 ML/day.



Brockville Drinking Water System Annual Water Quality Report 2022

Maximum Permitted Water Taking (PTTW) – WTP

Condition:	Maximum Permitted Water Taking
Maximum Amount of Water Taken per Minute	25,278 (L/min)
Maximum Amount of Water Taken per Day	36.4 (ML/d)

The Permit to Take Water specifies the maximum flow into individual treatment systems as indicated below.

Maximum Flow to Treatment System – WTP

Treatment System/Stage:	Maximum Flow Rate (ML/d)
GAC Filters – Flow	19.6 each
UV Disinfection System	36.4 each

The summary of the volume of water taken daily and the flows of the water supplied during the 2022 calendar year is provided in **Appendix C** and includes 2022 flow data and historical flow of past years of pumping at the WTP.

The historical total plant distributed volume is also displayed in **Appendix C**. The total annual plant distributed volume for 2022 is 9.27% less than the total annual plant distributed volume from 2021. This information is provided for interest and to evaluate the treatment system trends over time in order to prepare for any future improvements required to meet this demand.

4.3 Adverse Water Quality Incident (AWQI) Test Results

In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents were provided to the Medical Officer of Health (MOH) and the Spills Action Centre (SAC). In 2022 there were no Adverse Water Quality Incidents to report.

AWQI Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A



Brockville Drinking Water System Annual Water Quality Report 2022

4.4 Operator Certification

The *Certification of Drinking-Water System Operators and Water Quality Analysts* (O. Reg. 128/04) requires owners to ensure that every operator employed in the facility holds a Licence applicable to that type of facility. All operators in the Water Systems Division hold the required certifications for treatment and distribution.

4.5 Capital Program

The 2022 Capital Program can be found in **Appendix B** of this Report. All works are subject to the annual budget process and approval by Council. A 30 Year Capital Replacement Equipment Plan has been developed that includes an extensive breakdown of all capital equipment that requires allocated funds for refurbishment or replacement. This is not included in the Annual Summary Report but can be made available upon request.



Brockville Drinking Water System Annual Water Quality Report 2022

5. TOWNSHIP OF ELIZABEHTOWN-KITLEY WATER DISTRIBUTION SYSTEM

5.1 Water System Description

The City of Brockville provides treated water from its Water Treatment Plant to the Elizabethtown-Kitley Class I Water Distribution System (Certificate# 3536) west of the City. This is facilitated through a 14 kilometer water main that extends along County Road #2 to the Country Club, through a meter chamber and associated appurtenances. This distribution system services approximately 350 residential customers. This system was installed in 1998 by the Ministry of Transportation and the Ontario Clean Water Agency and turned over to the Township of Elizabethtown-Kitley in 1999.

A booster station at Lily Bay provides for increased pressure only. The Township Fire Department is aware of this operational constraint and does not use the distribution system for firefighting or training purposes. An automated flushing station at the end of the service line is required to maintain free chlorine residual above the regulated minimum level of 0.20 mg/L. City Staff operate and maintain this system on behalf of the Township as the Operating Authority.

Township of Elizabethtown-Kitley

Drinking-Water System Number:	260007777
Drinking-Water System Name:	Elizabethtown-Kitley Distribution System
Drinking-Water System Owner:	Township of Elizabethtown-Kitley
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	257-101
Drinking Water Works Permit:	257-201
Drinking-Water System Category:	Large Municipal Class 1
Water Source:	City of Brockville DWS
Population Served:	350

5.2 Adverse Water Quality Incident (AWQI) Test Results

No adverse water quality incidents reported to SAC in 2022 for the Township of Elizabethtown-Kitley Water Distribution System.



Brockville Drinking Water System Annual Water Quality Report 2022

5.3 Historical Flow Results

A summary of the volume of water taken daily and the flows of the water supplied during the 2022 calendar year is provided in **Appendix C**.

The historical flow is also displayed in **Appendix C**. The total flow for 2022 is 24.93% more than the total flow from 2021. This information is provided for interest and to evaluate the system flow trends over time to prepare for any future improvements required to meet this demand.

6. CONCLUSION

The City of Brockville serves approximately 22,000 residents and about 350 residents in the Township of Elizabethtown-Kitley. One of the City's most important responsibilities is to protect public health by providing its residents with clean, safe drinking water. Routine water quality testing and continuous monitoring of the water quality and quantity is completed by City Staff at the Water Treatment Plant and throughout the distribution systems to demonstrate that the City consistently meets or exceeds the standards set by the MECP.

In Ontario, water taking, treatment and distribution are governed by several Acts and Regulations. This report fulfills the reporting requirements of the Drinking Water System Regulation (O. Reg. 170/03) made under the Safe Drinking Water Act for all of the municipal drinking water treatment systems in the City of Brockville and the Township of Elizabethtown-Kitley and covers the period from January 1st to December 31st 2022. As required under this same regulation, the report is prepared prior to March 31st and is filed for review by both the City of Brockville's and Elizabethtown-Kitley's municipal council. Copies of the report are also on hand at the Public Library, the Customer Service Office at City Hall, the Water Treatment Plant at 20 Rivers Avenue, Brockville and the Township of Elizabethtown-Kitley's Municipal Office at 6544 New Dublin Road, Addison.

The contents of this report highlight the requirements of the Safe Drinking Water Act, the regulations, and the systems' approval including any reportable events and the corresponding corrective actions undertaken in 2022. In addition, the report also includes a summary of the quantities and flow rates of the water supplied during the calendar year, including monthly averages, maximum daily flows, and daily instantaneous peak flow rates. The summaries are compared to the rated capacity and flow rates in the system approvals.

The Water Systems Division has taken all necessary steps to comply with all regulatory requirements in the production and distribution of safe drinking water and to conform to the requirements of implementing and maintaining a Drinking Water Quality Management System. The dedication and commitment of all Water Systems Staff ensures a safe reliable drinking water supply to consumers of the City of Brockville and a portion of the Township of Elizabethtown-Kitley.

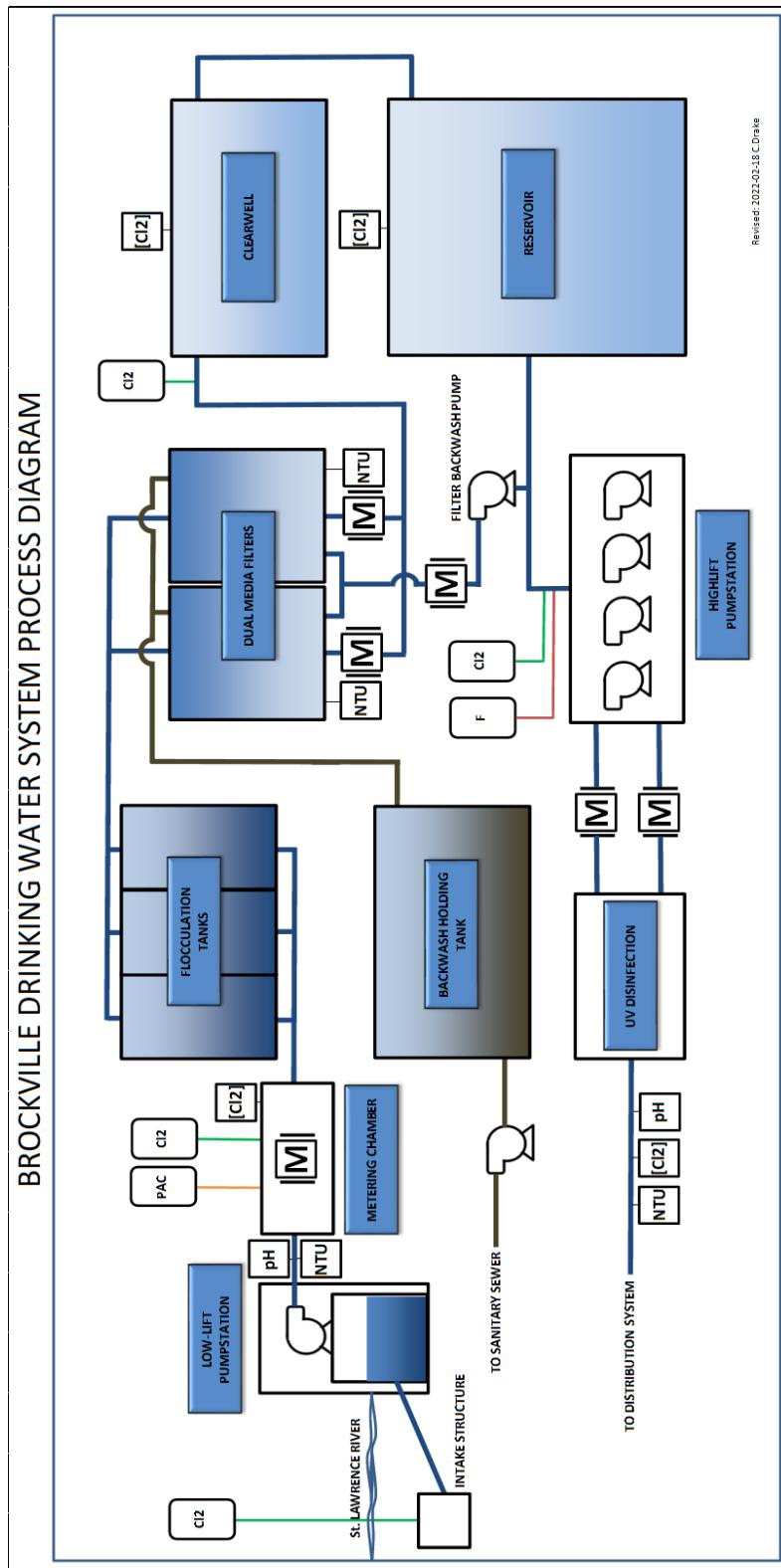


Brockville Drinking Water System Annual Water Quality Report 2022

7. KEY CONTACTS

Peter Raabe, P. Eng.
Director of Engineering and Infrastructure
Phone: 613-342-8772 ext. 3257
Fax: 613-342-5035
Email: praabe@brockville.com

Appendix A



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Appendix B

2022 PROPOSED CAPITAL PROGRAM

<u>PROJECT NAME:</u>	Water Equipment/Construction - Proposed Maintenance and New Capital			<u>YEAR PROPOSED</u>	2022
<u>LOCATION:</u>	Brockville Water Treatment Plant, Distribution System, Trunk Distribution System and Booster Stations				
<u>SCOPE:</u>	Provides for the capital needs of the Water Treatment Plant, Distribution System, Trunk Distribution System and Booster Stations. Funding is provided through water revenues.				
PROJECT ID:	Priority	GL	CC		Budget
WATER SYSTEMS – PROPOSED CAPITAL PROJECTS					
	1			Filter Media Replacment (GAC)	250,000
	2			Rehabilitation of Perth Street Elevated Water Storage Tower	64,248
	3			Reservoir Inspections and Cleaning	25,000
	4			Garden Street Reconstruction	180,000
	5			Repair to WTP steps and walking path	25,000
					544,248

PREPARED BY (PROJECT MANAGER):
DATE:

Craig Drake
 07-Sep-21

Appendix C

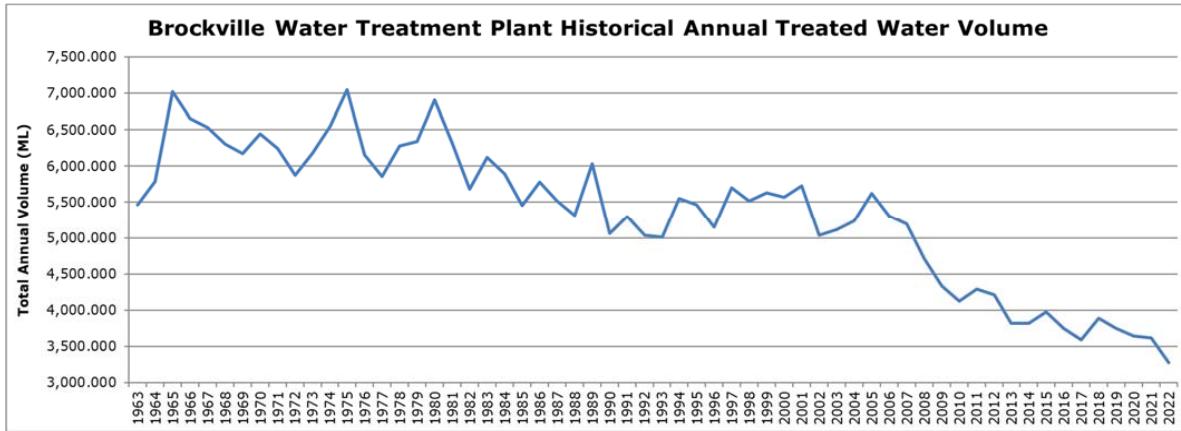
BROCKVILLE WATER SYSTEMS ANNUAL TREATED WATER VOLUME REPORT 2022

<u>Month</u>	<u>WTP Raw Avg Daily Volume (ML)</u>	<u>WTP Raw Max Daily Volume (ML)</u>	<u>WTP Raw Peak Flow (ML/day)</u>	<u>WTP Raw Total Monthly Volume (ML)</u>	<u>WTP Treated Avg Daily Volume (ML)</u>	<u>WTP Treated Max Daily Volume (ML)</u>	<u>Rated Capacity (ML/day)</u>	<u>Rated Flow Capacity (%)</u>	<u>WTP Treated Total Monthly Volume (ML)</u>
January	9.621	11.190	17.646	298.253	9.010	10.596	36.400	30.7%	279.325
February	9.421	9.908	20.102	263.792	8.764	9.299	36.400	27.2%	245.399
March	9.267	9.784	18.201	287.277	8.589	9.116	36.400	26.7%	266.245
April	9.102	9.978	17.133	273.059	8.419	9.052	36.400	27.4%	252.557
May	9.950	11.025	16.293	308.456	9.372	10.530	36.400	30.3%	290.522
June	10.133	11.162	17.877	303.989	9.561	10.626	36.400	30.7%	286.836
July	10.674	11.745	18.985	330.879	10.075	11.134	36.400	32.3%	312.329
August	10.899	12.482	28.910	337.866	10.336	11.731	36.400	34.3%	320.419
September	9.676	10.892	22.494	290.273	9.196	10.379	36.400	29.9%	275.890
October	8.612	9.960	11.741	266.975	8.413	9.559	36.400	27.4%	260.802
November	8.508	9.587	17.206	255.235	8.042	9.163	36.400	26.3%	241.271
December	8.579	9.003	23.029	265.955	8.015	8.448	36.400	24.7%	248.479
TOTAL				3,482.009					3,280.074

BROCKVILLE WATER SYSTEMS HISTORICAL ANNUAL TREATED WATER VOLUMES

<u>Year</u>	<u>Annual Volume (ML)</u>	<u>Year</u>	<u>Annual Volume (ML)</u>
1963	5,468.128	1994	5,548.256
1964	5,792.558	1995	5,467.001
1965	7,026.093	1996	5,148.340
1966	6,652.020	1997	5,698.474
1967	6,531.729	1998	5,519.157
1968	6,302.901	1999	5,631.225
1969	6,174.018	2000	5,565.808
1970	6,447.978	2001	5,726.410
1971	6,246.122	2002	5,032.500
1972	5,876.886	2003	5,117.740
1973	6,179.755	2004	5,238.190
1974	6,552.608	2005	5,625.869
1975	7,049.823	2006	5,308.800
1976	6,157.384	2007	5,189.831
1977	5,862.139	2008	4,715.116
1978	6,283.413	2009	4,332.102
1979	6,340.110	2010	4,128.747
1980	6,905.996	2011	4,291.115
1981	6,324.999	2012	4,213.592
1982	5,685.995	2013	3,815.746
1983	6,119.997	2014	3,822.724
1984	5,894.998	2015	3,972.362
1985	5,451.999	2016	3,744.720
1986	5,780.998	2017	3,595.184
1987	5,515.998	2018	3,889.242
1988	5,319.997	2019	3,753.200
1989	6,034.455	2020	3,641.936
1990	5,064.771	2021	3,615.261
1991	5,297.094	2022	3,280.074
1992	5,037.999		
1993	5,013.019		

Appendix C

ELIZABETHTOWN-KITLEY WATER DISTRIBUTION ANNUAL TREATED WATER VOLUME REPORT 2022

<u>Month</u>	<u>Avg Daily Volume (m3)</u>	<u>Max Daily Volume (m3)</u>	<u>Max Flow (L/min)</u>	<u>Total Volume (m3)</u>
January	170	195	1,147	5,277
February*	224	332	2,834	6,277
March*	237	291	2,835	7,359
April	241	295	1,049	7,224
May	246	306	2,836	7,616
June	208	269	632	6,234
July	210	279	621	6,515
August	221	275	638	6,842
September	204	230	649	6,132
October	172	218	624	5,320
November**	164	192	1,681	4,924
December**	164	164	477	5,084
TOTAL				74,804

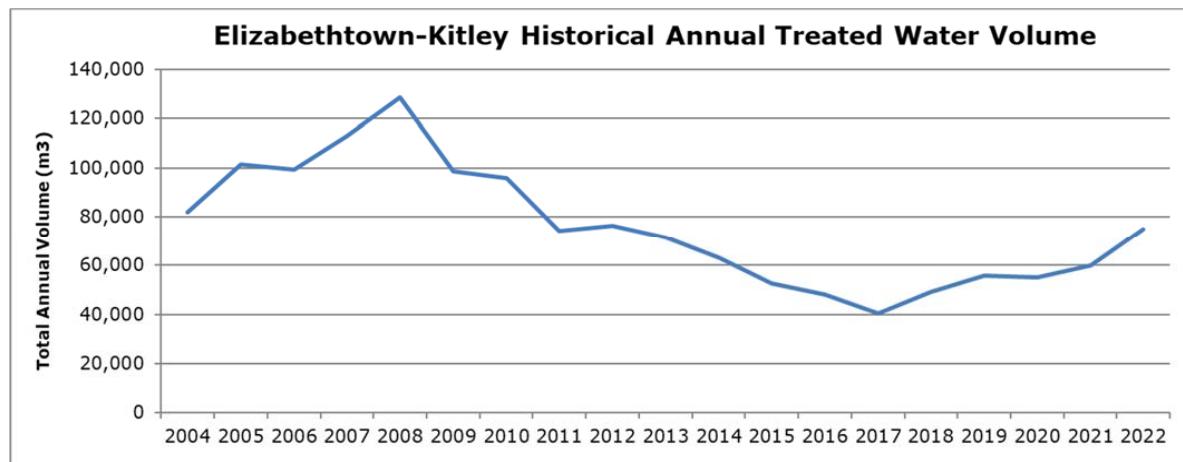
Note: * The Elizabethtown-Kitley flow meter located at the Country Club Metering Chamber flooded in February/March 2022 which damaged the flow meter. A new meter was ordered and installed. As a result, flow values were estimated during this period.

Note: ** The Elizabethtown-Kitley flow meter motherboard broke November 28, 2022. Flows were estimated based on November data.

Appendix C

ELIZABETHTOWN- KITLEY WATER DISTRIBUTION HISTORICAL ANNUAL TREATED WATER VOLUME

Year	Total Annual Volume (m ³)	Year	Total Annual Volume (m ³)
2004	81,913	2014	62,873
2005	101,402	2015	52,646
2006	99,254	2016	47,965
2007	113,068	2017	40,185
2008	128,460	2018	49,216
2009	98,782	2019	55,753
2010	95,876	2020	54,968
2011	74,052	2021	59,876
2012	76,372	2022	74,804
2013	71,552		



Appendix D

**2022 WATER LOSS REPORT**

WATER TREATMENT PLANT - DISTRIBUTION TOTAL		3,280,074 m³
Water Sold to Customers		
Residential		1,283,793 m ³
Industrial		1,458,620 m ³
Sales to Elizabethtown-Kitley (East of Brockville, BCC)		42,902 m ³
Sales to Elizabethtown-Kitley (West of Brockville)		41,306 m ³
TOTAL BILLED WATER		2,826,621 m³
Total Non-Revenue Water (NRW)		453,453 m³
		13.82 %
NRW Sources Accounted For		
Flat Rate Water Users		44,100 m ³
Industrial Fire Flow Testing		5,000 m ³
Chlorinator Flow/Mechanical Seals		18,355 m ³
Watermain Breaks/Service Leaks		70,428 m ³
Anti-Freeze Taps		58,658 m ³
Fire Fighting and Training		4,832 m ³
Hydrant Fire Flow Testing and Flushing		2,222 m ³
Flushing Stations		158,122 m ³
Parks and Recreation Water Use		11,085 m ³
TOTAL		372,802 m³
		11.37 %
TOTAL Unaccounted NRW		80,651 m³
		2.46 %

Last Reviewed: Feb 13, 2023
By: S. Allen

Appendix E

**2022 WATER LOSS REPORT**

TOTAL METERED WATER	74,804 m³
TOTAL BILLED WATER	84,208 m³
Total Non-Revenue Water (NRW)	9,404 m³ 12.57 %
NRW Sources Accounted For	
Watermain Breaks	1,228 m ³
Hydrant Fire Flow Testing	901 m ³
Flushing Stations	2,436 m ³
TOTAL	4,565 m³ 6.1%
TOTAL LOST WATER	4,839 m³ 6.47 %

Last Reviewed: February 27, 2023
By: S. Allen

BROCKVILLE DRINKING WATER SYSTEM



BROCKVILLE
CITY OF THE 1000 ISLANDS

2022 ANNUAL WATER QUALITY REPORT

P. Raabe, P. Eng., Director of Engineering and Infrastructure

DATE: February 27, 2023

EXECUTIVE SUMMARY

The City of Brockville's Water Systems Division is pleased to provide the 2022 Annual Drinking Water Quality Report. The purpose of this report is to keep the public and Council informed regarding the quality of the City's drinking water and the performance and maintenance of our water treatment and distribution systems.

