THE CORPORATION OF THE TOWN OF

GANANOQUE

Canadian Gateway to the 1000 Islands

2020 Annual Water Quality Report

Manager of Public Works, Paul McMunn C.E.T.
Water and Wastewater Superintendent, Don Richards

January 22, 2021

EXECUTIVE SUMMARY

The Corporation of the Town of Gananoque's Public Utilities Division is pleased to provide the 2020 Annual Drinking Water Quality Report. The purpose of this report is to keep the public and Council informed regarding the quality of the Town's drinking water and the performance and maintenance of the water treatment and distribution system.

The Town of Gananoque is dedicated to delivering a safe, reliable, drinking water supply while remaining compliant with all regulatory requirements. Achievement of those commitments is supported by risk-based process evaluation, staff competency, effective communication, and appropriate contingency/incident response measures. The managers and employees of the Town of Gananoque who are directly involved in the production and delivery of safe drinking water are committed to and share the responsibilities for implementing, maintaining, and contributing to the continual improvement of the drinking water quality. The water delivered to the consumers in the Town of Gananoque 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 Gananoque 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.

Paul McMunn
Manager of Public Works

Don Richards
Superintendent Water Wastewater Division

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LIST OF ACRONYMS & DEFINITIONS

AWQI	Adverse Water Quality Incidents Examples of adverse water results: ▪ An analytical result that exceeds a health-based water quality standard ▪ 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 meters 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, 2020 and includes reporting for both the municipal drinking water treatment and distribution system. The Town of Gananoque is the Owner and Operating Authority of the James W. King Drinking Water System.

This report contains three different reports required for the James W. King Drinking Water System:

- 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 Town of Gananoque's website. The 2020 Annual Water Quality Report is available to the public at no charge at the following locations:

- Town of Gananoque's website - https://www.gananoque.ca/
- Town Hall – 30 King Street East Gananoque

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 the 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.

2.2 Summary of Regulatory Requirements

Acts and Regulations

Regulated systems must meet the requirements of Ontario's *Safe Drinking Water Act, 2002*. Most notably, the Drinking Water Systems Regulation provides the 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 the *Safe Drinking Water Act, 2002* to regulate 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 all legislation and regulations relating to the treatment and distribution of drinking water in one document.

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
➢ 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 2020

The Town of Gananoque's Public Utilities Division is responsible for the James W. King Water System under O. Reg. 170/03. Staff's primary responsibility is water treatment and distribution in compliance with all applicable legislation, the municipal drinking water licences and the 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 the individual municipal licences 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 Public Utilities 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 the 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 2020 (as per O. Reg. 170/03, Schedules 6 and 7).

PARAMETER TESTED:	# of Grab Samples	RANGE OF RESULTS:	
		Minimum	Maximum
Turbidity – Raw (NTU)	Continuous monitoring	0.039	11.82
Turbidity – Filter 1 (NTU)	Continuous monitoring	0.023	1.79
Turbidity – Filter 2 (NTU)	Continuous monitoring	0.026	0.198
Pre-Chlorination (mg/l)	Continuous monitoring	0.00	3.24
Post Chlorination (mg/l)	Continuous monitoring	1.84	3.87
Distribution Free Chlorine (mg/l)	556 Grab Samples	0.01	3.72
Distribution Total Chlorine (mg/l)	556 Grab Samples	0.10	4.14

Microbiological Testing:
Microbiological testing completed under the Schedule 10, 11 or 12 of O. Reg. 170/03 during 2020 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	15	1	>200	n/a	n/a	n/a
Treated	52	0	0	0	0	52	<10	40
Distribution	207	0	0	0	0	207	<10	300

Chemical Testing:
The following Tables are a summary of the chemical testing completed in 2020 (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	Jan. 14/20	0.0001	mg/l	No	No
Arsenic	Jan. 14/20	0.0003	mg/l	No	No
Barium	Jan. 14/20	0.022	mg/l	No	No
Boron	Jan. 14/20	0.015	mg/l	No	No
Cadmium	Jan. 14/20	<0.000015	mg/l	No	No

Chromium	Jan. 14/20	<0.002	mg/l	No	No
Fluoride	Jan. 14/20	0.5	mg/l	No	No
Lead	Jan. 14/20	0.00004	mg/l	No	No
Mercury	Jan. 14/20	<0.00002	mg/l	No	No
Selenium	Jan. 14/20	<0.001	mg/l	No	No
Sodium	Jan. 14/20	13.5	mg/l	No	n/a
Uranium	Jan. 14/20	0.00021	mg/l	No	No
Nitrite	Quarterly (Displaying Max)	<0.1	mg/l	No	No
Nitrate	Quarterly (Displaying Max)	0.3	mg/l	No	No

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	Jan. 14/20	<0.3	ug/l	No	No
Atrazine + N-dealkylated metabolites	Jan. 14/20	<0.5	ug/l	No	No
Azinphos-methyl	Jan. 14/20	<1	ug/l	No	No
Benzene	Jan. 14/20	<0.5	ug/l	No	No
Benzo(a)pyrene	Jan. 14/20	<0.005	ug/l	No	No
Bromoxynil	Jan. 14/20	<0.5	ug/l	No	No
Carbaryl	Jan. 14/20	<3	ug/l	No	No
Carbofuran	Jan. 14/20	<1	ug/l	No	No
Carbon Tetrachloride	Jan. 14/20	<0.2	ug/l	No	No
Chlorpyrifos	Jan. 14/20	<0.5	ug/l	No	No
Diazinon	Jan. 14/20	<1	ug/l	No	No
Dicamba	Jan. 14/20	<10	ug/l	No	No
1,2-Dichlorobenzene	Jan. 14/20	<0.5	ug/l	No	No
1,4-Dichlorobenzene	Jan. 14/20	<0.5	ug/l	No	No
1,2-Dichloroethane	Jan. 14/20	<0.5	ug/l	No	No
1,1-Dichloroethylene	Jan. 14/20	<0.5	ug/l	No	No
Dichloromethane	Jan. 14/20	<5	ug/l	No	No
2-4 Dichlorophenol	Jan. 14/20	<0.1	ug/l	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan. 14/20	<10	ug/l	No	No
Diclofop-methyl	Jan. 14/20	<0.9	ug/l	No	No
Dimethoate	Jan. 14/20	<1	ug/l	No	No
Diquat	Jan. 14/20	<5	ug/l	No	No
Diuron	Jan. 14/20	<5	ug/l	No	No
Glyphosate	Jan. 14/20	<25	ug/l	No	No
Malathion	Jan. 14/20	<5	ug/l	No	No
2-Methyl-4-Chlorophenoxyacetic acid (MCPA)	Jan. 14/20	<10	ug/l	No	No
Metolachlor	Jan. 14/20	<3	ug/l	No	No
Metribuzin	Jan. 14/20	<3	ug/l	No	No
Monochlorobenzene	Jan. 14/20	<0.5	ug/l	No	No
Paraquat	Jan. 14/20	<1	ug/l	No	No
Pentachlorophenol	Jan. 14/20	<0.1	ug/l	No	No
Phorate	Jan. 14/20	<0.3	ug/l	No	No
Picloram	Jan. 14/20	<15	ug/l	No	No
Polychlorinated Biphenyls (PCB)	Jan. 14/20	<0.05	ug/l	No	No
Prometryne	Jan. 14/20	<0.1	ug/l	No	No

Simazine	Jan. 14/20	<0.5	ug/l	No	No
THM (NOTE: shows latest annual average)	Quarterly (4 samples)	52.80	ug/l	No	No
HAA's (NOTE: shows latest annual average)	Quarterly (4 samples)	33.75	ug/l	No	No
Terbufos	Jan. 14/20	<0.5	ug/l	No	No
Tetrachloroethylene	Jan. 14/20	<0.5	ug/l	No	No
2,3,4,6-Tetrachlorophenol	Jan. 14/20	<0.1	ug/l	No	No
Triallate	Jan. 14/20	<10	ug/l	No	No
Trichloroethylene	Jan. 14/20	<0.5	ug/l	No	No
2,4,6-Trichlorophenol	Jan. 14/20	<0.1	ug/l	No	No
Trifluralin	Jan. 14/20	<0.5	ug/l	No	No
Vinyl Chloride	Jan. 14/20	<0.2	ug/l	No	No

LEAD SAMPLING: See **Appendix A** for lead service line replacement program

Sampling Period – Winter (December 15th to April 15th)	**Residential**	**Non-Residential**	**Distribution**
Number of individual samples	20	1	2
Number of sample points (locations)	10	1	1
Number of individual sample exceedances	0	0	0
Number of sample points with an exceedance during the period	0	0	0
Percentage of sample points with an exceedance	0	0	0
Is the system required to have a Corrosion Control Plan prepared?	YES		
Do the reduced sampling & frequency requirements apply to the system?	NO		
Do the plumbing sample exemptions apply to the system?	NO		

Sampling Period - Summer (June 15th to October 15th)	**Residential**	**Non-Residential**	**Distribution**
Number of individual samples	22	1	1
Number of sample points (locations)	11	1	1
Number of individual sample exceedances	0	0	0
Number of sample points with an exceedance during the period	0	0	0
Percentage of sample points with an exceedance	0	0	0
Is the system required to have a Corrosion Control Plan prepared?	Yes		
Do the reduced sampling & frequency requirements apply to the system?	NO		
Do the plumbing sample exemptions apply to the system?	NO		