The City of Brockville is dedicated to delivering a clean, safe, reliable, drinking water supply to the consumer while remaining compliant with all regulatory requirements. Achievement of those commitments is supported by risk-based process evaluation, staff competency, effective communications, and appropriate contingency / incident response measures. The managers and employees of the City of Brockville who are directly involved in the production and delivery of safe drinking water are committed to and share in the responsibilities for implementing, maintaining, and contributing to the continual improvement of the Drinking Water Quality Management System. The water delivered to the consumers in the City of Brockville and a portion in the Township of Elizabethtown-Kitley continues to be safe, meeting all drinking water quality regulatory standards.

This Annual Drinking Water Quality Report is prepared in accordance with the Municipal Drinking Water Licence, Drinking Water Works Permit for the Brockville Drinking Water System and Ontario Regulation 170/03, Section 11 and Schedule 22. Included with this report are analytical data, plant flow, adverse water quality incidents and corrective action resolutions, as well as a process flow schematic of the facility.

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LIST OF ACRONYMS & DEFINITIONS

AWQI	Adverse Water Quality Incidents
	Examples of adverse water results:
	<ul style="list-style-type: none">▪ An analytical result that exceeds a health-based water quality standards▪ Any evidence that disinfection may not have been effective▪ Low chlorine residuals
C of A	Certificate of Approval
CFU	colony forming units
CGSB	Canadian General Standards Board
DWQMS	Drinking Water Quality Management Standard
GUDI	groundwater under the direct influence of surface water
L/s	litres per second
m ³ /d	cubic metres per day
mg/L	milligrams per litre
mL	milliliter
ML/d	Mega (million) litres per day
MECP	Ministry of the Environment, Conservation and Parks (Ontario)
MOH	Medical Officer of Health
PVC	Poly Vinyl Chloride
O. Reg.	Ontario Regulation
PTTW	Permit to Take Water
R.R.O.	Revised Regulations Ontario (1990)
SCADA	Supervisory Control and Data Acquisition
SDWA	Safe Drinking Water Act, 2002
WTP	Water Treatment Plant

1. INTRODUCTION

This Annual Water Quality Report is for the period from January 1st to December 31st, 2022 and includes reporting for both the municipal drinking water treatment and distribution systems that the City of Brockville owns and operates and the water distribution system that the Township of Elizabethtown-Kitley owns and the City of Brockville operates.

This report contains three different reports required for the City of Brockville and the Elizabethtown-Kitley Drinking Water Systems:

- Section 11 Annual Report, as per Section 11 of O. Reg. 170/03
- Summary report as per Schedule 22 of O. Reg. 170/03
- Summary of the raw water values that were submitted to the Ministry of the Environment, Conservation and Parks under O. Reg. 387/04 Water Taking & Transfer

This annual report is available to the public at no charge. Users of this drinking water system have been notified that this annual report is available by placing a notice on the City of Brockville's website and water billing inserts. The 2022 Annual Water Quality Report is available at the following locations:

- City of Brockville's website - www.brockville.com
- City of Brockville – Public Library
- City of Brockville – Customer Service office, City Hall
- City of Brockville – Water Systems Division, 20 Rivers Ave., 613-342-8772 ext. 5512
- Township of Elizabethtown-Kitley's website - <http://www.ektwp.ca>
- Township of Elizabethtown-Kitley's Municipal Office – 6544 New Dublin Road, Addison

2. LEGISLATED REQUIREMENTS

2.1 Drinking-Water Systems Regulation (O. Reg. 170/03)

Under Schedule 22 of the Drinking Water Systems Regulation (O. Reg. 170/03), Summary Reports for Municipalities, annual reports to the owners of large municipal residential systems and small municipal systems are required. The summary report must be submitted no later than March 31st to members of municipal council. The contents must list the requirements of the *Safe Drinking Water Act, 2002*, the regulations, the system's approval and any order that the system failed to meet at any time during the reporting period covered, specify the duration of the failure, and the measures taken to correct the failure.

In addition, the report must include a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly averages, maximum daily flows and daily instantaneous peak flows. The summary must be compared to the rated capacity and flows provided in the system's Municipal Drinking Water Licence.

The City of Brockville is the Owner of the Water Treatment Plant, trunk and local water distribution systems, and the City of Brockville is the Operating Authority for the Township of Elizabethtown-Kitley's water distribution system.

2.2 Summary of Regulatory Requirements

Acts and Regulations

Regulated systems must meet the requirements of Ontario's *Safe Drinking Water Act, 2002* and its regulations. Most notably, the Drinking Water Systems Regulation sets out treatment and testing requirements for all categories of regulated water systems, including small non-municipal and seasonal operations.

Safe Drinking Water Act, 2002

In the Part Two Report of the Walkerton Inquiry, Justice O'Connor recommended that the Ontario government enact a *Safe Drinking Water Act, 2002* to deal with matters related to treatment and distribution of drinking water. As articulated by Justice O'Connor, the purpose of the *Safe Drinking Water Act, 2002* is to gather in one place all legislation and regulations relating to the treatment and distribution of drinking water.

Summary of Provincial Legislation Significant to Water Operations

ACT	O. Reg.
WATER OPPORTUNITIES and WATER CONSERVATION ACT	
➤ Water Opportunities and Water Conservation Act, 2010	Bill 72
CLEAN WATER ACT, 2006	
➤ Source Protection Areas and Regions	O. Reg. 284/10
➤ Source Protection Committees	O. Reg. 288/10
➤ Terms of Reference	O. Reg. 287/07
SAFE DRINKING WATER ACT, 2002	
➤ Drinking Water Systems Regulation	O. Reg. 170/03
➤ Certification of Drinking-Water System Operators and Water Quality Analysts	O. Reg. 128/04
➤ Drinking Water Testing Services - relating to laboratory licensing	O. Reg. 248/03
➤ Schools, private schools and day nurseries	O. Reg. 243/07
➤ Compliance and Enforcement Regulation	O. Reg. 242/05

Brockville Drinking Water System Annual Water Quality Report 2022

SAFE DRINKING WATER ACT, 2002 Continued	
➤ Ontario Drinking Water Quality Standards	O. Reg. 169/03
➤ Definitions of Words and Expressions Used in the Act	O. Reg. 171/03
➤ Definition of Deficiency and Municipal Drinking Water System	O. Reg. 172/03
➤ Licensing of Municipal Drinking-Water Systems	O. Reg. 188/07
➤ Financial Plans	O. Reg. 453/07
ONTARIO WATER RESOURCES ACT	
➤ Licensing of Sewage Works Operators	O. Reg. 129/04
➤ Approval Exemption	O. Reg. 525/98
➤ Wells	R.R.O. 1990, Reg. 903
➤ Revoking Ontario Regulation 459/00	O. Reg. 175/03
➤ Revoking Ontario Regulation 505/01	O. Reg. 176/03
➤ Water Taking	O. Reg. 387/04
➤ Charges for Industrial and Commercial Water Users	O. Reg. 450/07
ENVIRONMENTAL PROTECTION ACT	
➤ Certificate of Approval Exemptions - Air	O. Reg. 524/98
ENVIRONMENTAL BILL OF RIGHTS ACT	
➤ Prescribing the Safe Drinking Water Act, 2002	O. Reg. 257/03

3. ANNUAL WATER QUALITY SUMMARY FOR 2022

The City of Brockville's Water Systems Division is responsible for the Brockville Drinking Water System under O. Reg. 170/03 including water treatment plant, trunk water distribution system (elevated storage, reservoirs, booster stations) and local water distribution systems. Staff's primary responsibility is water treatment and distribution in compliance with all applicable legislation and municipal drinking water licenses and drinking water works permits. Routine water quality testing and continuous monitoring of water quality and quantity is conducted to ensure compliance. All data from SCADA, process control point data, in-house laboratory results and external laboratory results are all captured in a WaterTrax data management system.

3.1 Water Quality Data

Raw and treated water is sampled and tested for chemical, physical and microbiological parameters in accordance with the requirements of O. Reg. 170/03 and individual municipal licenses and permits. Sampling is also conducted in the distribution system primarily for bacteriological indicators and evidence of sustained chlorine residuals. Enhanced sampling programs are also defined by the Water Systems Division, and testing procedures followed and where necessary submitted to external accredited laboratory for analysis. This level of water quality monitoring ensures public health and public confidence in the water supply.

The majority of analysis is conducted by an external accredited laboratory, with some specialized analysis contracted to other accredited laboratories. In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents are provided to the Spills Action Centre and Medical Officer of Health.

Operational Testing:

The following table is a summary of the operational testing completed in 2022 (as per O. Reg. 170/03, Schedules 6 and 7).

Parameter	# of Grab Samples	Results		
		MIN	MAX	AVG
Turbidity – Raw (NTU)	Continuous monitoring	0.10	9.99	0.42
Turbidity – Filter 1 (NTU)	Continuous monitoring	0.00	0.17	0.06
Turbidity – Filter 2 (NTU)	Continuous monitoring	0.00	0.55	0.08
Turbidity – Treated (NTU)	Continuous monitoring	0.03	6.94	0.07
Chlorine – Pre Filter (mg/l)	Continuous monitoring	0.00	1.45	0.33
Chlorine – Reservoir (Main Plant) (mg/l)	Continuous monitoring	1.60	2.71	2.05
Chlorine – Plant Effluent (mg/l)	Continuous monitoring	0.59	2.80	2.05
Chlorine – Distribution System Parkedale Reservoir (mg/l)	Continuous monitoring	1.06	2.50	1.77
Chlorine – Elizabethtown-Kitley Distribution System (mg/l)	52	0.89	1.85	1.37
Fluoride – Plant Effluent (mg/l)	365	0.18	1.20	0.50
UV Dosage (mJ/cm ²)	Continuous monitoring	0	3277	2
UV Intensity (mW/cm ²)	Continuous monitoring	0	0	n/a
UV Transmittance (%)	366	93.5	100	96.9

Microbiological Testing:

Microbiological testing completed under the Schedule 10, 11 or 12 of O. Reg. 170/03 during 2022 reporting period.

Sample Description:	Number of Samples	Range of E. Coli Or Fecal Results CFU/100ml		Range of Total Coliform Results CFU/100ml		Number of HPC Samples	Range of HPC Results CFU/ml	
		MIN	MAX	MIN	MAX		MIN	MAX
Raw	52	0	22	0	197	52	<10	>2000
Treated	53	0	0	0	0	53	<1	800
Distribution	513	0	0	0	0	358	<1	40

Chemical Testing:

The following Tables are a summary of the chemical testing completed in 2022 (as per O. Reg. 170/03, Schedule 13).

Schedule 23
Summary of Inorganic parameters tested during this reporting period or the most recent sample results:

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Antimony	2022-01-11	0.0001	mg/l	No	No
Arsenic	2022-01-11	0.0006	mg/l	No	No
Barium	2022-01-11	0.023	mg/l	No	No
Boron	2022-01-11	0.020	mg/l	No	No
Cadmium	2022-01-11	<0.000015	mg/l	No	No
Chromium	2022-01-11	<0.002	mg/l	No	No
Mercury	2022-01-11	<0.00002	mg/l	No	No
Selenium	2022-01-11	<0.001	mg/l	No	No
Sodium	Jan. – Dec. (12 samples)	14.3*	mg/l	No	n/a
Uranium	2022-01-11	0.00028	mg/l	No	No
Nitrite	Quarterly (4 samples)	<0.1*	mg/l	No	No
Nitrate	Quarterly (4 samples)	0.3*	mg/l	No	No

*average

n/a – not applicable

Schedule 24
Summary of Organic parameters sampled during this reporting period or the most recent sample results:

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Alachlor	2022-01-11	<0.3	ug/l	No	No
Atrazine + N-dealkylated metabolites	2022-01-11	<0.5	ug/l	No	No
Azinphos-methyl	2022-01-11	<1	ug/l	No	No
Benzene	2022-01-11	<0.5	ug/l	No	No
Benzo(a)pyrene	2022-01-11	<0.006	ug/l	No	No
Bromoxynil	2022-01-11	<0.5	ug/l	No	No
Carbaryl	2022-01-11	<3	ug/l	No	No
Carbofuran	2022-01-11	<1	ug/l	No	No
Carbon Tetrachloride	2022-01-11	<0.2	ug/l	No	No
Chlorpyrifos	2022-01-11	<0.5	ug/l	No	No
Diazinon	2022-01-11	<1	ug/l	No	No
Dicamba	2022-01-11	<1	ug/l	No	No
1,2-Dichlorobenzene	2022-01-11	<0.5	ug/l	No	No
1,4-Dichlorobenzene	2022-01-11	<0.5	ug/l	No	No
1,2-Dichloroethane	2022-01-11	<0.5	ug/l	No	No
1,1-Dichloroethylene	2022-01-11	<0.5	ug/l	No	No
Dichloromethane	2022-01-11	<5	ug/l	No	No
2-4 Dichlorophenol	2022-01-11	<0.2	ug/l	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2022-01-11	<1	ug/l	No	No
Diclofop-methyl	2022-01-11	<0.9	ug/l	No	No
Dimethoate	2022-01-11	<1	ug/l	No	No
Diquat	2022-01-11	<5	ug/l	No	No
Diuron	2022-01-11	<5	ug/l	No	No
Glyphosate	2022-01-11	<25	ug/l	No	No
Malathion	2022-01-11	<5	ug/l	No	No
2-Methyl-4-Chlorophenoxyacetic acid (MCPA)	2022-01-11	<10	mg/l	No	No

Brockville Drinking Water System Annual Water Quality Report 2022

Parameter	Sample Date	Result Value	Unit of Measure	Exceeded the Standard	Exceeded Half the Standard
Metolachlor	2022-01-11	<3	ug/l	No	No
Metribuzin	2022-01-11	<3	ug/l	No	No
Monochlorobenzene	2022-01-11	<0.5	ug/l	No	No
Paraquat	2022-01-11	<1	ug/l	No	No
Pentachlorophenol	2022-01-11	<0.2	ug/l	No	No
Phorate	2022-01-11	<0.3	ug/l	No	No
Picloram	2022-01-11	<5	ug/l	No	No
Polychlorinated Biphenyls(PCB)	2022-01-11	<0.05	ug/l	No	No
Prometryne	2022-01-11	<0.1	ug/l	No	No
Simazine	2022-01-11	<0.5	ug/l	No	No
THM (NOTE: shows latest annual average)	Quarterly (min) (4 samples)	30.0*	ug/l	No	No
HAA's (NOTE: shows latest annual average)	Quarterly (min) (4 samples)	19.1*	ug/l	No	No
Terbufos	2022-01-11	<0.5	ug/l	No	No
Tetrachloroethylene	2022-01-11	<0.5	ug/l	No	No
2,3,4,6-Tetrachlorophenol	2022-01-11	<0.2	ug/l	No	No
Triallate	2022-01-11	<10	ug/l	No	No
Trichloroethylene	2022-01-11	<0.5	ug/l	No	No
2,4,6-Trichlorophenol	2022-01-11	<0.2	ug/l	No	No
Trifluralin	2022-01-11	<0.5	ug/l	No	No
Vinyl Chloride	2022-01-11	<0.2	ug/l	No	No

*average

LEAD SAMPLING:

Brockville Drinking Water System (Lead Sampling Exemption for plumbing only)

Sampling Period – Winter (December 15 th to April 15 th)	Plumbing	Distribution
Number of individual samples	N/A	4
Number of sample points (locations)	N/A	4
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A

Sampling Period - Summer (June 15 th to October 15 th)	Plumbing	Distribution
Number of individual samples	N/A	4
Number of sample points (locations)	N/A	4
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A

Brockville Drinking Water System Annual Water Quality Report 2022

Elizabethtown-Kitley Distribution System (Lead Sampling Exemption for plumbing only)

Sampling Period – Winter (December 15th to April 15th)	Plumbing	Distribution
Number of individual samples	(Lead Sampling Regulatory Relief)	2
Number of sample points (locations)	N/A	2
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A

Sampling Period - Summer (June 15th to October 15th)	Plumbing	Distribution
Number of individual samples	(Lead Sampling Regulatory Relief)	2
Number of sample points (locations)	N/A	2
Number of individual sample exceedances	N/A	0
Number of sample points with an exceedance during the period	N/A	0
Percentage of sample points with an exceedance	N/A	0
Is the system required to have a Corrosion Control Plan prepared?	NO	NO
Do the reduced sampling & frequency requirements apply to the system?	N/A	YES
Do the plumbing sample exemptions apply to the system?	YES	N/A

4. BROCKVILLE DRINKING WATER SYSTEM

4.1 Water System Description

Drinking-Water System Number:	220001263
Drinking-Water System Name:	Brockville Drinking Water System
Drinking-Water System Owner:	City of Brockville
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	152-101
Drinking Water Works Permit:	152-201
Permit To Take Water:	8577-5ZCP45
Drinking-Water System Category:	Large Municipal
Design Capacity:	36.4 ML/D
Treatment:	Direct Filtration Class III
Local Distribution:	Class II
Trunk Distribution:	Class III
Source Water:	St Lawrence River
Population Served:	22,000

Connected Drinking-Water Systems:

Drinking-Water System Number:	260007777
Drinking-Water System Name:	Elizabethtown-Kitley Distribution System
Drinking-Water System Owner:	Township of Elizabethtown-Kitley
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	257-101
Drinking Water Works Permit:	257-201
Drinking-Water System Category:	Large Municipal Class I
Water Source:	City of Brockville DWS
Population Served:	350

4.1.1 Water Treatment Plant

The City of Brockville's Water Treatment Plant is a Class III direct filtration facility located at 20 Rivers Avenue, located on the St. Lawrence River and serves the City of Brockville (population 22,000), and a portion of the Township of Elizabethtown-Kitley (population 350).

A 900 mm raw water intake pipe equipped with zebra mussel control lies on the bottom of the St. Lawrence River extending 300 meters offshore at a depth of 10.5 meters. The treatment process has a design maximum flow rate of 36.4 ML/d and is composed of a number of sub-units:

- low lift pumping station
- coagulation and flocculation using polyaluminum chloride (PAC)
- pre- and post-filter disinfection with chlorine gas
- two granular activated carbon filters
- fluoride addition
- treated water reservoir and high lift pumping station
- final treated water UV disinfection and additional chlorination

4.1.2 Treatment Chemicals Used

All chemicals used in the operation of the drinking water system meets all applicable standards set by both the American Water Works Association ("AWWA") and the American National Standards Institute ("ANSI") safety criteria standards NSF/60 and NSF/61

Chemical	Application	Supplier
Chlorine Gas	Pre Filter, Post Filter, Plant Effluent (Primary Disinfection)	Brenntag Canada
Poly Aluminum Chloride XL-6 (SternPAC) PAX XL-1900 (ACH)	Pre Filter (Coagulant)	Kemira Water Solutions
Hydrofluorosilicic acid (HFSA)	Plant Effluent (Fluoride)	Brenntag Canada

4.1.3 Water Distribution System – Trunk and Local Systems

The Water Distribution System is separated into a Class III Trunk Water Distribution System (Certificate #3811) and a Class II Local Water Distribution System (Certificate #2193).

The distribution is comprised of 3 distinct pressure zones and consists of underground pipes ranging in size from 100 mm to 600 mm in diameter, made of a variety of materials including cast iron, ductile iron, poly vinyl chloride (PVC), concrete, steel, high density polyethylene (HDPE), and asbestos cement. There are approximately 8,400 service connections, 940 fire hydrants and 2,800 valves. Several treated water storage facilities and booster stations are located throughout the system as indicated below.

➤ Trunk Feeder Main & Local Distribution Systems

600 mm single trunk feeder main from the WTP to the Church Street/Perth Street area where flow splits between the Water Tower and the Local and Trunk distribution systems.

➤ Water Booster Stations

There are three (3) booster pump stations (First Avenue., Sunset Boulevard., Parkedale Avenue.) within the distribution system. These booster stations utilize pumps to ensure consistent pressure throughout the system.

➤ Perth Street Elevated Storage Tank (Water Tower)

The most visible feature of the distribution system is the 2,270 m³ (500,000 IG) elevated storage tank located on Perth St in Zone 1. It is a single cell, steel, non-baffled treated water storage tank.

➤ Parkedale Avenue Reservoir Booster Station

The Parkedale Avenue Reservoir Booster Station is a 7,600 m³ capacity reservoir at-grade, single cell, concrete, non-baffled, treated water reservoir. The station services two geographical areas. Zone 1 is the area South of Highway 401, and Zone 2 is the area North of Highway 401.

Zone 1 and Zone 2 booster stations are located on this site and assist in maintaining system pressures within the 2 zones.

➤ First Avenue Booster Station

The First Avenue Booster Station located on First Avenue services Zone 3. Zone 3 is defined by the boundary of First Avenue to the West, King Street East to the South, Broadway Avenue to the North, and Oxford Avenue to the East.

➤ Sunset Boulevard Booster Station

This booster station is located within a below grade pump chamber on Sunset Boulevard and provides consistent pressure locally to Sunset Boulevard and Hollywood Place

4.2 2022 Flow Summary

In 2022 the maximum or peak instantaneous raw water flow recorded was 28.910 ML/day (20,076 L/min) which occurred on August 17th, 2022 and was below the permitted maximum amount of 36.400 ML/day (25,278 L/min). The maximum volume of raw water taken on any single day was 12.482 ML which occurred on August 17th, 2022, and was also below the permitted maximum of 36.400 ML/d.

The annual average daily raw water volume to the WTP was 9.540 ML/day or 26.2% of its maximum approved treatment capacity of 36.4 ML/day.

Maximum Permitted Water Taking (PTTW) – WTP

Condition:	Maximum Permitted Water Taking
Maximum Amount of Water Taken per Minute	25,278 (L/min)
Maximum Amount of Water Taken per Day	36.4 (ML/d)

The Permit to Take Water specifies the maximum flow into individual treatment systems as indicated below.

Maximum Flow to Treatment System – WTP

Treatment System/Stage:	Maximum Flow Rate (ML/d)
GAC Filters – Flow	19.6 each
UV Disinfection System	36.4 each

The summary of the volume of water taken daily and the flows of the water supplied during the 2022 calendar year is provided in **Appendix C** and includes 2022 flow data and historical flow of past years of pumping at the WTP.

The historical total plant distributed volume is also displayed in **Appendix C**. The total annual plant distributed volume for 2022 is 9.27% less than the total annual plant distributed volume from 2021. This information is provided for interest and to evaluate the treatment system trends over time in order to prepare for any future improvements required to meet this demand.

4.3 Adverse Water Quality Incident (AWQI) Test Results

In accordance with Schedule 16 of O. Reg. 170/03, all required notifications of adverse water quality incidents were provided to the Medical Officer of Health (MOH) and the Spills Action Centre (SAC). In 2022 there were no Adverse Water Quality Incidents to report.

AWQI Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A

4.4 Operator Certification

The *Certification of Drinking-Water System Operators and Water Quality Analysts* (O. Reg. 128/04) requires owners to ensure that every operator employed in the facility holds a Licence applicable to that type of facility. All operators in the Water Systems Division hold the required certifications for treatment and distribution.

4.5 Capital Program

The 2022 Capital Program can be found in **Appendix B** of this Report. All works are subject to the annual budget process and approval by Council. A 30 Year Capital Replacement Equipment Plan has been developed that includes an extensive breakdown of all capital equipment that requires allocated funds for refurbishment or replacement. This is not included in the Annual Summary Report but can be made available upon request.

5. TOWNSHIP OF ELIZABETHTOWN-KITLEY WATER DISTRIBUTION SYSTEM

5.1 Water System Description

The City of Brockville provides treated water from its Water Treatment Plant to the Elizabethtown-Kitley Class I Water Distribution System (Certificate# 3536) west of the City. This is facilitated through a 14 kilometer water main that extends along County Road #2 to the Country Club, through a meter chamber and associated appurtenances. This distribution system services approximately 350 residential customers. This system was installed in 1998 by the Ministry of Transportation and the Ontario Clean Water Agency and turned over to the Township of Elizabethtown-Kitley in 1999.

A booster station at Lily Bay provides for increased pressure only. The Township Fire Department is aware of this operational constraint and does not use the distribution system for firefighting or training purposes. An automated flushing station at the end of the service line is required to maintain free chlorine residual above the regulated minimum level of 0.20 mg/L. City Staff operate and maintain this system on behalf of the Township as the Operating Authority.

Township of Elizabethtown-Kitley

Drinking-Water System Number:	260007777
Drinking-Water System Name:	Elizabethtown-Kitley Distribution System
Drinking-Water System Owner:	Township of Elizabethtown-Kitley
Accredited Operating Authority:	City of Brockville
Municipal Drinking Water Licence:	257-101
Drinking Water Works Permit:	257-201
Drinking-Water System Category:	Large Municipal Class 1
Water Source:	City of Brockville DWS
Population Served:	350

5.2 Adverse Water Quality Incident (AWQI) Test Results

No adverse water quality incidents reported to SAC in 2022 for the Township of Elizabethtown-Kitley Water Distribution System.

5.3 Historical Flow Results

A summary of the volume of water taken daily and the flows of the water supplied during the 2022 calendar year is provided in **Appendix C**.

The historical flow is also displayed in **Appendix C**. The total flow for 2022 is 24.93% more than the total flow from 2021. This information is provided for interest and to evaluate the system flow trends over time to prepare for any future improvements required to meet this demand.

6. CONCLUSION

The City of Brockville serves approximately 22,000 residents and about 350 residents in the Township of Elizabethtown-Kitley. One of the City's most important responsibilities is to protect public health by providing its residents with clean, safe drinking water. Routine water quality testing and continuous monitoring of the water quality and quantity is completed by City Staff at the Water Treatment Plant and throughout the distribution systems to demonstrate that the City consistently meets or exceeds the standards set by the MECP.

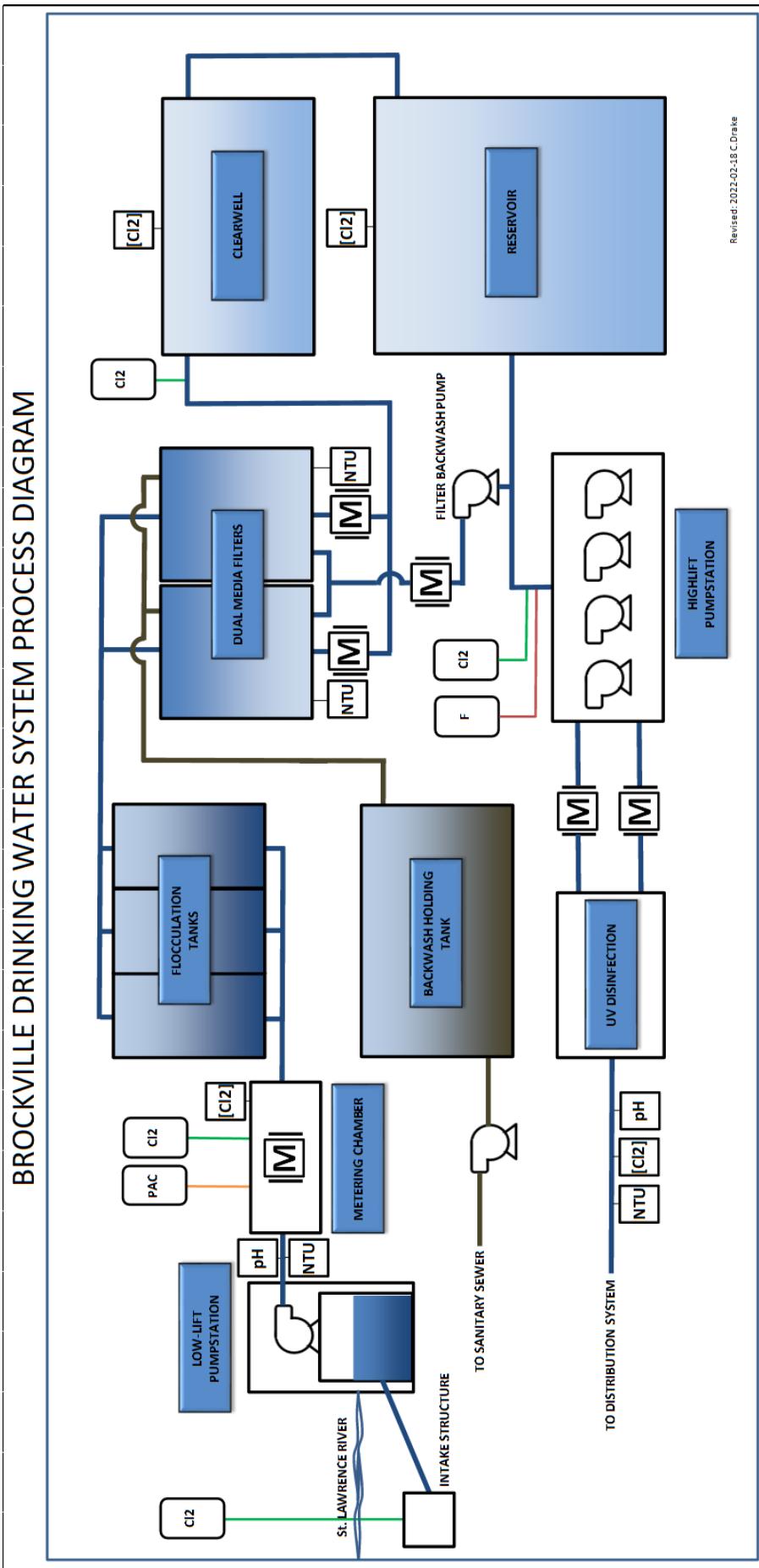
In Ontario, water taking, treatment and distribution are governed by several Acts and Regulations. This report fulfills the reporting requirements of the Drinking Water System Regulation (O. Reg. 170/03) made under the Safe Drinking Water Act for all of the municipal drinking water treatment systems in the City of Brockville and the Township of Elizabethtown-Kitley and covers the period from January 1st to December 31st 2022. As required under this same regulation, the report is prepared prior to March 31st and is filed for review by both the City of Brockville's and Elizabethtown-Kitley's municipal council. Copies of the report are also on hand at the Public Library, the Customer Service Office at City Hall, the Water Treatment Plant at 20 Rivers Avenue, Brockville and the Township of Elizabethtown-Kitley's Municipal Office at 6544 New Dublin Road, Addison.

The contents of this report highlight the requirements of the Safe Drinking Water Act, the regulations, and the systems' approval including any reportable events and the corresponding corrective actions undertaken in 2022. In addition, the report also includes a summary of the quantities and flow rates of the water supplied during the calendar year, including monthly averages, maximum daily flows, and daily instantaneous peak flow rates. The summaries are compared to the rated capacity and flow rates in the system approvals.

The Water Systems Division has taken all necessary steps to comply with all regulatory requirements in the production and distribution of safe drinking water and to conform to the requirements of implementing and maintaining a Drinking Water Quality Management System. The dedication and commitment of all Water Systems Staff ensures a safe reliable drinking water supply to consumers of the City of Brockville and a portion of the Township of Elizabethtown-Kitley.

7. KEY CONTACTS

Peter Raabe, P. Eng.
Director of Engineering and Infrastructure
Phone: 613-342-8772 ext. 3257
Fax: 613-342-5035
Email: praabe@brockville.com



Appendix B

2022 PROPOSED CAPITAL PROGRAM

<u>PROJECT NAME:</u>	Water Equipment/Construction - Proposed Maintenance and New Capital			<u>YEAR PROPOSED</u>	2022
<u>LOCATION:</u>	Brockville Water Treatment Plant, Distribution System, Trunk Distribution System and Booster Stations				
<u>SCOPE:</u>	Provides for the capital needs of the Water Treatment Plant, Distribution System, Trunk Distribution System and Booster Stations. Funding is provided through water revenues.				
PROJECT ID:	Priority	GL	CC		
				WATER SYSTEMS - PROPOSED CAPITAL PROJECTS	
	1			Filter Media Replacment (GAC)	250,000
	2			Rehabilitation of Perth Street Elevated Water Storage Tower	64,248
	3			Reservoir Inspections and Cleaning	25,000
	4			Garden Street Reconstruction	180,000
	5			Repair to WTP steps and walking path	25,000
					544,248

PREPARED BY (PROJECT MANAGER):

Craig Drake

DATE:

07-Sep-21

Appendix C

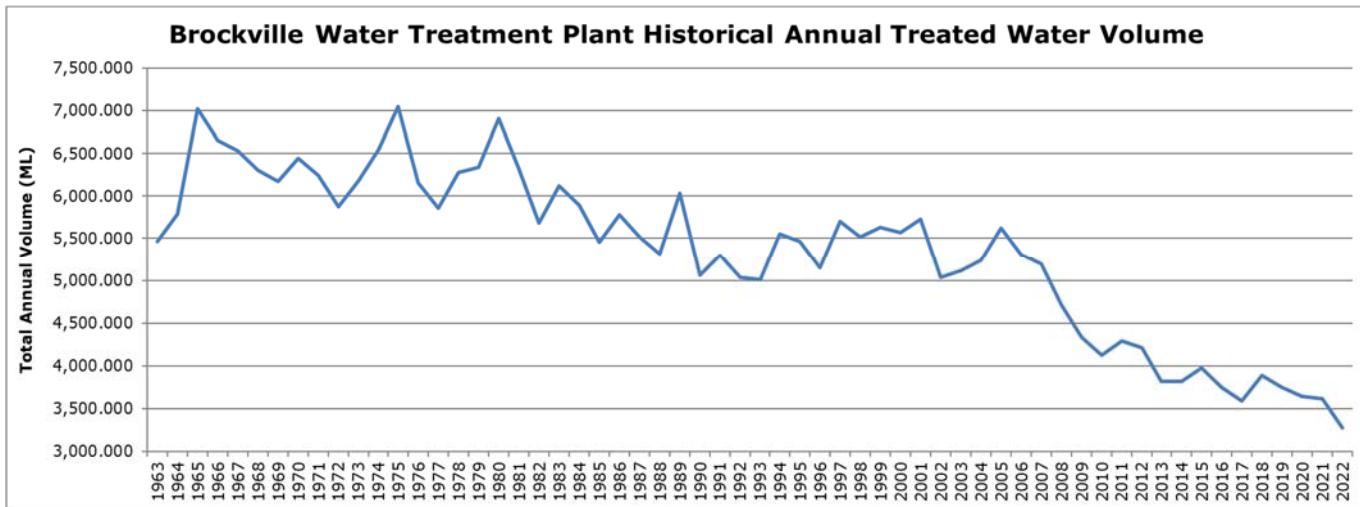
BROCKVILLE WATER SYSTEMS ANNUAL TREATED WATER VOLUME REPORT 2022

<u>Month</u>	<u>WTP Raw Avg Daily Volume (ML)</u>	<u>WTP Raw Max Daily Volume (ML)</u>	<u>WTP Raw Peak Flow (ML/day)</u>	<u>WTP Raw Total Monthly Volume (ML)</u>	<u>WTP Treated Avg Daily Volume (ML)</u>	<u>WTP Treated Max Daily Volume (ML)</u>	<u>Rated Capacity (ML/day)</u>	<u>Rated Flow Capacity (%)</u>	<u>WTP Treated Total Monthly Volume (ML)</u>
January	9.621	11.190	17.646	298.253	9.010	10.596	36.400	30.7%	279.325
February	9.421	9.908	20.102	263.792	8.764	9.299	36.400	27.2%	245.399
March	9.267	9.784	18.201	287.277	8.589	9.116	36.400	26.7%	266.245
April	9.102	9.978	17.133	273.059	8.419	9.052	36.400	27.4%	252.557
May	9.950	11.025	16.293	308.456	9.372	10.530	36.400	30.3%	290.522
June	10.133	11.162	17.877	303.989	9.561	10.626	36.400	30.7%	286.836
July	10.674	11.745	18.985	330.879	10.075	11.134	36.400	32.3%	312.329
August	10.899	12.482	28.910	337.866	10.336	11.731	36.400	34.3%	320.419
September	9.676	10.892	22.494	290.273	9.196	10.379	36.400	29.9%	275.890
October	8.612	9.960	11.741	266.975	8.413	9.559	36.400	27.4%	260.802
November	8.508	9.587	17.206	255.235	8.042	9.163	36.400	26.3%	241.271
December	8.579	9.003	23.029	265.955	8.015	8.448	36.400	24.7%	248.479
TOTAL				3,482.009					3,280.074

BROCKVILLE WATER SYSTEMS HISTORICAL ANNUAL TREATED WATER VOLUMES

<u>Year</u>	<u>Annual Volume (ML)</u>	<u>Year</u>	<u>Annual Volume (ML)</u>
1963	5,468.128	1994	5,548.256
1964	5,792.558	1995	5,467.001
1965	7,026.093	1996	5,148.340
1966	6,652.020	1997	5,698.474
1967	6,531.729	1998	5,519.157
1968	6,302.901	1999	5,631.225
1969	6,174.018	2000	5,565.808
1970	6,447.978	2001	5,726.410
1971	6,246.122	2002	5,032.500
1972	5,876.886	2003	5,117.740
1973	6,179.755	2004	5,238.190
1974	6,552.608	2005	5,625.869
1975	7,049.823	2006	5,308.800
1976	6,157.384	2007	5,189.831
1977	5,862.139	2008	4,715.116
1978	6,283.413	2009	4,332.102
1979	6,340.110	2010	4,128.747
1980	6,905.996	2011	4,291.115
1981	6,324.999	2012	4,213.592
1982	5,685.995	2013	3,815.746
1983	6,119.997	2014	3,822.724
1984	5,894.998	2015	3,972.362
1985	5,451.999	2016	3,744.720
1986	5,780.998	2017	3,595,184
1987	5,515.998	2018	3,889.242
1988	5,319.997	2019	3,753.200
1989	6,034.455	2020	3,641.936
1990	5,064.771	2021	3,615.261
1991	5,297.094	2022	3,280.074
1992	5,037.999		
1993	5,013.019		

Appendix C



ELIZABETHTOWN-KITLEY WATER DISTRIBUTION ANNUAL TREATED WATER VOLUME REPORT 2022

<u>Month</u>	<u>Avg Daily Volume (m³)</u>	<u>Max Daily Volume (m³)</u>	<u>Max Flow (L/min)</u>	<u>Total Volume (m³)</u>
January	170	195	1,147	5,277
February*	224	332	2,834	6,277
March*	237	291	2,835	7,359
April	241	295	1,049	7,224
May	246	306	2,836	7,616
June	208	269	632	6,234
July	210	279	621	6,515
August	221	275	638	6,842
September	204	230	649	6,132
October	172	218	624	5,320
November**	164	192	1,681	4,924
December**	164	164	477	5,084
TOTAL				74,804

Note: * The Elizabethtown-Kitley flow meter located at the Country Club Metering Chamber flooded in February/March 2022 which damaged the flow meter. A new meter was ordered and installed. As a result, flow values were estimated during this period.

Note: ** The Elizabethtown-Kitley flow meter motherboard broke November 28, 2022. Flows were estimated based on November data.

Appendix C

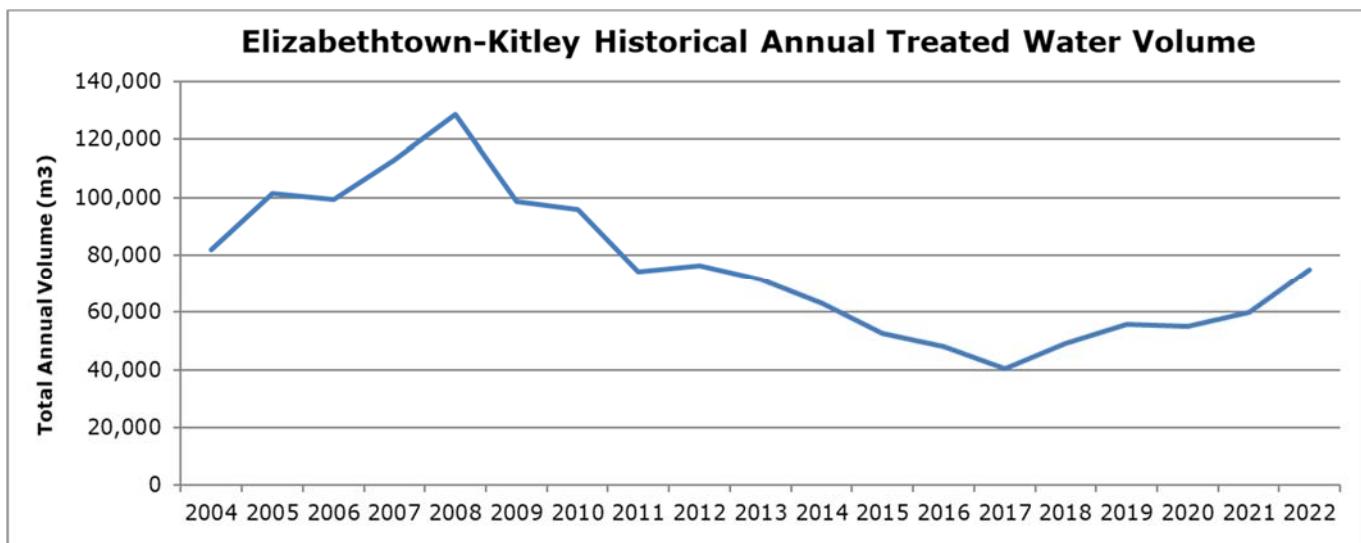
ELIZABETHTOWN- KITLEY WATER DISTRIBUTION HISTORICAL ANNUAL TREATED WATER VOLUME

Year Total Annual Volume
(m³)

2004	81,913
2005	101,402
2006	99,254
2007	113,068
2008	128,460
2009	98,782
2010	95,876
2011	74,052
2012	76,372
2013	71,552

Year Total Annual Volume
(m³)

2014	62,873
2015	52,646
2016	47,965
2017	40,185
2018	49,216
2019	55,753
2020	54,968
2021	59,876
2022	74,804





2022 WATER LOSS REPORT

WATER TREATMENT PLANT - DISTRIBUTION TOTAL	3,280,074 m³
Water Sold to Customers	
Residential	1,283,793 m ³
Industrial	1,458,620 m ³
Sales to Elizabethtown-Kitley (East of Brockville, BCC)	42,902 m ³
Sales to Elizabethtown-Kitley (West of Brockville)	41,306 m ³
TOTAL BILLED WATER	2,826,621 m³
Total Non-Revenue Water (NRW)	453,453 m³
	13.82 %
NRW Sources Accounted For	
Flat Rate Water Users	44,100 m ³
Industrial Fire Flow Testing	5,000 m ³
Chlorinator Flow/Mechanical Seals	18,355 m ³
Watermain Breaks/Service Leaks	70,428 m ³
Anti-Freeze Taps	58,658 m ³
Fire Fighting and Training	4,832 m ³
Hydrant Fire Flow Testing and Flushing	2,222 m ³
Flushing Stations	158,122 m ³
Parks and Recreation Water Use	11,085 m ³
TOTAL	372,802 m³
	11.37 %
TOTAL Unaccounted NRW	80,651 m³
	2.46 %

Last Reviewed: Feb 13, 2023

By: S. Allen



2022 WATER LOSS REPORT

TOTAL METERED WATER	74,804 m³
TOTAL BILLED WATER	84,208 m³
Total Non-Revenue Water (NRW)	9,404 m³ 12.57 %
NRW Sources Accounted For	
Watermain Breaks	1,228 m ³
Hydrant Fire Flow Testing	901 m ³
Flushing Stations	2,436 m ³
TOTAL	4,565 m³ 6.1%
TOTAL LOST WATER	4,839 m³ 6.47 %

Last Reviewed: February 27, 2023

By: S. Allen



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services Brandon Goddard, WPCC Supervisor
Report Number:	2023-45
Subject:	2022 Annual Report Water Pollution Control Centre

Recommendation

THAT Council receive Report SR2023-45, 2022 Annual Report for the Brockville Water Pollution Control Centre (WPCC).

Background

This annual report covers the period January 1, 2022 through December 31, 2022 and is a requirement under the City's WPCC Environmental Compliance Approval 7875-9Q7JVZ, Section 10 (6).

The report is prepared annually and is required to be submitted to the Ministry of the Environment, Conservation and Parks (MECP) within ninety (90) days following the end of the period being reported upon.

Analysis

The 2022 Annual Report for the Brockville Water Pollution Control Centre provides a summary of the flow data, summary of compliance results, sampling results, abatement initiatives, sludge disposal, by-pass, and overflow events. The report will be posted on the City's website.

Financial Implications

No financial implications at this time.

Policy Alignment

In accordance with Provincial Regulations.

Conclusion

It is recommended that Council receive the report.

Approved by:

Peter Raabe, Director of Engineering &
Infrastructure Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Pending

Attachments:

[2022 WPCC Annual Report](#)



CITY OF BROCKVILLE WATER POLLUTION CONTROL CENTRE

2022 ANNUAL REPORT

Peter Raabe, P. Eng., Director of Engineering and Infrastructure
Brandon Goddard, Supervisor – Wastewater Systems Division

DATE: January 23, 2023

2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

EXECUTIVE SUMMARY

The enclosed 2022 Annual Report is prepared in accordance with the Environmental Compliance Approval (ECA) for the City of Brockville's Water Pollution Control Centre (WPCC) for submission to the Ontario Ministry of the Environment, Conservation and Parks (MECP). A copy of this report is also made available at City Hall and on the City's website for public viewing. Included with this report are analytical data, plant flow, plant bypasses, plant overflow events and spills, biosolids data, as well as a process flow schematic of the facility.

In all cases, the City of Brockville's WPCC sampling and analysis program met or surpassed the requirements outlined in the plant's ECA. The annual report will discuss the level of performance with regard to effluent limits specified in the ECA. In 2022 the monthly and annual plant averages for loading and discharge effluent were compliant with the limits set out in our ECA. In 2022 there were no plant bypass events to report.

2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

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2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

1. INTRODUCTION

We are pleased to present the 2022 Water Pollution Control Centre Annual Report. The purpose of this report is to provide a performance summary on the facility for the period January 1st to December 31st, 2022, and is a legal requirement under Section 10 (6) of Environmental Compliance Approval (ECA) number 7875-9Q7JVZ, made under section 20.2 of Part II.1 of the Environmental Protection Act R.S.O. 1990, c. E19 (Environmental Protection Act). This Annual Report must be forwarded to the Ontario Ministry of the Environment, Conservation and Parks (MECP) no later than March 31st, 2023.

2. FACILITY DESCRIPTION

Brockville's wastewater treatment facility is a Class IV Secondary Treatment Plant with an average daily flow (ADF) rating of 21,800 m³/day and a peak design of 62,500 m³/day. The plant is classified as a conventional secondary treatment process inclusive of screening, grit removal, primary clarification, activated sludge process with nitrification, secondary clarification, ultraviolet disinfection, with phosphorus removal, anaerobic digestion of sludge, centrifuge dewatering of sludge, centrate return to the primary clarifiers and sludge cake recycling. The main plant was built in the 1960's, and was upgraded in several phases, the most recent in 1991, 1995 and 2010 with the Secondary Treatment Upgrade. These works also included a major upgrade to the Main Pumping Station on Water Street in 1994. **Appendix A: WPCC Process Flow Schematic** is provided.

The wastewater treatment plant services a population of approximately 22,000 as well as nearby Elizabethtown-Kitley Township retirement homes (2), the Brockville Mental Health Centre and the St. Lawrence Valley Correctional and Treatment Centre. There are 12 pumping stations located throughout the community to transfer wastewater to the treatment facility. The treated effluent receiver is the St. Lawrence River.

3. APPROVALS AND CERTIFICATION

3.1 Environmental Compliance Approval

The City of Brockville's WPCC (Works #120000122) operates under Environmental Compliance Approval (ECA) Number 7875-9Q7JVZ which includes Limited Operational Flexibility (Reference # 6247-9NYK5V). The facility is a Class IV facility in accordance with the Licensing of Sewage Works Operators Regulation (O. Reg. 129/04) made under the Ontario Water Resources Act.

The ECA for Brockville's WPCC establishes final effluent compliance limits and objective limits for 5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), Total Ammonia Nitrogen (TAN), Total Phosphorus (TP), pH and E. Coli. The compliance limits, with the exception of pH, are based on

2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

monthly averages and apply to concentration as well as total daily loading. The pH compliance limit is based on all samples collected being within a range. The compliance limits are used to determine compliance with the ECA. The objective limits are based on monthly averages and apply only to concentration. The objective limits represent the design objectives of the plant. The compliance limits and objective limits are found in the lower area below the monthly data of **Appendix B: 2022 WPCC Performance Assessment Report.**

Additionally, our ECA requires monitoring of the final effluent for Acute Lethality to Rainbow Trout and Daphnia Magna (Toxicity Testing) on a quarterly basis. The plant is currently meeting or exceeding all MECP effluent discharge requirements for toxicity testing. MECP Regulations regard ≤ 50% mortality to be a pass.

The ECA also establishes the rating of the facility for average daily flow (ADF). The ADF is the cumulative total flow of sewage to the sewage works during the year divided by the number of days of flow. A rating is also determined for peak flow (the maximum rate of sewage flow for which the plant was designed). The rated ADF for the WPCC is 21,800 m³/day and the peak flow rating is 62,500 m³/day.

3.2 Operator Certification

The Licensing of Sewage Works Operators Regulation (O. Reg. 129/04) requires owners to ensure that every operator employed in the facility holds a license applicable to that type of facility (s. 14 (1)). The City continues to ensure all operators employed at the WPCC hold a valid license for its facility.

O. Reg. 129/04 also requires the designation of an overall responsible operator (ORO) for the facility and that the ORO holds a license applicable to and of the same class as or higher than the class of the facility or one level below for no more than 150 days in a twelve month period. Brandon Goddard, Supervisor of Wastewater Systems, is the designated ORO holding a Class 4 Wastewater Treatment License and Class 3 Wastewater Collection License.

4. REPORTING REQUIREMENTS

4.1 Reporting Requirements

As a requirement of Environmental Compliance Approval (ECA) Number 7875-9Q7JVZ, Section 10. (6), a performance report, on an annual basis, within ninety days following the end of the period being reported upon shall be submitted to the MECP Director and the MECP Water Supervisor. The report shall contain, but shall not be limited to, the following information:

- (a) *A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7 (of ECA # 7875-9Q7JVZ), including an overview of the success and adequacy of the Works;*

2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

A summary of the analysis results of the compliance sampling at the WPCC are shown by month in **Appendix B: 2022 WPCC Performance Assessment Report** for both the raw influent and final effluent samples.

Compliance with the final effluent limits was achieved in both concentration and loading for CBOD₅, TSS, TP and TAN.

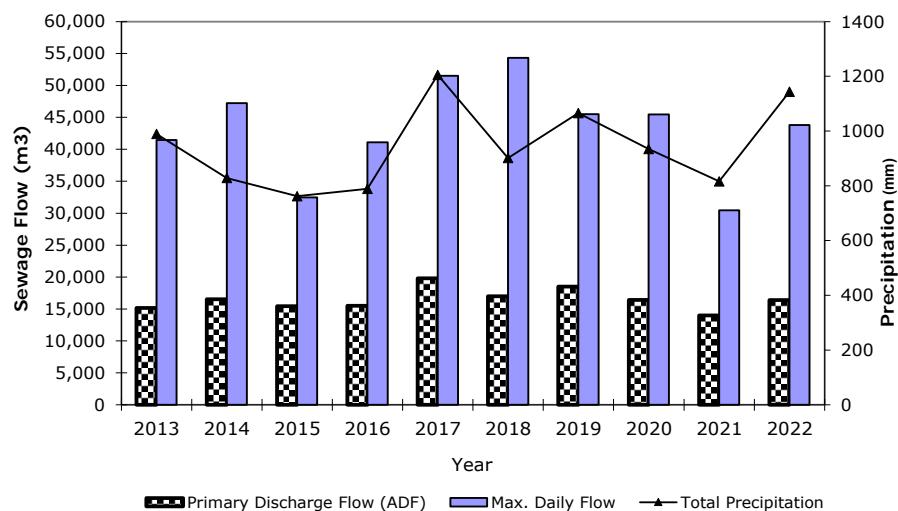
Compliance with the final effluent E. coli limit was also achieved.

The compliance limit requirement for pH of the final effluent is 6.0 to 9.5, inclusive, at all times. In 2022 the final effluent pH ranged from 6.80 to 7.20. The compliance limit for pH was met.

Quarterly toxicity tests for 2022 were all 0% mortality confirming a non-toxic final effluent.

The wastewater flow during the reporting period is outlined in **Appendix C: 2022 WPCC Flow Summary Report**. The total flow received during the 2022 reporting period was 5,984,679.70 m³ with an annual ADF of 16,396 m³ or 75.2 % of the plant's current rated capacity of 21,800 m³/day. The maximum daily flow of 43,804.90 m³ occurred on March 19th, and the minimum daily flow of 10,856.50 m³ occurred on July 17th. The ADF at the WPCC for 2022 compared to 2021 showed an increase of 17%. **Figure 1** shows the primary discharge flow vs precipitation graphically.

Figure 1: Brockville WPCC Annual Average Primary Discharge Daily Flow vs Total Precipitation 2013 - 2022



2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

- (b) *A description of any operating problems encountered, and corrective actions taken;*

Nothing to report

The use of an operational log book, as required under the Licensing of Sewage Works Operators Regulation (O. Reg. 129/04, s. 19 (1)), to record departures from normal operating procedures, unusual or abnormal conditions, and equipment that was taken out of service, ceased to operate, underwent maintenance or repair, is kept by the facility.

- (c) *A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;*

Appendix H: 2022 Capital Program contains the 2022 Capital projects, as well as some previous Capital projects that were carried over to 2022 for the WPCC, pumping stations and collection system. In 2022 the City allocated \$418,000 in Capital to replace various pieces of equipment at the WPCC and pumping stations that were nearing the end of their life cycle. These projects have been integral to refurbishing or replacing aging assets in order to maintain efficient operation and redundancy. This program utilizes risk analysis, maintenance costs and replacement analysis to give the best 10 year model possible. As always, not all risks are known and sometimes unforeseen breakdowns do occur. Excellent coordination between staff and various contractors and suppliers allows the work to be assessed and performed while keeping on track from a budget standpoint.

Additional preventative maintenance summary is available via the City's WorkTech maintenance program.

- (d) *A summary of any effluent quality assurance or control measures undertaken in the reporting period;*

WPCC staff maintains a schedule of sampling raw influent and final effluent weekly as per the ECA for compliance testing, as well as operational process sampling of the head of the primary clarifiers, primary clarifier effluent, primary raw sludge, digested sludge, activated sludge, return activated sludge, waste activated sludge and centrifuge samples. The frequency of sampling and the testing performed on compliance samples met or exceeded the minimum requirement in the ECA. The samples collected, testing performed and frequency of testing for compliance and operational process samples are outlined in the charts below and demonstrate the "best efforts" applied in meeting the effluent objectives and effluent limits prescribed by the ECA.

2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

Compliance Sampling & Testing

Sampling Point	Sample Type	ECA Testing Requirement	ECA Sampling Frequency	WPCC Sampling Frequency
Raw Influent	24 hr Composite	BOD ₅ , TSS & TP	Quarterly – Jan, Apr, July & Oct	Twice per week
	24 hr Composite	TKN	Quarterly – Jan, Apr, July & Oct	Quarterly – Jan, Apr, July & Oct
Final Effluent	24 hr Composite	CBOD ₅ , TSS & TP	Weekly	Twice per week
	24 hr Composite	TAN	Weekly	Weekly
	Grab	E. coli., pH & Temperature	Weekly	Weekly
	Grab	Acute Lethality to Rainbow Trout and Daphnia Magna	Quarterly – Jan, Apr, July & Oct	Quarterly – Jan, Apr, July & Oct
	Calculation	Un-ionized ammonia	Weekly	Weekly

Operational Process Control Sampling & Testing

Sampling Point	Sample Type	Testing Performed	WPCC Sampling Frequency
Raw Influent	24 hr Composite	DRP & pH	Weekly
	24 hr Composite	COD	Twice per week
	24 hr Composite	Nitrate	Monthly
Final Effluent	24 hr Composite	DRP & pH	Weekly
	24 hr Composite	BOD ₅	Twice per week
	24 hr Composite	Nitrate	Monthly
Head of the Primary Clarifiers	24 hr Composite	BOD ₅ , TSS, TP, DRP, pH & COD	Twice per week
Primary Effluent	24 hr Composite	BOD ₅ , TSS, TP, DRP, pH & COD	Twice per week
Primary Raw Sludge	Grab	%TS, %VS & pH	Twice per week
Digested Sludge	Grab	%TS, %VS, pH, Volatile Acids & Alkalinity	Weekly
Centrifuge Samples	Grab	%TS, %VS & TSS	Weekly
Return Activated Sludge & Waste Activated Sludge	Grab	TSS	Twice per day – Monday to Friday
Aeration Tank Mixed Liquor	Grab	MLSS, MLVSS, Temperature, pH, SS ₅ , SS ₃₀ , SVI & microscope slides	Three times per week

WPCC staff performs analysis on the samples collected and also sends out samples to an outside lab that is accredited with the Canadian Association for Laboratory Accreditation (CALA).

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CITY OF BROCKVILLE – WPCC

WPCC staff maintains an Excel operational process worksheet that provides operational process control calculations and trending to assist in the operational control of the biological/activated sludge process. This operational process worksheet provides WPCC staff with the following operational control parameters: Mixed Liquor Suspended Solids (MLSS), Mixed Liquor Volatile Suspended Solids (MLVSS), Sludge Age, Food:Microorganism Ratio (F:M), Solids Retention Time (SRT) and Wasting and Forming Loading.

Ultraviolet radiation is the control measure used for final effluent disinfection to ensure compliance with our ECA for E. coli.

Aluminum sulfate (Alum) is the control measure used to aid in phosphorus removal. The consumption of chemicals that aid in achieving effluent criteria are tracked by the treatment facility and are outlined in **Appendix E: 2022 WPCC Chemical Summary Report**.

WPCC staff use the web-based software Watertrax to manage our operational process and compliance data. An alerting function within Watertrax is used as a control measure to alert Operational staff of any data results that may indicate an operational trend and allow for any process changes that may be required to ensure the quality of our effluent.

As an additional control measure to ensure the quality of our final effluent, Abatement staff continued to monitor and work with local industry in 2022. Industry Waste Survey Reports continue to be updated and reviewed by Abatement staff.

(e) *A summary of the calibration and maintenance carried out on all effluent monitoring equipment;*

The City of Brockville uses the WorkTech preventative maintenance program to coordinate and track all plant maintenance as recommended by the original equipment manufacturer (OEM). Inspection, testing and calibration of electrical, instrumentation and SCADA equipment is performed and documented by fully trained and qualified contractors. The equipment includes process digester gas systems, overhead cranes and gantries, fall protection devices, heating, ventilation and air conditioning (HVAC) systems, standby generator equipment and high voltage switchgear, to name a few. Critical process equipment found to be malfunctioning is repaired or replaced immediately. The City employs an Industrial Mechanic Millwright who repairs and maintains process and mechanical equipment.

Instrumentation equipment is maintained in accordance with OEM recommendations, or better. Historical calibration sheets are completed each time, and if the instrument is out of calibration, corrective action is implemented along with the contractor performing the calibration. In 2022 all instrumentation equipment passed calibration.

2022 ANNUAL REPORT
CITY OF BROCKVILLE – WPCC

The summary equipment list is included in **Appendix G: 2022 Annual Flow Meter Calibrations Reports**. Various programs are in place to ensure we are current with new technologies, replace end-of-life equipment and maintain a high level of quality assurance.

- (f) ***A description of efforts made, and results achieved in meeting the Effluent Objectives of Condition 6 (of ECA # 7875-9Q7JVZ);***

The summary of the analysis results of the compliance sampling at the WPCC are shown by month in **Appendix B: 2022 WPCC Performance Assessment Report** for both the raw influent and final effluent samples. Compliance with the final effluent objectives was achieved in concentration for CBOD₅, TSS, TP and TAN.

The objective requirement for pH of the final effluent is 6.5 to 8.5, inclusive, at all times. In 2022 the final effluent pH ranged from 6.80 to 7.20. The objective limits were met.

The objective requirement for E. coli is a Monthly Geometric Mean Density of 100 organisms/100 ml. The objective limit for the final effluent E. coli was met in 2022.

- (g) ***A tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;***

The City of Brockville processed the digested sludge through our centrifuge and produced a dry biosolids product (cake). A tabulation of the volumes produced and disposal methods is outlined in **Appendix F: 2022 WPCC Centrifuge Sludge Feed and Cake Disposal Summary Report**. In 2022 our cake was hauled to GFL Environmental Inc. in Iroquois, Ontario for recycling. GFL Environmental Inc. has a C of A to receive this material.

No significant change in the volume of digested sludge or dry biosolids is anticipated for 2023.

- (h) ***A summary of any complaints received during the reporting period and any steps taken to address the complaints;***

Nothing to report

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CITY OF BROCKVILLE – WPCC

- (i) *A summary of all Bypass, Plant Overflow, Spill or abnormal discharge events;*

The occurrence of a bypass, plant overflow or spill event results in the generation of an event report and entry into the operational log.

There were no plant bypasses, overflow or spill events in 2022. See **Appendix D: 2022 WPCC Bypass/Plant Overflow/Spill Summary Report.**

- (j) *A copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1 (to ECA # 7875-9Q7JVZ), with a status report on the implementation of each modification;*

A Notice of Modification to Sewage Works for a Newterra Pilot System for a Wastewater Treatment Facility was submitted to the Water Supervisor on June 2nd, 2020. See **Appendix I: Notice of Modification to Sewage Works.** Pilot system is still currently installed and operational.

- (k) *A report summarizing all modifications completed as a result of Schedule B, Section 3 (to ECA # 7875-9Q7JVZ); and*

Nothing to report

- (l) *Any other information the Water Supervisor requires from time to time.*

Nothing to report

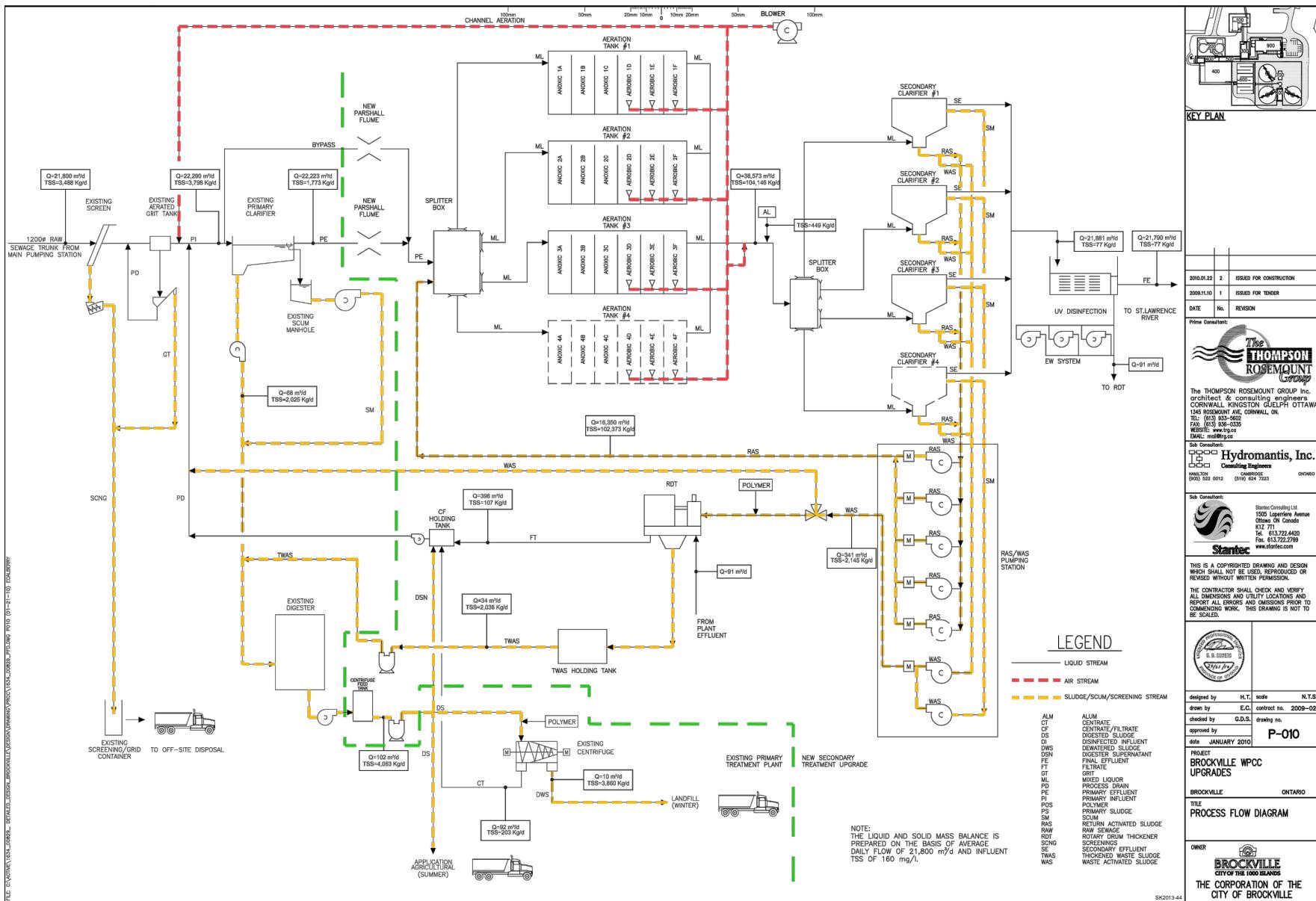
5. KEY CONTACTS AND REFERENCES

For further information on this report, enquiries on a related topic, or to arrange a plant tour of the wastewater treatment facilities, please contact:

Peter Raabe, P. Eng. Director of Engineering & Infrastructure 613-342-8772 ext. 3257 E-mail: praabe@brockville.com	Brandon Goddard Supervisor – Wastewater Systems 613-342-8772 ext. 8301 E-mail: bgoddard@brockville.com
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Ministry of the Environment, Conservation and Parks Ontario Water Wastewater Certification Office Water Environment Federation Water Environment Association of Ontario Ministry of Ontario Agriculture, Food and Rural Affairs	www.ene.gov.on.ca www.owwco.ca www.wef.org www.weao.org www.omafra.gov.on.ca
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Appendix A



Appendix B

BROCKVILLE WATER POLLUTION CONTROL CENTRE PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: BROCKVILLE
PROJECT: BROCKVILLE
WORKS NUMBER: 120000122

DESCRIPTION: A Secondary Treatment Facility, complete with two anaerobic digesters, two centrifuges for sludge thickening and two RDT's for sludge co-thickening and utilizing Alum for phosphorus removal and UV for effluent disinfection

YEAR: 2022
WATER COURSE: ST. LAWRENCE RIVER
DESIGN CAPACITY: 21,800 x 1000m³/day
PEAK DESIGN CAPACITY: 62,500 X 1000m³/day

MONTH	FLOWS			BOD/CBOD			SUSPENDED SOLIDS			PHOSPHORUS			TOTAL AMMONIA NITROGEN		PH (GRAB)		E. COLI			
	TOTAL FLOW 1000M3	Avg Day Flow 1000M3	Max Day Flow 1000M3	Avg Raw BOD (mg/L)	Avg Eff CBOD (mg/L)	Total Loading Eff CBOD (kg/day)	Avg Raw SS (mg/L)	Avg Eff SS (mg/L)	Total Loading Eff SS (kg/day)	Avg Raw Phos. (mg/L)	Avg Eff Phos. (mg/L)	Total Loading Eff Phos. (kg/day)	Avg Eff Tan (mg/L)	Total Loading Eff Tan (kg/day)	Min	Max	E. Coli (Org/100 ml) (GEOMEAN)			
DEC 22	566.82	18.285	41.369	127.00	2.20	40.23	145.00	6.00	109.71	95.9	2.78	0.31	5.67	88.8	0.46	8.41	7.1	7.1	2	
NOV 22	460.88	15.363	32.911	163.00	2.80	43.02	169.00	6.00	92.18	96.4	2.62	0.38	5.84	85.5	0.56	8.60	6.8	7.2	2	
OCT 22	395.60	12.761	16.007	177.00	2.80	35.73	203.00	6.00	76.57	97.0	2.84	0.46	5.87	83.8	0.16	2.04	6.9	7.2	1	
SEP 22	449.60	14.987	23.663	159.00	2.10	31.47	186.00	4.20	62.95	97.7	3.37	0.35	5.25	89.6	0.14	2.10	7.0	7.1	0	
AUG 22	418.09	13.487	20.040	174.00	2.70	36.41	191.00	5.00	67.44	97.4	3.50	0.47	6.34	86.6	0.59	7.96	6.9	7.1	3	
JUL 22	459.76	14.831	29.727	171.00	3.40	50.43	203.00	6.00	88.99	97.0	2.94	0.39	5.78	86.7	0.86	12.75	6.8	7.1	2	
JUN 22	478.97	15.966	20.583	187.00	3.10	49.49	209.00	6.00	95.80	97.1	3.11	0.45	7.18	85.5	0.63	10.06	6.9	7.1	2	
MAY 22	517.31	16.687	21.372	149.00	3.30	55.07	188.00	7.00	116.81	96.3	2.84	0.41	6.84	85.6	0.63	10.51	6.8	7.0	8	
APR 22	655.16	21.839	34.532	117.00	3.20	69.88	139.00	7.00	152.87	95.0	2.15	0.45	9.83	79.1	2.82	61.59	6.9	7.1	12	
MAR 22	772.45	24.918	43.805	94.00	3.20	79.74	113.00	6.00	149.51	94.7	2.02	0.25	6.23	87.6	4.64	115.62	7.0	7.1	4	
FEB 22	435.43	15.551	41.895	159.00	3.90	60.65	180.00	7.00	108.86	96.1	3.12	0.36	5.60	88.5	4.79	74.49	6.8	6.9	8	
JAN 22	374.61	12.084	13.448	169.00	3.30	39.88	193.00	5.00	60.42	97.4	3.48	0.33	3.99	90.5	0.68	8.22	6.8	6.9	2	
AVG	16.397		153.83	3.00	49.33	176.58	5.93	98.51	96.51	2.90	0.38	6.20	86.49	1.41	26.86			4		
MAX			43.805	187.00	3.90	79.74	209.00	7.00	152.87	97.74	3.50	0.47	9.83		4.79	115.62				
Objective Limit					15.00			15.00				0.80			12.0 (Nov. 1 to Apr. 30) 8.0 (May 1 to Oct. 31)		6.5 - 8.5	100		
Compliance Limit			21.800			25.00	545.00		25.00	545.00			1.00	21.80		18.0 (Nov. 1 to Apr. 30) 16.0 (May 1 to Oct. 31)	392 (Nov. 1 to Apr. 30) 349 (May 1 to Oct. 31)	6.0 - 9.5	200	

MONTH	TOTAL LOADINGS		
	TOTAL RAW BOD (kg/day)	TOTAL RAW SS (kg/day)	TOTAL RAW PHOS. (kg/day)
DEC 22	2,322	2,651	51
NOV 22	2,504	2,596	40
OCT 22	2,259	2,590	36
SEP 22	2,383	2,788	51
AUG 22	2,347	2,576	47
JUL 22	2,536	3,011	44
JUN 22	2,986	3,337	50
MAY 22	2,486	3,137	47
APR 22	2,555	3,036	47
MAR 22	2,342	2,816	50
FEB 22	2,473	2,799	49
JAN 22	2,042	2,332	42
AVG	2,436	2,806	46
MAX	2,986	3,337	51

COMMENTS:

Appendix C

2022 WPCC Flow Summary Report

Sampling Point: 012 Primary Effluent

Daily Flow(Inline Instrument)

# samples:	365	min:	10,856.50	m ³ /d
# detects:	365	max:	43,804.90	m ³ /d
# non-detects:	0	avg:	16,396.38	m ³ /d (based on 365 numerical results)
# exceedances:	0	total:	5,984,679.70	m ³

Appendix D

FORM: 205-2.1

Water Pollution Control Centre Bypass/Plant Overflow/Spill
ECA Number: 7875-9Q7JVZ

Facility Name: WPCC Report Year: 2022

Bypass/Plant Overflow/Spill Monthly Summary

MONTH	Bypass			Plant Overflow		
	No. of Days (days)	Duration (hours)	Volume (1,000 m ³)	No. of Days (days)	Duration (hours)	Volume (1,000 m ³)
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
TOTAL	0	0	0	0	0	0
Volume of Bypass as % of *			#DIV/0!	Volume of Plant Overflow as % of *		#DIV/0!
Average Daily Flow (ADF)				Average Daily Flow (ADF)		

ADF = (m³/d) 0 (1,000 m³/d)

Note: % = Volume of Bypass divided by ADF divided by 365

Comments:

Nothing to Report in 2022

Bypass: Means diversion of sewage around one or more unit processes within the sewage treatment plant with the diverted sewage flows being returned to the Sewage Treatment Plant train upstream of the Final Effluent sampling location, and discharging to the environment through Sewage Treatment Plant outfall.

Plant Overflow: Means a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the final effluent sampling location.

Spill: Any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment.

Appendix D

FORM: 205-2.1

Water Pollution Control Centre Bypass/Plant Overflow/Spill
ECA Number: 7875-9Q7JVZ

Facility Name: WPCC Report Year: 2022

Bypass/Plant Overflow/Spill Monthly Summary

MONTH	Spill		
	No. of Occurrences		Volume (1,000 m ³)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
TOTAL	0		0

Comments:

Nothing to Report in 2022

Bypass: Means diversion of sewage around one or more unit processes within the sewage treatment plant with the diverted sewage flows being returned to the Sewage Treatment Plant train upstream of the Final Effluent sampling location, and discharging to the environment through Sewage Treatment Plant outfall.

Plant Overflow: Means a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the final effluent sampling location.

Spill: Any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment.

Appendix E

2022 WPCC Annual Chemical Summary

Totals	011 Chemicals		
	062 Alum use (kg/day) (kg)	063 Alum use (L/d) (L)	064 Alum dose (mg/L)
Average	879.78	665.50	58.56
Minimum	39.22*	29.67*	2.21*
Maximum	1,047.62	792.45	92.99
Count	365	365	365
Total	321,118.80	242,909.05	

* Totalizer Error

Appendix F

2022 WPCC Centrifuge Sludge Feed and Cake Disposal Summary Report

Totals	221 Centrifuge - Digested Sludge Feed			222 Centrifuge - Cake	27 Cake Weight
	Sludge Volume to Centrifuge (m³)	% Volatile Solids (%)	% Total Solids (%)	% Total Solids (%)	Cake Weight to Recycling - GFL Environmental Inc (kg)
Average	88.81	57.01	1.99	24.94	9,319
Minimum	48.00	41.82	1.30	22.54	5,070
Maximum	177.40	67.56	3.16	28.38	13,310
Count	365	51	51	77	183
Total	32,414.08				1,705,350



Appendix G

**CITY OF BROCKVILLE
Annual Calibration Services
Brockville WWTP**

September 21, 2022

Patrick Brown
Chief Operator – Wastewater Systems
City of Brockville
1807 County Rd #2 East
Brockville, ON K6V 5T1

RE: Annual Flowmeter Calibrations

Mr. Brown,

Please find attached annual calibration reports for all regulatory and operational devices calibrated on September 1-2, 2022. An overview of the devices calibrated by Tower Electronics Canada (TEC) is included on Page 2 of this report.

An overview of the work completed is as follows:

- Devices were calibrated using NIST traceable standards,
- All instruments are operating within acceptable regulatory tolerances, and

Individual calibration reports are attached, with all calibration specifics identified. If there are any questions or concerns regarding the reports, please contact me and your earliest convenience.

Thanks,

Dan Matchett, Owner
Tower Electronics Canada Inc.
613-847-7623



Appendix G

CITY OF BROCKVILLE
Annual Calibration Services
Brockville WWTP

Meter	Process	Tag ID	Calibration Result	Comments
E&H Promag 53	Alum Flow	FIT 353	Pass	None
E&H Promag 50	-	FIT 367	Pass	None
Krohne SC 080AS	-	FIT 369	Pass	None
Krohne IFC 090	-	FIT 511	Pass	none
Krohne IFC 090	-	FIT 512	Pass	none
Krohne IFC 090	Boiler Effluent	FIT 561	Pass	none
Vega C21	Primary Discharge	FIT 602	Pass	none
Siemens Hydroranger	Bypass	FIT 603	Pass	none
E&H Promag 53	-	FIT 713	Pass	none
E&H Promag 400	RAS	FIT 721	Pass	none
E&H Promag 53	RAS	FIT 722	Pass	none
E&H Promag 53	RAS	FIT 723	Pass	none
E&H Promag 53	RAS	FIT 724	Pass	none
E&H Promag 53	Effluent Water	FIT 834	Pass	none
E&H Promag 53	-	FIT 944	Pass	none
E&H Promag 53	-	FIT 953	Pass	none
E&H Promag 53	-	FIT 973	Pass	none
E&H Promag 53	Pump 972 Flow	FIT 975	Pass	none
E&H Promag 53	Septage Station	FIT 995	Pass	none
Krohne IFC 090	Raw Sludge 1	-	Pass	none
Krohne IFC 090	Raw Sludge 2	-	Pass	none
Krohne SC 080AS	Sludge Decanter North	FIT-366	Pass	none
E & H Promag 400	Leachate High Lift	-	Pass	None
E & H Promag 400	Leachate Overflow	-	Pass	None

Appendix G

Tower Electronics Canada Inc. Calibration Certificate**Customer:**

Patrick Brown, Chief Opeator - Wastewater Systems
 City of Brockville
 1807 County Rd #2 East
 Brockville, ON K6V 5T1

Calibration by:

Dan Matchett

Standards:

Fluke 289 S/N 96220182 NIST Cal Due April 2023

Instrument Type

Magnetic Flow Meter

Meter Information

Date:	4/20/2022
Location:	Brockville WWTP
Meter Under Test	FIT-721
Client Tag:	FIT-721
Manufacturer:	EnH
Model:	Promag 400
Serial Number:	T307DD16000
Totalizer As Found:	-
Totalizer As Left:	-

Programming Parameters:

DN Size:	DN200
Cal Factor:	1.096
Zero:	1.8
Calibration Due:	May 2023

Method of verification

Endress Hauser Heartbeat Internal Verification

Units: M3/Hour

Zero: 0.00

Span: 9423.00

Totalizer: n/a

Heartbeat Technology Test	Result
Shot Time Symmetry	PASSED
Hold Voltage Symmetry	PASSED
Coil Current Loss	PASSED
Coil Current Stability	PASSED
Coil Resistance	PASSED
Cable Defect 1	PASSED
Cable Defect 2	PASSED
Cable Defect 3	PASSED
External Reference Voltage	PASSED
Linearity of Electrode Circ	PASSED
Offset of Electrode Circuit	PASSED
Input Module	PASSED
Overall Verification Result	PASSED

Verification Completed according to DIN EN ISO 9001:2008 Section 7.6a

Output Test

Current Simulation mA	Reference Reading	Error%
4	4.001	0.006
8	8.001	0.006
12	12.001	0.006
16	15.999	-0.006
20	20.000	0.000
Average Error%		0.002
Result:		PASS

Comments:

Unit passes verification within 5% of actual values.

Appendix H

2022 CAPITAL PROGRAM

<u>PROJECT NAME:</u>		Water Pollution Control Centre Equipment Replacement Program	<u>YEAR PROPOSED</u> <u>ITEM NO:</u>	2022 6.2
<u>LOCATION:</u>		Sewage Treatment Plant, Pumping Stations & Collection System		
<u>HISTORY:</u>		LENGTH OF PROJECT: YEAR FIRST INTRODUCED:	Ongoing - through Sewer Rate Reserve 1997	
<u>SCOPE:</u>		Replacement of Capital Equipment for the Water Pollution Control Centre and associated structures and pumping stations. This is to be accomplished from the Sewer Rate Reserve Fund.		
Account #	Cost Centre		Budget	
07-5-879395-2010/3010	22WW12	WPCC BUILDINGS AND PROPERTY: HVAC Systems 900 Admin - Upper - Re-Engineering & Balancing	40,000	
07-5-879395-2010/3010	22WW13	HVAC Systems - Bldg's 100, 700, 800	25,000	
		Dewatering:		
07-5-879395-2010/3010	22WW11	Cake Conveyor System Refurbishment	200,000	
07-5-879395-2010/3010	22WW14	Overhead Garage Door Replace Cake Bay (2)	15,000	
		Septage:		
07-5-864395-2010/3010	22WW07	Septage Hauler Recording System	25,000	
		UV Building:		
07-5-864395-2010/3010	22WW08	Hydraulic Ram System	30,000	
		Pumping Stations:		
07-5-864395-2010/3010	22WW09	Pump Station HMI & Control Software	18,000	
		Fleet:		
07-5-864395-2010/3010	22WW10	Purchase of 2500 Series Pick-up Truck	65,000	
				418,000

Account #		Water Pollution Control Centre	<u>Year Proposed</u>	<u>Budget</u>	
				(Remaining)	(Original)
		WPCC BUILDING AND PROPERTY:			
07-5-898502-2010	21WW01	Concrete Structure @ Entry to River (Rebuild)	2016	211,016	120,000
07-5-858676-2010	21WW60	Roof Maintenance & Spot Repairs - Miscellaneous Buildings	2021	2,422	15,000
		Primary Clarifiers:			
07-5-858676-2010	21WW63	Replace Long (8), Cross (4) Chain & Flight	2021	4,236	68,000
07-5-858676-2010	21WW64	Replace Chain Drive & Idler Sprockets	2021	7,948	25,000
		Digester Operations:			
07-5-858676-2010	21WW65	Digester #1 Clean out	2021	70,000	70,000
		WPCC GENERAL EQUIPMENT:			
07-5-898502-2010	21WW03	Wireless communication Systems (4 additional stations)	2019	2,377	28,000
07-5-858676-2010	21WW54	ARC Flash Assessment - CSA, Regulatory	2020	0	20,000
		PUMPING STATIONS:			
07-5-858576-2010	21WW58	WEST END PS - Standby Generator & Switchgear Refurbishment	2020	17,500	95,000
07-5-898502-2010	21WW05	PUMP STN'S - SCADA/Instru./Elect. Upgrades	2021	3,857	65,000
07-5-858576-2010	21WW06	Main Pump Station Design	2016	400,000	400,000
		OTHER PROJECT:			
07-5-858676-2010	21WW68	Engineering - Rated Capacity Study	2021	2,100	20,000
07-5-892012-2010	21VW02	New Vehicle Purchase (3/4 Ton)	2021	57,600	57,600

PREPARED BY (PROJECT MANAGER):
DATE:

Brandon Goddard
 March 15, 2022

Appendix I

**Notice of Modification to Sewage Works**

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility <small>(Insert the ECA's owner, number and issuance date and notice number, which should start with '01' and consecutive numbers thereafter)</small>		
ECA Number 7875-9Q7JVZ	Issuance Date (mm/dd/yy) 11/19/14	Notice number (if applicable) -
ECA Owner THE CORPORATION OF THE CITY OF BROCKVILLE	Municipality BROCKVILLE	

Part 2: Description of the modifications as part of the Limited Operational Flexibility
(Attach a detailed description of the sewage works)

- Please See Attached
- PILOT SYSTEM FOR WASTEWATER TREATMENT FACILITY BY NEWTERRA.
- ANTICIPATED ENVIRONMENTAL EFFECTS ARE NEGIGIBLE.

Description shall include:

1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer

I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:

1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name (Print) Jeff, Kempson	PEO License Number 90550328
Signature 	Date (mm/dd/yy) 05/14/20
Name of Employer Newterra	

Part 4 – Declaration by Owner

I hereby declare that:

1. I am authorized by the Owner to complete this Declaration;
2. The Owner consents to the modification; and
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.
4. The Owner has fulfilled all applicable requirements of the Environmental Assessment Act.

I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate

Name of Owner Representative (Print) PHIL WOOD	Owner representative's title (Print) SUPERVISOR - WASTEWATER SYSTEMS
Owner Representative's Signature 	Date (mm/dd/yy) 06/01/20

Appendix I



Description of Modifications of the Sewage Works

The proposed system falls under the Pilot system definition as per Brockville's Wastewater Treatment Plant ECA:

"1.5 Pilot Systems

- a. Installation of pilot systems for new or existing technologies provided that:
 - i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,
 - ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
 - iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and District Manager three months after completion of the pilot project."

A new Lift Station pump is to be added in to the existing Sewage Pumping Station. As per Section 1.1.a, this new pump will not change the facility Rated Capacity as it will feed the newterra system as a side stream, which will be returned to the same Sewage Pumping Station after treatment.

The Pilot System will consist on a packaged newterra MBR system, housed inside a 45'x8' High-cube modified shipping container. The system will consist of fine screening followed by an Aerobic only configuration, with three (3) membrane trains running in parallel. Sodium Hydroxide and Aluminum Sulphate are to be added to the Aerobic Tank periodically to achieve both pH and Total Phosphorous control. The permeate discharge will run through an absorption media to further reduce Total Phosphorous concentration. This discharge would be combined with the waste activated sludge from the Aerobic Tank and with the overflow from the Screen Tank, to be sent back to the Sewage Pumping Station. Details on flowrates can be found on the P&ID.

The discharged water quality will be monitored to prevent alteration of the composition of the inlet sewage to the Brockville Waste Water Treatment Plant. The pilot plant is not expected to exceed a duration of operation of more than two years and a report will be compiled and sent to the Director and District Manager within three months of the completion of the pilot system's operation.



CITY OF BROCKVILLE WATER POLLUTION CONTROL CENTRE

2022 ANNUAL REPORT

Peter Raabe, P. Eng., Director of Engineering and Infrastructure
Brandon Goddard, Supervisor – Wastewater Systems Division

DATE: January 23, 2023

EXECUTIVE SUMMARY

The enclosed 2022 Annual Report is prepared in accordance with the Environmental Compliance Approval (ECA) for the City of Brockville's Water Pollution Control Centre (WPCC) for submission to the Ontario Ministry of the Environment, Conservation and Parks (MECP). A copy of this report is also made available at City Hall and on the City's website for public viewing. Included with this report are analytical data, plant flow, plant bypasses, plant overflow events and spills, biosolids data, as well as a process flow schematic of the facility.

In all cases, the City of Brockville's WPCC sampling and analysis program met or surpassed the requirements outlined in the plant's ECA. The annual report will discuss the level of performance with regard to effluent limits specified in the ECA. In 2022 the monthly and annual plant averages for loading and discharge effluent were compliant with the limits set out in our ECA. In 2022 there were no plant bypass events to report.

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1. INTRODUCTION

We are pleased to present the 2022 Water Pollution Control Centre Annual Report. The purpose of this report is to provide a performance summary on the facility for the period January 1st to December 31st, 2022, and is a legal requirement under Section 10 (6) of Environmental Compliance Approval (ECA) number 7875-9Q7JVZ, made under section 20.2 of Part II.1 of the Environmental Protection Act R.S.O. 1990, c. E19 (Environmental Protection Act). This Annual Report must be forwarded to the Ontario Ministry of the Environment, Conservation and Parks (MECP) no later than March 31st, 2023.

2. FACILITY DESCRIPTION

Brockville's wastewater treatment facility is a Class IV Secondary Treatment Plant with an average daily flow (ADF) rating of 21,800 m³/day and a peak design of 62,500 m³/day. The plant is classified as a conventional secondary treatment process inclusive of screening, grit removal, primary clarification, activated sludge process with nitrification, secondary clarification, ultraviolet disinfection, with phosphorus removal, anaerobic digestion of sludge, centrifuge dewatering of sludge, centrate return to the primary clarifiers and sludge cake recycling. The main plant was built in the 1960's, and was upgraded in several phases, the most recent in 1991, 1995 and 2010 with the Secondary Treatment Upgrade. These works also included a major upgrade to the Main Pumping Station on Water Street in 1994. **Appendix A: WPCC Process Flow Schematic** is provided.

The wastewater treatment plant services a population of approximately 22,000 as well as nearby Elizabethtown-Kitley Township retirement homes (2), the Brockville Mental Health Centre and the St. Lawrence Valley Correctional and Treatment Centre. There are 12 pumping stations located throughout the community to transfer wastewater to the treatment facility. The treated effluent receiver is the St. Lawrence River.

3. APPROVALS AND CERTIFICATION

3.1 Environmental Compliance Approval

The City of Brockville's WPCC (Works #120000122) operates under Environmental Compliance Approval (ECA) Number 7875-9Q7JVZ which includes Limited Operational Flexibility (Reference # 6247-9NYK5V). The facility is a Class IV facility in accordance with the Licensing of Sewage Works Operators Regulation (O. Reg. 129/04) made under the Ontario Water Resources Act.

The ECA for Brockville's WPCC establishes final effluent compliance limits and objective limits for 5-day Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), Total Ammonia Nitrogen (TAN), Total Phosphorus (TP), pH and E. Coli. The compliance limits, with the exception of pH, are based on

monthly averages and apply to concentration as well as total daily loading. The pH compliance limit is based on all samples collected being within a range. The compliance limits are used to determine compliance with the ECA. The objective limits are based on monthly averages and apply only to concentration. The objective limits represent the design objectives of the plant. The compliance limits and objective limits are found in the lower area below the monthly data of **Appendix B: 2022 WPCC Performance Assessment Report.**

Additionally, our ECA requires monitoring of the final effluent for Acute Lethality to Rainbow Trout and Daphnia Magna (Toxicity Testing) on a quarterly basis. The plant is currently meeting or exceeding all MECP effluent discharge requirements for toxicity testing. MECP Regulations regard $\leq 50\%$ mortality to be a pass.

The ECA also establishes the rating of the facility for average daily flow (ADF). The ADF is the cumulative total flow of sewage to the sewage works during the year divided by the number of days of flow. A rating is also determined for peak flow (the maximum rate of sewage flow for which the plant was designed). The rated ADF for the WPCC is 21,800 m³/day and the peak flow rating is 62,500 m³/day.

3.2 Operator Certification

The Licensing of Sewage Works Operators Regulation (O. Reg. 129/04) requires owners to ensure that every operator employed in the facility holds a license applicable to that type of facility (s. 14 (1)). The City continues to ensure all operators employed at the WPCC hold a valid license for its facility.

O. Reg. 129/04 also requires the designation of an overall responsible operator (ORO) for the facility and that the ORO holds a license applicable to and of the same class as or higher than the class of the facility or one level below for no more than 150 days in a twelve month period. Brandon Goddard, Supervisor of Wastewater Systems, is the designated ORO holding a Class 4 Wastewater Treatment License and Class 3 Wastewater Collection License.

4. REPORTING REQUIREMENTS

4.1 Reporting Requirements

As a requirement of Environmental Compliance Approval (ECA) Number 7875-9Q7JVZ, Section 10. (6), a performance report, on an annual basis, within ninety days following the end of the period being reported upon shall be submitted to the MECP Director and the MECP Water Supervisor. The report shall contain, but shall not be limited to, the following information:

- (a) *A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 7 (of ECA # 7875-9Q7JVZ), including an overview of the success and adequacy of the Works;***

A summary of the analysis results of the compliance sampling at the WPCC are shown by month in **Appendix B: 2022 WPCC Performance Assessment Report** for both the raw influent and final effluent samples.

Compliance with the final effluent limits was achieved in both concentration and loading for CBOD₅, TSS, TP and TAN.

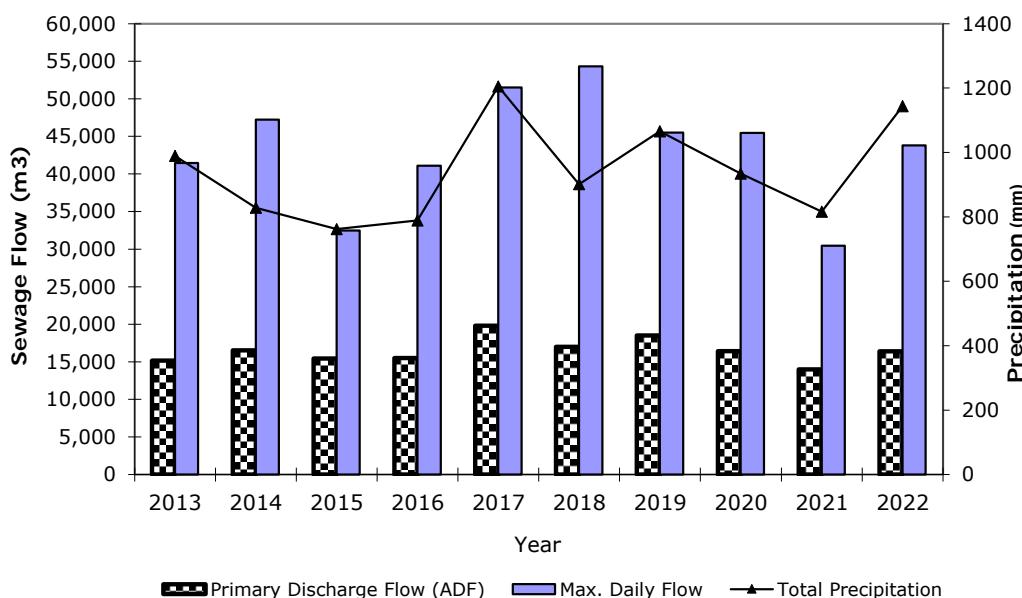
Compliance with the final effluent E. coli limit was also achieved.

The compliance limit requirement for pH of the final effluent is 6.0 to 9.5, inclusive, at all times. In 2022 the final effluent pH ranged from 6.80 to 7.20. The compliance limit for pH was met.

Quarterly toxicity tests for 2022 were all 0% mortality confirming a non-toxic final effluent.

The wastewater flow during the reporting period is outlined in **Appendix C: 2022 WPCC Flow Summary Report**. The total flow received during the 2022 reporting period was 5,984,679.70 m³ with an annual ADF of 16,396 m³ or 75.2 % of the plant's current rated capacity of 21,800 m³/day. The maximum daily flow of 43,804.90 m³ occurred on March 19th, and the minimum daily flow of 10,856.50 m³ occurred on July 17th. The ADF at the WPCC for 2022 compared to 2021 showed an increase of 17%. **Figure 1** shows the primary discharge flow vs precipitation graphically.

**Figure 1: Brockville WPCC
Annual Average Primary Discharge Daily Flow
vs Total Precipitation
2013 - 2022**



(b) *A description of any operating problems encountered, and corrective actions taken;*

Nothing to report

The use of an operational log book, as required under the Licensing of Sewage Works Operators Regulation (O. Reg. 129/04, s. 19 (1)), to record departures from normal operating procedures, unusual or abnormal conditions, and equipment that was taken out of service, ceased to operate, underwent maintenance or repair, is kept by the facility.

(c) *A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the Works;*

Appendix H: 2022 Capital Program contains the 2022 Capital projects, as well as some previous Capital projects that were carried over to 2022 for the WPCC, pumping stations and collection system. In 2022 the City allocated \$418,000 in Capital to replace various pieces of equipment at the WPCC and pumping stations that were nearing the end of their life cycle. These projects have been integral to refurbishing or replacing aging assets in order to maintain efficient operation and redundancy. This program utilizes risk analysis, maintenance costs and replacement analysis to give the best 10 year model possible. As always, not all risks are known and sometimes unforeseen breakdowns do occur. Excellent coordination between staff and various contractors and suppliers allows the work to be assessed and performed while keeping on track from a budget standpoint.

Additional preventative maintenance summary is available via the City's WorkTech maintenance program.

(d) *A summary of any effluent quality assurance or control measures undertaken in the reporting period;*

WPCC staff maintains a schedule of sampling raw influent and final effluent weekly as per the ECA for compliance testing, as well as operational process sampling of the head of the primary clarifiers, primary clarifier effluent, primary raw sludge, digested sludge, activated sludge, return activated sludge, waste activated sludge and centrifuge samples. The frequency of sampling and the testing performed on compliance samples met or exceeded the minimum requirement in the ECA. The samples collected, testing performed and frequency of testing for compliance and operational process samples are outlined in the charts below and demonstrate the "best efforts" applied in meeting the effluent objectives and effluent limits prescribed by the ECA.

Compliance Sampling & Testing

Sampling Point	Sample Type	ECA Testing Requirement	ECA Sampling Frequency	WPCC Sampling Frequency
Raw Influent	24 hr Composite	BOD ₅ , TSS & TP	Quarterly – Jan, Apr, July & Oct	Twice per week
	24 hr Composite	TKN	Quarterly – Jan, Apr, July & Oct	Quarterly – Jan, Apr, July & Oct
Final Effluent	24 hr Composite	CBOD ₅ , TSS & TP	Weekly	Twice per week
	24 hr Composite	TAN	Weekly	Weekly
	Grab	E. coli., pH & Temperature	Weekly	Weekly
	Grab	Acute Lethality to Rainbow Trout and Daphnia Magna	Quarterly – Jan, Apr, July & Oct	Quarterly – Jan, Apr, July & Oct
	Calculation	Un-ionized ammonia	Weekly	Weekly

Operational Process Control Sampling & Testing

Sampling Point	Sample Type	Testing Performed	WPCC Sampling Frequency
Raw Influent	24 hr Composite	DRP & pH	Weekly
	24 hr Composite	COD	Twice per week
	24 hr Composite	Nitrate	Monthly
Final Effluent	24 hr Composite	DRP & pH	Weekly
	24 hr Composite	BOD ₅	Twice per week
	24 hr Composite	Nitrate	Monthly
Head of the Primary Clarifiers	24 hr Composite	BOD ₅ , TSS, TP, DRP, pH & COD	Twice per week
Primary Effluent	24 hr Composite	BOD ₅ , TSS, TP, DRP, pH & COD	Twice per week
Primary Raw Sludge	Grab	%TS, %VS & pH	Twice per week
Digested Sludge	Grab	%TS, %VS, pH, Volatile Acids & Alkalinity	Weekly
Centrifuge Samples	Grab	%TS, %VS & TSS	Weekly
Return Activated Sludge & Waste Activated Sludge	Grab	TSS	Twice per day – Monday to Friday
Aeration Tank Mixed Liquor	Grab	MLSS, MLVSS, Temperature, pH, SS ₅ , SS ₃₀ , SVI & microscope slides	Three times per week

WPCC staff performs analysis on the samples collected and also sends out samples to an outside lab that is accredited with the Canadian Association for Laboratory Accreditation (CALA).

WPCC staff maintains an Excel operational process worksheet that provides operational process control calculations and trending to assist in the operational control of the biological/activated sludge process. This operational process worksheet provides WPCC staff with the following operational control parameters: Mixed Liquor Suspended Solids (MLSS), Mixed Liquor Volatile Suspended Solids (MLVSS), Sludge Age, Food:Microorganism Ratio (F:M), Solids Retention Time (SRT) and Wasting and Forming Loading.

Ultraviolet radiation is the control measure used for final effluent disinfection to ensure compliance with our ECA for E. coli.

Aluminum sulfate (Alum) is the control measure used to aid in phosphorus removal. The consumption of chemicals that aid in achieving effluent criteria are tracked by the treatment facility and are outlined in **Appendix E: 2022 WPCC Chemical Summary Report**.

WPCC staff use the web-based software Watertrax to manage our operational process and compliance data. An alerting function within Watertrax is used as a control measure to alert Operational staff of any data results that may indicate an operational trend and allow for any process changes that may be required to ensure the quality of our effluent.

As an additional control measure to ensure the quality of our final effluent, Abatement staff continued to monitor and work with local industry in 2022. Industry Waste Survey Reports continue to be updated and reviewed by Abatement staff.

(e) *A summary of the calibration and maintenance carried out on all effluent monitoring equipment;*

The City of Brockville uses the WorkTech preventative maintenance program to coordinate and track all plant maintenance as recommended by the original equipment manufacturer (OEM). Inspection, testing and calibration of electrical, instrumentation and SCADA equipment is performed and documented by fully trained and qualified contractors. The equipment includes process digester gas systems, overhead cranes and gantries, fall protection devices, heating, ventilation and air conditioning (HVAC) systems, standby generator equipment and high voltage switchgear, to name a few. Critical process equipment found to be malfunctioning is repaired or replaced immediately. The City employs an Industrial Mechanic Millwright who repairs and maintains process and mechanical equipment.

Instrumentation equipment is maintained in accordance with OEM recommendations, or better. Historical calibration sheets are completed each time, and if the instrument is out of calibration, corrective action is implemented along with the contractor performing the calibration. In 2022 all instrumentation equipment passed calibration.

The summary equipment list is included in **Appendix G: 2022 Annual Flow Meter Calibrations Reports**. Various programs are in place to ensure we are current with new technologies, replace end-of-life equipment and maintain a high level of quality assurance.

- (f) ***A description of efforts made, and results achieved in meeting the Effluent Objectives of Condition 6 (of ECA # 7875-9Q7JVZ);***

The summary of the analysis results of the compliance sampling at the WPCC are shown by month in **Appendix B: 2022 WPCC Performance Assessment Report** for both the raw influent and final effluent samples. Compliance with the final effluent objectives was achieved in concentration for CBOD₅, TSS, TP and TAN.

The objective requirement for pH of the final effluent is 6.5 to 8.5, inclusive, at all times. In 2022 the final effluent pH ranged from 6.80 to 7.20. The objective limits were met.

The objective requirement for E. coli is a Monthly Geometric Mean Density of 100 organisms/100 ml. The objective limit for the final effluent E. coli was met in 2022.

- (g) ***A tabulation of the volume of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations to where the sludge was disposed;***

The City of Brockville processed the digested sludge through our centrifuge and produced a dry biosolids product (cake). A tabulation of the volumes produced and disposal methods is outlined in **Appendix F: 2022 WPCC Centrifuge Sludge Feed and Cake Disposal Summary Report**. In 2022 our cake was hauled to GFL Environmental Inc. in Iroquois, Ontario for recycling. GFL Environmental Inc. has a C of A to receive this material.

No significant change in the volume of digested sludge or dry biosolids is anticipated for 2023.

- (h) ***A summary of any complaints received during the reporting period and any steps taken to address the complaints;***

Nothing to report

- (i) *A summary of all Bypass, Plant Overflow, Spill or abnormal discharge events;*

The occurrence of a bypass, plant overflow or spill event results in the generation of an event report and entry into the operational log.

There were no plant bypasses, overflow or spill events in 2022. See **Appendix D: 2022 WPCC Bypass/Plant Overflow/Spill Summary Report.**

- (j) *A copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule B, Section 1 (to ECA # 7875-9Q7JVZ), with a status report on the implementation of each modification;*

A Notice of Modification to Sewage Works for a Newterra Pilot System for a Wastewater Treatment Facility was submitted to the Water Supervisor on June 2nd, 2020. See **Appendix I: Notice of Modification to Sewage Works.** Pilot system is still currently installed and operational.

- (k) *A report summarizing all modifications completed as a result of Schedule B, Section 3 (to ECA # 7875-9Q7JVZ); and*

Nothing to report

- (l) *Any other information the Water Supervisor requires from time to time.*

Nothing to report

5. KEY CONTACTS AND REFERENCES

For further information on this report, enquiries on a related topic, or to arrange a plant tour of the wastewater treatment facilities, please contact:

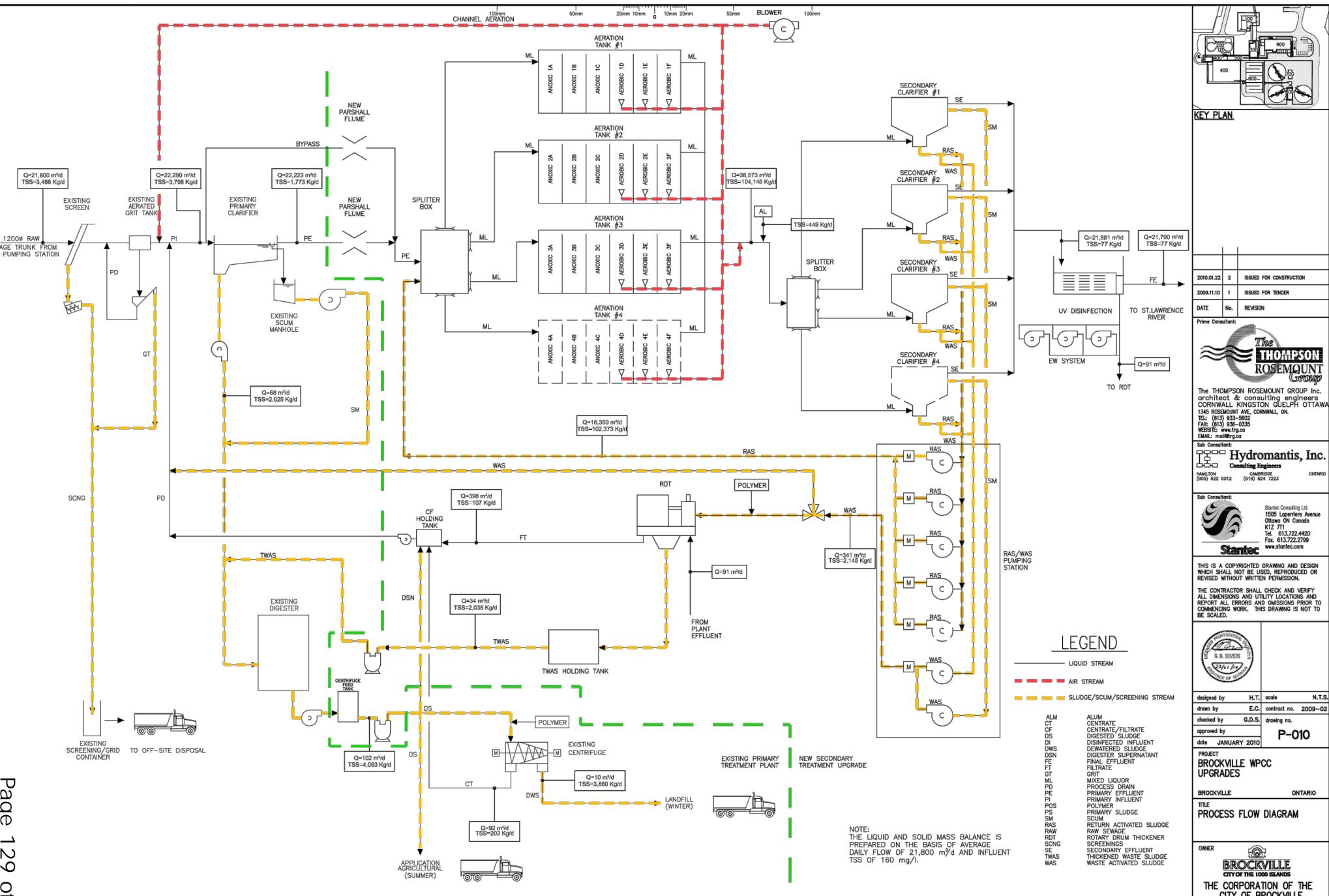
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Ministry of the Environment, Conservation and Parks
Ontario Water Wastewater Certification Office
Water Environment Federation
Water Environment Association of Ontario
Ministry of Ontario Agriculture, Food and Rural Affairs

www.ene.gov.on.ca
www.owwco.ca
www.wef.org
www.weao.org
www.omafra.gov.on.ca

Appendix A



Appendix B

BROCKVILLE WATER POLLUTION CONTROL CENTRE PERFORMANCE ASSESSMENT REPORT

MUNICIPALITY: BROCKVILLE
PROJECT: BROCKVILLE
WORKS NUMBER: 120000122

DESCRIPTION: A Secondary Treatment Facility, complete with two anaerobic digesters, two centrifuges for sludge thickening and two RDT's for sludge co-thickening and utilizing Alum for phosphorus removal and UV for effluent disinfection

YEAR: 2022
WATER COURSE: ST. LAWRENCE RIVER
DESIGN CAPACITY: 21,800 x 1000m³/day
PEAK DESIGN CAPACITY: 62,500 X 1000m³/day

MONTH	FLOWS			BOD/CBOD			SUSPENDED SOLIDS				PHOSPHORUS				TOTAL AMMONIA NITROGEN		PH (GRAB)		E. COLI	
	TOTAL FLOW 1000M3	AVG DAY FLOW 1000M3	MAX DAY FLOW 1000M3	AVG RAW BOD (mg/L)	AVG EFF CBOD (mg/L)	TOTAL LOADING EFF CBOD (kg/day)	AVG RAW SS (mg/L)	AVG EFF SS (mg/L)	TOTAL LOADING EFF SS (kg/day)	PERCENT REMOVAL	AVG RAW PHOS. (mg/L)	AVG EFF PHOS. (mg/L)	TOTAL LOADING EFF PHOS. (kg/day)	PERCENT REMOVAL	AVG EFF TAN (mg/L)	TOTAL LOADING EFF TAN (kg/day)	MIN	MAX	E. Coli (Org/100 mL) (GEOMEAN)	
DEC 22	566.82	18.285	41.369	127.00	2.20	40.23	145.00	6.00	109.71	95.9	2.78	0.31	5.67	88.8	0.46	8.41	7.1	7.1	2	
NOV 22	460.88	15.363	32.911	163.00	2.80	43.02	169.00	6.00	92.18	96.4	2.62	0.38	5.84	85.5	0.56	8.60	6.8	7.2	2	
OCT 22	395.60	12.761	16.007	177.00	2.80	35.73	203.00	6.00	76.57	97.0	2.84	0.46	5.87	83.8	0.16	2.04	6.9	7.2	1	
SEP 22	449.60	14.987	23.663	159.00	2.10	31.47	186.00	4.20	62.95	97.7	3.37	0.35	5.25	89.6	0.14	2.10	7.0	7.1	0	
AUG 22	418.09	13.487	20.040	174.00	2.70	36.41	191.00	5.00	67.44	97.4	3.50	0.47	6.34	86.6	0.59	7.96	6.9	7.1	3	
JUL 22	459.76	14.831	29.727	171.00	3.40	50.43	203.00	6.00	88.99	97.0	2.94	0.39	5.78	86.7	0.86	12.75	6.8	7.1	2	
JUN 22	478.97	15.966	20.583	187.00	3.10	49.49	209.00	6.00	95.80	97.1	3.11	0.45	7.18	85.5	0.63	10.06	6.9	7.1	2	
MAY 22	517.31	16.687	21.372	149.00	3.30	55.07	188.00	7.00	116.81	96.3	2.84	0.41	6.84	85.6	0.63	10.51	6.8	7.0	8	
APR 22	655.16	21.839	34.532	117.00	3.20	69.88	139.00	7.00	152.87	95.0	2.15	0.45	9.83	79.1	2.82	61.59	6.9	7.1	12	
MAR 22	772.45	24.918	43.805	94.00	3.20	79.74	113.00	6.00	149.51	94.7	2.02	0.25	6.23	87.6	4.64	115.62	7.0	7.1	4	
FEB 22	435.43	15.551	41.895	159.00	3.90	60.65	180.00	7.00	108.86	96.1	3.12	0.36	5.60	88.5	4.79	74.49	6.8	6.9	8	
JAN 22	374.61	12.084	13.448	169.00	3.30	39.88	193.00	5.00	60.42	97.4	3.48	0.33	3.99	90.5	0.68	8.22	6.8	6.9	2	
AVG		16.397		153.83	3.00	49.33	176.58	5.93	98.51	96.51	2.90	0.38	6.20	86.49	1.41	26.86			4	
MAX				43.805	187.00	3.90	79.74	209.00	7.00	152.87	97.74	3.50	0.47	9.83		4.79	115.62			
Objective Limit					15.00			15.00				0.80			12.0 (Nov. 1 to Apr. 30) 8.0 (May 1 to Oct. 31)		6.5 - 8.5		100	
Compliance Limit			21.800		25.00	545.00		25.00	545.00			1.00	21.80		18.0 (Nov. 1 to Apr. 30) 16.0 (May 1 to Oct. 31)	392 (Nov. 1 to Apr. 30) 349 (May 1 to Oct. 31)	6.0 - 9.5		200	

MONTH	TOTAL LOADINGS			COMMENTS:
	TOTAL RAW BOD (kg/day)	TOTAL RAW SS (kg/day)	TOTAL RAW PHOS. (kg/day)	
DEC 22	2,322	2,651	51	
NOV 22	2,504	2,596	40	
OCT 22	2,259	2,590	36	
SEP 22	2,383	2,788	51	
AUG 22	2,347	2,576	47	
JUL 22	2,536	3,011	44	
JUN 22	2,986	3,337	50	
MAY 22	2,486	3,137	47	
APR 22	2,555	3,036	47	
MAR 22	2,342	2,816	50	
FEB 22	2,473	2,799	49	
JAN 22	2,042	2,332	42	
AVG	2,436	2,806	46	
MAX	2,986	3,337	51	

2022 WPCC Flow Summary Report

Sampling Point: 012 Primary Effluent

Daily Flow(Inline Instrument)

# samples:	365	min:	10,856.50	m ³ /d
# detects:	365	max:	43,804.90	m ³ /d
# non-detects:	0	avg:	16,396.38	m ³ /d (based on 365 numerical results)
# exceedances:	0	total:	5,984,679.70	m ³

Water Pollution Control Centre Bypass/Plant Overflow/Spill
ECA Number: 7875-9Q7JVZ

Facility Name: WPCC

Report Year: 2022

Bypass/Plant Overflow/Spill Monthly Summary

MONTH	Bypass			Plant Overflow		
	No. of Days (days)	Duration (hours)	Volume (1,000 m ³)	No. of Days (days)	Duration (hours)	Volume (1,000 m ³)
January						
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
TOTAL	0	0	0	0	0	0
Volume of Bypass as % of *			#DIV/0!	Volume of Plant Overflow as % of *		#DIV/0!
Average Daily Flow (ADF)				Average Daily Flow (ADF)		

$$\text{ADF} = \boxed{\quad} (\text{m}^3/\text{d}) \quad \boxed{\quad} 0 (\text{1,000 m}^3/\text{d})$$

Note: % = Volume of Bypass divided by ADF divided by 365

Comments:

Nothing to Report in 2022

Bypass: Means diversion of sewage around one or more unit processes within the sewage treatment plant with the diverted sewage flows being returned to the Sewage Treatment Plant train upstream of the Final Effluent sampling location, and discharging to the environment through Sewage Treatment Plant outfall.

Plant Overflow: Means a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the final effluent sampling location.

Spill: Any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment.

Water Pollution Control Centre Bypass/Plant Overflow/Spill
ECA Number: 7875-9Q7JVZ

Facility Name: WPCC

Report Year: 2022

Bypass/Plant Overflow/Spill Monthly Summary

MONTH	Spill		
	No. of Occurrences		Volume (1,000 m ³)
January			
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			
TOTAL	0		0

Comments:

Nothing to Report in 2022

Bypass: Means diversion of sewage around one or more unit processes within the sewage treatment plant with the diverted sewage flows being returned to the Sewage Treatment Plant train upstream of the Final Effluent sampling location, and discharging to the environment through Sewage Treatment Plant outfall.

Plant Overflow: Means a discharge to the environment from the Sewage Treatment Plant at a location other than the plant outfall or into the plant outfall downstream of the final effluent sampling location.

Spill: Any reportable spill as defined in Ontario Regulation 675/98, bypass or loss of any product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment.

2022 WPCC Annual Chemical Summary

Totals	011 Chemicals		
	062 Alum use (kg/day) (kg)	063 Alum use (L/d) (L)	064 Alum dose (mg/L)
Average	879.78	665.50	58.56
Minimum	39.22*	29.67*	2.21*
Maximum	1,047.62	792.45	92.99
Count	365	365	365
Total	321,118.80	242,909.05	

* Totalizer Error

2022 WPCC Centrifuge Sludge Feed and Cake Disposal Summary Report

	221 Centrifuge - Digested Sludge Feed			222 Centrifuge - Cake	27 Cake Weight
	Sludge Volume to Centrifuge (m³)	% Volatile Solids (%)	% Total Solids (%)	% Total Solids (%)	Cake Weight to Recycling - GFL Environmental Inc (kg)
Totals					
Average	88.81	57.01	1.99	24.94	9,319
Minimum	48.00	41.82	1.30	22.54	5,070
Maximum	177.40	67.56	3.16	28.38	13,310
Count	365	51	51	77	183
Total	32,414.08				1,705,350



TOWER ELECTRONICS
CANADA INC.

Appendix G

CITY OF BROCKVILLE
Annual Calibration Services
Brockville WWTP

September 21, 2022

Patrick Brown
Chief Operator – Wastewater Systems
City of Brockville
1807 County Rd #2 East
Brockville, ON K6V 5T1

RE: Annual Flowmeter Calibrations

Mr. Brown,

Please find attached annual calibration reports for all regulatory and operational devices calibrated on September 1-2, 2022. An overview of the devices calibrated by Tower Electronics Canada (TEC) is included on Page 2 of this report.

An overview of the work completed is as follows:

- Devices were calibrated using NIST traceable standards,
- All instruments are operating within acceptable regulatory tolerances, and

Individual calibration reports are attached, with all calibration specifics identified. If there are any questions or concerns regarding the reports, please contact me and your earliest convenience.

Thanks,

Dan Matchett, Owner
Tower Electronics Canada Inc.
613-847-7623



TOWER ELECTRONICS
CANADA INC.

Appendix G

CITY OF BROCKVILLE
Annual Calibration Services
Brockville WWTP

Meter	Process	Tag ID	Calibration Result	Comments
E&H Promag 53	Alum Flow	FIT 353	Pass	None
E&H Promag 50	-	FIT 367	Pass	None
Krohne SC 080AS	-	FIT 369	Pass	None
Krohne IFC 090	-	FIT 511	Pass	none
Krohne IFC 090	-	FIT 512	Pass	none
Krohne IFC 090	Boiler Effluent	FIT 561	Pass	none
Vega C21	Primary Discharge	FIT 602	Pass	none
Siemens Hydroranger	Bypass	FIT 603	Pass	none
E&H Promag 53	-	FIT 713	Pass	none
E&H Promag 400	RAS	FIT 721	Pass	none
E&H Promag 53	RAS	FIT 722	Pass	none
E&H Promag 53	RAS	FIT 723	Pass	none
E&H Promag 53	RAS	FIT 724	Pass	none
E&H Promag 53	Effluent Water	FIT 834	Pass	none
E&H Promag 53	-	FIT 944	Pass	none
E&H Promag 53	-	FIT 953	Pass	none
E&H Promag 53	-	FIT 973	Pass	none
E&H Promag 53	Pump 972 Flow	FIT 975	Pass	none
E&H Promag 53	Septage Station	FIT 995	Pass	none
Krohne IFC 090	Raw Sludge 1	-	Pass	none
Krohne IFC 090	Raw Sludge 2	-	Pass	none
Krohne SC 080AS	Sludge Decanter North	FIT-366	Pass	none
E & H Promag 400	Leachate High Lift	-	Pass	None
E & H Promag 400	Leachate Overflow	-	Pass	None

Appendix G

Tower Electronics Canada Inc. Calibration Certificate

Customer:

Patrick Brown, Chief Opeator - Wastewater Systems
City of Brockville
1807 County Rd #2 East
Brockville, ON K6V 5T1

Meter Information

Date: 4/20/2022
Location: Brockville WWTP
Meter Under Test FIT-721
Client Tag: FIT-721
Manufacturer: EnH
Model: Promag 400
Serial Number: T307DD16000
Totalizer As Found: -
Totalizer As Left: -

Calibration by:

Dan Matchett

Programming Parameters:

DN Size: DN200
Cal Factor: 1.096
Zero: 1.8

Standards:

Fluke 289 S/N 96220182 NIST Cal Due April 2023

Instrument Type

Magnetic Flow Meter

Calibration Due: May 2023

Method of verification

Endress Hauser Heartbeat Internal Verification

Units: M3/Hour
Zero: 0.00
Span: 9423.00
Totalizer: n/a

<u>Heartbeat Technology Test</u>	<u>Result</u>
Shot Time Symmetry	PASSED
Hold Voltage Symmetry	PASSED
Coil Current Loss	PASSED
Coil Current Stability	PASSED
Coil Resistance	PASSED
Cable Defect 1	PASSED
Cable Defect 2	PASSED
Cable Defect 3	PASSED
External Reference Voltage	PASSED
Linearity of Electrode Circ	PASSED
Offset of Electrode Circuit	PASSED
Input Module	PASSED
Overall Verification Result	PASSED

Verification Completed according to DIN EN ISO 9001:2008 Section 7.6a

Output Test

Current Simulation mA	Reference Reading	Error%
4	4.001	0.006
8	8.001	0.006
12	12.001	0.006
16	15.999	-0.006
20	20.000	0.000
	Average Error%	0.002
	Result:	PASS

Comments:

Unit passes verification within 5% of actual values.

Appendix H

2022 CAPITAL PROGRAM

<u>PROJECT NAME:</u>		Water Pollution Control Centre Equipment Replacement Program	<u>YEAR PROPOSED</u> <u>ITEM NO:</u>	2022 6.2
<u>LOCATION:</u>		Sewage Treatment Plant, Pumping Stations & Collection System		
<u>HISTORY:</u>		LENGTH OF PROJECT: YEAR FIRST INTRODUCED:	Ongoing - through Sewer Rate Reserve 1997	
<u>SCOPE:</u>		Replacement of Capital Equipment for the Water Pollution Control Centre and associated structures and pumping stations. This is to be accomplished from the Sewer Rate Reserve Fund.		
Account #	Cost Centre			Budget
07-5-879395-2010/3010	22WW12	WPCC BUILDINGS AND PROPERTY: HVAC Systems 900 Admin - Upper - Re-Engineering & Balancing		40,000
07-5-879395-2010/3010	22WW13	HVAC Systems - Bldg's 100, 700, 800		25,000
		Dewatering:		
07-5-879395-2010/3010	22WW11	Cake Conveyor System Refurbishment		200,000
07-5-879395-2010/3010	22WW14	Overhead Garage Door Replace Cake Bay (2)		15,000
		Septage:		
07-5-864395-2010/3010	22WW07	Septage Hauler Recording System		25,000
		UV Building:		
07-5-864395-2010/3010	22WW08	Hydraulic Ram System		30,000
		Pumping Stations:		
07-5-864395-2010/3010	22WW09	Pump Station HMI & Control Software		18,000
		Fleet:		
07-5-864395-2010/3010	22WW10	Purchase of 2500 Series Pick-up Truck		65,000
				<hr/> 418,000
Account #		Water Pollution Control Centre	<u>Year Proposed</u>	<u>Budget</u>
				(Remaining) (Original)
		WPCC BUILDING AND PROPERTY:		
07-5-898502-2010	21WW01	Concrete Structure @ Entry to River (Rebuild)	2016	211,016 120,000
07-5-858676-2010	21WW60	Roof Maintenance & Spot Repairs - Miscellaneous Buildings	2021	2,422 15,000
		Primary Clarifiers:		
07-5-858676-2010	21WW63	Replace Long (8), Cross (4) Chain & Flight	2021	4,236 68,000
07-5-858676-2010	21WW64	Replace Chain Drive & Idler Sprockets	2021	7,948 25,000
		Digester Operations:		
07-5-858676-2010	21WW65	Digester #1 Clean out	2021	70,000 70,000
		WPCC GENERAL EQUIPMENT:		
07-5-898502-2010	21WW03	Wireless communication Systems (4 additional stations)	2019	2,377 28,000
07-5-858676-2010	21WW54	ARC Flash Assessment - CSA, Regulatory	2020	0 20,000
		PUMPING STATIONS:		
07-5-858576-2010	21WW58	WEST END PS - Standby Generator & Switchgear Refurbishment	2020	17,500 95,000
07-5-898502-2010	21WW05	PUMP STN'S - SCADA/Instru./Elect. Upgrades	2021	3,857 65,000
07-5-858576-2010	21WW06	Main Pump Station Design	2016	400,000 400,000
		OTHER PROJECT:		
07-5-858676-2010	21WW68	Engineering - Rated Capacity Study	2021	2,100 20,000
07-5-892012-2010	21VW02	New Vehicle Purchase (3/4 Ton)	2021	57,600 57,600

PREPARED BY (PROJECT MANAGER):

Brandon Goddard

DATE:

March 15, 2022



Notice of Modification to Sewage Works

RETAIN COPY OF COMPLETED FORM AS PART OF THE ECA AND SEND A COPY TO THE WATER SUPERVISOR (FOR MUNICIPAL) OR DISTRICT MANAGER (FOR NON-MUNICIPAL SYSTEMS)

Part 1 – Environmental Compliance Approval (ECA) with Limited Operational Flexibility <small>(Insert the ECA's owner, number and issuance date and notice number, which should start with '01' and consecutive numbers thereafter)</small>		
ECA Number	Issuance Date (mm/dd/yy)	Notice number (if applicable)
7875-9Q7JVZ	11/19/14	-
ECA Owner	Municipality	
THE CORPORATION OF THE CITY OF BRICKVILLE	BROCKVILLE	

Part 2: Description of the modifications as part of the Limited Operational Flexibility <small>(Attach a detailed description of the sewage works)</small>	
--	--

- Please See Attached
- PILOT SYSTEM FOR WASTEWATER TREATMENT FACILITY BY NEWTERRA.
- ANTICIPATED ENVIRONMENTAL EFFECTS ARE NEGIGIBLE.

Description shall include:

1. A detail description of the modifications and/or operations to the sewage works (e.g. sewage work component, location, size, equipment type/model, material, process name, etc.)
2. Confirmation that the anticipated environmental effects are negligible.
3. List of updated versions of, or amendments to, all relevant technical documents that are affected by the modifications as applicable, i.e. submission of documentation is not required, but the listing of updated documents is (design brief, drawings, emergency plan, etc.)

Part 3 – Declaration by Professional Engineer	
I hereby declare that I have verified the scope and technical aspects of this modification and confirm that the design:	
1. Has been prepared or reviewed by a Professional Engineer who is licensed to practice in the Province of Ontario;	
2. Has been designed in accordance with the Limited Operational Flexibility as described in the ECA;	
3. Has been designed consistent with Ministry's Design Guidelines, adhering to engineering standards, industry's best management practices, and demonstrating ongoing compliance with s.53 of the Ontario Water Resources Act; and other appropriate regulations.	
I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate	
Name (Print)	PEO License Number
Jeff Kempson	90550328
Signature	Date (mm/dd/yy)
	05/14/20
Name of Employer	
Newterra	

Part 4 – Declaration by Owner	
I hereby declare that:	
1. I am authorized by the Owner to complete this Declaration;	
2. The Owner consents to the modification; and	
3. This modifications to the sewage works are proposed in accordance with the Limited Operational Flexibility as described in the ECA.	
4. The Owner has fulfilled all applicable requirements of the Environmental Assessment Act.	
I hereby declare that to the best of my knowledge, information and belief the information contained in this form is complete and accurate	
Name of Owner Representative (Print)	Owner representative's title (Print)
PHIL WOOD	SUPERVISOR - WASTEWATER SYSTEMS
Owner Representative's Signature	Date (mm/dd/yy)
	06/01/20



Description of Modifications of the Sewage Works

The proposed system falls under the Pilot system definition as per Brockville's Wastewater Treatment Plant ECA:

"1.5 Pilot Systems

- a. Installation of pilot systems for new or existing technologies provided that:
 - i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,
 - ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
 - iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and District Manager three months after completion of the pilot project."

A new Lift Station pump is to be added in to the existing Sewage Pumping Station. As per Section 1.1.a, this new pump will not change the facility Rated Capacity as it will feed the newterra system as a side stream, which will be returned to the same Sewage Pumping Station after treatment.

The Pilot System will consist on a packaged newterra MBR system, housed inside a 45'x8' High-cube modified shipping container. The system will consist of fine screening followed by an Aerobic only configuration, with three (3) membrane trains running in parallel. Sodium Hydroxide and Aluminum Sulphate are to be added to the Aerobic Tank periodically to achieve both pH and Total Phosphorous control. The permeate discharge will run through an absorption media to further reduce Total Phosphorous concentration. This discharge would be combined with the waste activated sludge from the Aerobic Tank and with the overflow from the Screen Tank, to be sent back to the Sewage Pumping Station. Details on flowrates can be found on the P&ID.

The discharged water quality will be monitored to prevent alteration of the composition of the inlet sewage to the Brockville Waste Water Treatment Plant. The pilot plant is not expected to exceed a duration of operation of more than two years and a report will be compiled and sent to the Director and District Manager within three months of the completion of the pilot system's operation.



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Peter Raabe, Director of Engineering & Infrastructure Services
Report Number:	2023-46
Subject:	2023 Municipal Hazardous and Special Products Waste Event

Recommendation

THAT Report SR2023-46, 2023 Municipal Hazardous and Special Products Waste Event be received.

Background

Annually the City of Brockville hosts a Municipal Hazardous and Special Products (HSP) Waste event where residents can dispose of any unwanted household hazardous waste products. The City hires a qualified and licenced operator to provide the necessary services. Drain-All Limited has successfully operated the HSP event in Brockville since 2013. The services provided include but are not limited to:

- Mobilization of their equipment (trailer, containers, forklift, etc.),
- Collecting, sorting, and documenting the hazardous material,
- Removal, transportation, and disposal of the hazardous material,
- Provide the City with a summary of material collected,
- and administration (licenses, permits, documentation, etc.) for the event.

Due to a lack of local contractors with the ability to fulfill the scope of work and accommodate the size of the event, the City will move forward with the 2023 rates proposed by Drain-All Limited under the means of a Sole Source purchase.

The 2023 event is scheduled for August 26th, 2023.

Analysis

Drain-All has efficiently been providing the City with these services since 2013. For 2023 they are proposing to provide the same services they have in the past with an increase equal to the CPI rate of 7%, as posted in August 2022, over last year's rates.

The cost associated with each item is dependent on the types and quantities of material collected. Some materials are more costly to dispose of than others and the more material to dispose, the more it will cost. The City's 2022 MHSW event cost \$66,239.73 (including net HST) with the City receiving \$22,232.47 in funding from producers of HSP

products. Funding, like expenses, are dependent on the type and quantity of materials collected.

If the City were to collect the same amount of hazardous material in 2023 that was collected in 2022, the cost would increase by \$3,107.02 for a total of \$69,346.75 (including net HST).

Financial Implications

This event has been budgeted for in the City's 2023 Solid Waste operating budget. Staff have budgeted \$68,340 to host the event with an estimate of \$17,000 being received through HSP producers.

Policy Alignment

In accordance with the City's Budgetary Control and Procurement Policies, City staff is required to report sole source purchases over \$50,000 to Council.

Conclusion

This report highlights that Drain-All Limited's services to provide the City with all requirements to host the 2023 HSP Waste Event were acquired through Sole Source purchasing and that it will be funded through the City's 2023 Solid Waste operating budget.

Approved by:

Peter Raabe, Director of Engineering &
Infrastructure Services

Sandra MacDonald, City Manager/City Clerk

Status:

Approved - 16 Mar 2023

Approved - 16 Mar 2023



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Emily MacKenzie, Finance & Cemetery Records Coordinator Lynda Ferguson, Director of Finance & IT Services
Report Number:	2023-29
Subject:	2022 Municipal Accommodation Tax - Year End Review

Recommendation

THAT staff report 2023-29 be received for information.

Background

Quarterly updates are provided regarding MAT collection and disbursement, as approved by Council in report 2019-182-12 Municipal Accommodation Tax Disbursement Procedure Consultation.

Between May 1, 2018 - December 31, 2021, the City collected and disbursed \$1,140,907.82 to the Destination Marketing Organization and other eligible tourism entities.

Eligible tourism entities is defined as a non-profit entity whose mandate includes the promotion of tourism in Ontario or in a municipality. In report 2018-128-12 Proposed Allocation of the Municipal Accommodation Tax, eligible tourism entities included the Brockville Arts Centre, Brockville Museum, Aquatarium, municipal Marina, Railway Tunnel, parks and other initiatives.

Funds collected from the Municipal Accommodation Tax are split between the Destination Marketing Organization (50%) and eligible tourism entities (50%).

Analysis

With the lifting of pandemic restrictions and the return of the Tall Ships Festival, many accommodation providers returned to or surpassed pre-pandemic remittance values.

In 2022, the City of Brockville saw remittances from 13 accommodation providers. There was one accommodation provider that did not open for the 2022 season, however may re-open in the future.

Staff will be reviewing the current collection and disbursement method for the Municipal Accommodation Tax. A review of By-law 020-2018, previous reports and any applicable recommendations will be part of a subsequent report mid-2023.

A total of \$206,356.87 was collected during the fourth quarter. As of February 28th, 2023, \$536,388.54 in Municipal Accommodation Tax was remitted to the City for 2022.

Financial Implications

The City of Brockville has received \$536,388.54 in Municipal Accommodation Tax remittances for 2022. A total of \$206,356.87 was collected during the period of October to December 2022.

The amount provided to the Destination Marketing Organization in 2023 will be \$268,194.27.

Policy Alignment

Quarterly updates are provided regarding MAT collection and disbursement, as approved by Council in report 2019-182-12 (Municipal Accommodation Tax Disbursement Procedure Consultation).

Conclusion

The Municipal Accommodation Tax provides valuable funds to both the Destination Marketing Organization (50%) and eligible tourism entities (50%). Since the implementation of the Municipal Accommodation Tax, accommodation providers met or surpassed previous remittance records in 2022.

Approved by:	Status:
Anne Shropshire, Manager, Cultural Services	Approved - 08 Mar 2023
Lynda Ferguson, Director of Finance & IT Services	Approved - 09 Mar 2023
Sandra MacDonald, City Manager/City Clerk	Pending



Staff Report

Report To:	General Committee
Meeting Date:	March 21, 2023
Prepared By:	Lynda Ferguson, Director of Finance & IT Services Chrissy Ward, Supervisor of Accounting Services
Report Number:	2023-39
Subject:	2022 Council Remuneration and Expenses

Recommendation

THAT Report SR2023-39, 2022 Council Remuneration and Expenses be received.

Background

Section 284(1) of the Municipal Act requires the treasurer to provide to the council of the municipality an itemized statement of remuneration and expenses paid in the previous year to members of Council and persons appointed to Boards by the City.

Pursuant to Section 284 (4) of the Municipal Act, the statements which are attached to this report are deemed public records despite the Municipal Freedom of Information and Protection of Privacy Act.

Analysis

Total expenses relating to the Mayor and Council for 2022 were \$215,513. The total expenses relating to appointed members of various boards amounted to \$12,820.

Financial Implications

There are no financial implications to this report.

Policy Alignment

The municipal act requires annual reporting of remuneration and expenses paid to members of council and persons appointed to Boards by the City.

Conclusion

This report fulfills the City's requirement under Section 284 (1) of the Municipal Act.

Approved by:

Status:

Chrissy Ward, Supervisor of Accounting Services	Approved - 15 Mar 2023
Lynda Ferguson, Director of Finance & IT Services	Approved - 15 Mar 2023
Sandra MacDonald, City Manager/City Clerk	Approved - 16 Mar 2023

Attachments:

[SR2023-39 - Mayor & Council Honorariums & Expenses](#)
[SR2023-39 - Committees & Boards Honorariums & Expenses](#)

**ANALYSIS OF REMUNERATION AND EXPENSES PAID
FOR THE YEAR ENDED DECEMBER 31, 2022**

COUNCIL MEMBER	EXPLANATION	HONORARIUM (Incl Taxable Benefit)	EXPENSES PAID	TOTAL
Mayor Mike Kalivas	City Council Benefits (CPP, EHT, Life Insurance) Cellular and Paging Goodwill	41,725	5,324 2,893 297 2,134	47,049
Councillor Mike Kalivas	City Council Benefits (CPP, EHT, Life Insurance)	810	289 289	1,100
Mayor Matt Wren	City Council Benefits (CPP, EHT, Life Insurance) Cellular and Paging Goodwill	1,823	1,897 393 56 1,448	3,721
Councillor Matt Wren	City Council Benefits (CPP, EHT, Life Insurance) Office Supplies	18,474	1,130 1,091 39	19,604
Councillor David Beatty	City Council Benefits (CPP, EHT, Life Insurance) Gift	18,474	519 482 37	18,994
Councillor Philip Deery	City Council Benefits (CPP, EHT, Life Insurance) Office Supplies (business cards)	19,285	1,446 1,407 39	20,731
Councillor Louise Severson	City Council Benefits (CPP, EHT, Life Insurance) Office Supplies	810	66 27 39	876
Councillor Katherine Hobbs	City Council Benefits (CPP, EHT, Life Insurance)	810	149 149	959
Councillor Jeff Earle	City Council Benefits (CPP, EHT, Life Insurance)	19,285	1,407 1,407	20,692
Councillor Jane Fullarton	City Council Benefits (CPP, EHT, Life Insurance)	19,285	1,407 1,407	20,692
Councillor Larry Journal	City Council Benefits (CPP, EHT, Life Insurance) Gifts	18,474	1,239 1,202 37	19,714
Councillor Nathalie Lavergne	City Council Benefits (CPP, EHT, Life Insurance)	19,285	1,407 1,407	20,692
Councillor Cameron Wales	City Council Benefits (CPP, EHT, Life Insurance)	19,285	1,407 1,407	20,692
Total Expenses for Mayor and Council				<u>215,513</u>

**AMOUNT PAID TO OR ON BEHALF OF CITIZENS APPOINTED BY COUNCIL TO VARIOUS BOARDS
FOR THE YEAR ENDED DECEMBER 31, 2022**

CITIZEN	BOARD	DESCRIPTION	AMOUNT
King Yee Jr	Police Services Board	Honorarium Benefits (CPP, EHT, Life Insurance)	5,450 217
Thomas Blanchard	Police Services Board	Honorarium Benefits (CPP, EHT, Life Insurance)	2,400 47
Sonya Jodoin	Police Services Board	Honorarium Benefits (CPP, EHT, Life Insurance)	3,100 92
Hugh Bates	Committee of Adjustment	Honorarium Benefits (CPP, EHT, Life Insurance)	495 10
Shelbi McFarlane	Committee of Adjustment	Honorarium Benefits (CPP, EHT, Life Insurance)	495 10
David Cody	Committee of Adjustment	Honorarium Benefits (CPP, EHT, Life Insurance)	495 10
Total expenses for citizens appointed to various boards			<u>12,820</u>

**ANALYSIS OF REMUNERATION AND EXPENSES PAID
FOR THE YEAR ENDED DECEMBER 31, 2022**

COUNCIL MEMBER	EXPLANATION	HONORARIUM (Incl Taxable Benefit)	EXPENSES PAID	TOTAL
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Total Expenses for Mayor and Council				215,513

**AMOUNT PAID TO OR ON BEHALF OF CITIZENS APPOINTED BY COUNCIL TO VARIOUS BOARDS
FOR THE YEAR ENDED DECEMBER 31, 2022**

CITIZEN	BOARD	DESCRIPTION	AMOUNT
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David Cody	Committee of Adjustment	Honorarium Benefits (CPP, EHT, Life Insurance)	495 10
Total expenses for citizens appointed to various boards			<u>12,820</u>



City of Brockville

Municipal Accessibility Advisory Committee Minutes

1:00 PM - Tuesday, January 24, 2023

City Hall, Boardroom

The Municipal Accessibility Advisory Committee meeting was called to order on Tuesday, January 24, 2023, at 1:00 PM, in the City Hall, Boardroom, with the following present:

Members Present:	Greg Bamber, Ryan Billing, Mary Ann Greenwood, Doug Hone, and Councillor Louise Severson
Regrets:	
Staff:	Dayna Golledge, Administrative Coordinator - Planning/COA Secretary-Treasurer (Recording Secretary)

1. CHAIR'S REMARKS

Chair Billing welcomed committee members. He noted that the last meeting with the Director of Operations, Phil Wood, went well and that it was great to learn about the City's approach in terms of planning with safety, liability and accessibility in mind.

2. DISCLOSURE OF INTEREST

Nil.

3. ADOPTION OF THE MINUTES

Moved by Member Hone

THAT the minutes of the Brockville Municipal Accessibility Advisory Committee meeting dated November 22, 2022 be adopted as circulated.

CARRIED

4. BUSINESS ARISING FROM THE MINUTES

Chair Billings noted that following the meeting with Director of Operations, Phil Wood, it was decided that site visits to Blockhouse Island and Hardy park would be done in the spring to discuss accessibility needs.

Member Greenwood added that the proposed 2023 City Budget did not specify the types of picnic tables being ordered. Chair Billings stated that he would work with P. Wood to attempt to create a policy which factors in accessible tables in future orders.

The committee reviewed discussions held at the last meeting regarding changing the verbiage in City by-laws by removing outdated terms such as "disabled" and "handicapped." The committee would like City staff to investigate the process and possible timing to review and update City by-laws to reflect updated accessibility terms, starting with the most often used by-laws.

Transit fees to and from Sherwood Park Manor and Rosedale Retirement Homes were revisited. Member Greenwood will set up a meeting with the Township of Elizabethtown-Kitley and the retirement home family associations to discuss possible solutions to decrease fees.

5. DELEGATIONS/PRESENTATIONS

Nil.

6. CORRESPONDENCE & COMMUNICATIONS

Nil.

7. STAFF REPORTS

Nil.

8. NEW BUSINESS

1. Request for Exploration of Accessible Beach Mat Installation

Moved by Member Greenwood

THAT staff investigate the viability and costs associated with land preparation and installation of accessible beach matting at St. Lawrence Park and report back to the committee; and

THAT the BMAAC requests the City install an asphalt path and concrete pad, including accessible picnic tables, on the east side of St. Lawrence Park in close proximity to the beach.

CARRIED

The committee discussed engaging City staff in the process of identifying conditions and any restrictions with the beach area at St. Lawrence Park prior to purchasing equipment. Committee members suggested creating parking spaces at the bottom of the hill as well as a paved walkway extension and pad to aid in accessing the beach.

2. Purchase and Development of Water Wheelchair

Moved by Committee member Bamber

THAT BMAAC suggest purchasing one water wheelchair to be used exclusively at the Rotary Park Splash Pad as part of a pilot project; and

THAT City staff be engaged to assist with purchasing the product and implementing the project.

CARRIED

The committee discussed the possibility of having a water wheelchair available for citizens to book and use at the splash pad and/or St. Lawrence Park. Chair Billings noted that other communities run successful programs by using a lock box for key pick up and return. The committee decided that it would be best to start with purchasing a water wheelchair to use at the splash pad first to use as part of a pilot project. The pilot project could provide insight into usage, maintenance and the sign out system.

3. Verbiage of By-Laws

Moved by Member Greenwood

THAT, staff investigate the process for updating City By-law's to reflect current accessibility verbiage; and

THAT staff report back to the Committee with what that process will entail and timelines to appropriately achieve equitable language as it relates to updating the By laws.

CARRIED

9. SUB-COMMITTEE AND MEMBER REPORTS/PROJECT UPDATES

Nil.

10. CAPITAL BUDGET - REVIEW

Nil.

11. ADJOURNMENT

Moved by Member Bamber

THAT the BMAAC meeting be adjourned until its next regular meeting scheduled for March 28, 2023.

CARRIED

The meeting adjourned at 2:34 p.m.



City of Brockville

Tourism Advisory Committee

Minutes

11:30 AM - Tuesday, February 28, 2023

Virtual Meeting

The Tourism Advisory Committee meeting was called to order on Tuesday, February 28, 2023, at 11:30 AM, in the Virtual Meeting, with the following present:

Members Present:	Jessica Barabash, Jennipher Carter, Leslie Casson, Andrea Ellis, and Katherine Hobbs
Regrets:	Madelaine Cirka, Jasmine Jasani, Pam Robertson, and Stacy Roduner
Others:	Nil.
Staff:	Anne Shropshire, Manager, Cultural Services, Chad Davis, Supervisor of Parks & Cemetery Services, Emily MacKenzie, Finance & Cemetery Records Coordinator, and Sandra MacDonald, City Manager/City Clerk

FACILITATOR'S REMARKS

A. Shropshire welcomed everyone to the virtual meeting and wished all Committee members a great start to 2023.

DISCLOSURE OF INTEREST

Nil.

ADOPTION OF THE MINUTES

Moved by Member Carter

THAT the minutes of the Tourism and Culture Committee meeting dated November 21, 2022 be adopted as circulated.

CARRIED

NEW BUSINESS ARISING FROM THE MINUTES

Nil.

DELEGATIONS/PRESENTATIONS

Nil.

CORRESPONDENCE & COMMUNICATIONS

1. Brockville Tourism - 2023 Plan & Budget

A. Shropshire asked Committee members to email any questions that they may have about the document to her.

NEW BUSINESS

1. Discussion - Assessment of Current Tourism Assets & Future Opportunities

Member Ellis referenced water tourism and the need for an accessible kayak launch, along with creation of a paddlers package or other promotional material. Member Carter touched upon product development and existing infrastructure as being key for the future of tourism in Brockville. She expressed frustration with the islands being inaccessible and saw the City's booking portal as a barrier.

Member Casson focused on investing in tourism by using local knowledge. Member Barabash provided insight on accessibility limitations of the islands for visitors who did not bring their own boat.

C. Davis joined the meeting at 11:47 am, with a brief introduction from A. Shropshire.

Councillor Hobbs provided feedback on other municipalities, such as Kingston, upgrading infrastructure for diving tourism. Member Carter asked about a redevelopment plan that included Market Street and Water Street. The City Manager clarified that the Waterfront Committee had provided recommendations as part of their mandate, but that the Committee was dissolved.

Member Ellis proposed the Committee look into water sport rentals. A. Shropshire indicated that any future rental businesses would ideally be a collaboration between the City and local entrepreneurs.

Member Barabash asked if the Committee should be taking the first steps to strengthen stakeholder relationships. A. Shropshire responded that it could be part of future recommendations brought to Council.

Member Barabash noted agriculture tourism as part of any future tourism plan and referenced Maison Maitland. Councillor Hobbs added that businesses without bricks and mortar should also be a point of focus.

The Committee discussed the difference between local vs. regional tourism. Member Barabash asked about a recommendation to work with other municipalities to create a promotional package. Member Casson concurred that many visitors don't isolate municipal boarders. Member Carter noted that a strategic plan would need to be part of the solution, otherwise it would be a group of ideas without any action.

S. MacDonald left the meeting at 12:10 pm.

A. Shropshire asked Member Casson what role St. Lawrence College could play in the future of tourism in the Brockville area. Current data is showing 80% of St. Lawrence College - Brockville Campus students are commuting from within 100 km of the campus. To be part of the solution, there are gaps (i.e., access to services) that need to be addressed.

2. Evaluation of City Owned Assets - Successes & Barriers for Tourism Development

Councillor Hobbs identified the library as an important asset. In the past, visitors to the area were able to get a temporary library card to take out sports equipment.

3. Upcoming Report to Council - Future of Tourism Delivery

A. Shropshire briefly mentioned a report on the future of tourism delivery was presented at the February 21st General Committee meeting. Staff will be reviewing all tourism delivery options in a report to Council, which is expected March 2023.

Member Carter asked A. Shropshire what her opinion was of the options. A. Shropshire indicated that they all have advantages & limitations.

SUB-COMMITTEE AND MEMBER REPORTS/PROJECT UPDATES

Nil.

FINANCIAL REPORT

Nil.

QUESTION PERIOD

Nil.

ADJOURNMENT

Moved by Member Barabash

THAT the Tourism and Culture Committee be adjourned until its next meeting.

CARRIED

The meeting was adjourned at 12:44 pm. The next Tourism Advisory Committee was tentatively set for Monday May 15, 2023 at 11:30 am.

[TAC Notes - February 28th Meeting \(A. Shropshire\)](#)