4. GANANOQUE DRINKING WATER SYSTEM

4.1 Water System Description

Drinking-Water System Number:	220001254
Drinking-Water System Name:	Gananoque Drinking Water System
Drinking-Water System Owner:	Town of Gananoque
Accredited Operating Authority:	Town of Gananoque
Municipal Drinking Water Licence:	156-101
Drinking Water Works Permit:	156-201
Permit to Take Water:	85-P-4065
Drinking-Water System Category:	Large Municipal

Design Capacity:	10.2 ML/D
Treatment:	Direct Filtration Class II
Local Distribution:	Class II
Source Water:	St Lawrence River
Population Served:	5,500

4.1.1 Water Treatment Plant

The Town of Gananoque's Water Treatment Plant is a Class II direct filtration facility located at 110 Kate Street, on the St. Lawrence River and serves a population of 5,500.

The treatment process has a design maximum flow rate of 10.22 ML/d and is composed of a number of sub-units:

- low lift pumping
- coagulation and flocculation using aluminum sulfate
- pre/post-filter disinfection with chlorine gas
- two multi-media granular activated carbon filters
- high lift pumping

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, Post Filter (Primary Disinfection)	Brenntag Canada
Aluminum Sulfate	Pre-Filter (Coagulant)	Kemira Water Solutions

4.1.3 Water Distribution System

The Town of Gananoque's Class II Distribution System consists of approximately 48 Km of underground pipes ranging in size from 100 mm in diameter to 400 mm diameter and are made of a variety of materials including, cast iron, ductile iron, poly vinyl chloride, concrete, steel, HDPE and asbestos cement. In addition, there are over 2,810 service connections, 238 fire hydrants and 350 valves. The system also consists of an elevated treated water storage tower.

- Elevated Storage Tank (Water Tower)
  1,327 m^3 overhead storage tank located on Charles Street North. It is a single cell, steel, non-baffled treated water storage tank.

4.2 2020 Flow Summary

In 2020 the maximum or peak daily raw water flow was 186 L/s which occurred in April and was below the permitted maximum amount of 233 L/s as indicated in the table below. In addition, the maximum average daily raw water flow to the WTP was 2,944 m3/day or 29% of its maximum approved treatment capacity of 10,220 m3/day.

Maximum Permitted Water Taking – WTP

Condition:	Maximum Permitted Water Taking
Maximum Amount of Water Taken per Minute	233 (L/sec)
Maximum Amount of Water Taken per Day	10,220 (m3/d)

The summary of the volume of water taken and the flows of the water supplied during the 2020 calendar year is provided in **Appendix B**.

4.3 Adverse 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 2020 there were a total of two (2) reports filed with SAC as summarized below.

AWQI Incident Date	Parameter	Result	Corrective Action	Corrective Action Date
June 29th, 2020 AWQI 150417	Chemical	A chlorine sample at the Gananoque Fire Hall (340 Herbert St) was collected and resulted in less than 0.05mg/L of free chlorine. A continuous flush line was previously installed at this location to help circulate water and maintain an adequate chlorine residual, the flush line was found shut off when it was inspected by the Operator.	All taps and toilets were flushed within the Fire Hall, along with the hydrant on the property until an adequate chlorine residual was achieved, bacteriological samples were then collected. A note was attached to the valve advising the line must remaining flowing at all times and the valve handle was removed.	July 3, 2020 the corrective action notice was submitted to the Ministry.

June 30th, 2020 AWQI 150437	Chemical	A chlorine sample was collected at the James A. Brennan Rd fire hydrant which resulted in less than 0.05mg/L. The low chorine was due to low usage and insufficient exchange of water in the watermain.	All dead ends were flushed in the Town of Gananoque and collected chlorine residuals at each location. Bacteriological samples were collected at 5 dead end locations, all results were clear of contamination.	July 6, 2020 the corrective action notice was submitted to the Ministry. September 1, 2020 a flush station was installed on James A. Brennan Rd.

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 license applicable to that type of facility. All operators in the Public Utilities Division hold the required certifications for treatment and distribution.

4.5 Capital Projects

The 2020 Capital Project Highlights can be found in **Appendix C** of this Report. All works are subject to the annual budget process and approval by Council. A 10 Year Capital Replacement 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 this year, but can be made available upon request.

5. CONCLUSION

The Corporation of the Town of Gananoque serves approximately 5,500 residents. One of the Town'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 the Public Utilities Division at the Water Treatment Plant and throughout the distribution system. This demonstrates that the Town consistently meets or exceeds the standards set by the MECP.

In Ontario, water taking, treatment and distribution are governed by a number of 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 the municipal drinking water treatment system, and covers the period from January 1st to December 31st 2020. As required under this same regulation, the report is prepared prior to March 31st and is filed for review and approved by municipal council.

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 2020. 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 Corporation of the Town of Gananoque 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.

6. KEY CONTACTS

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Appendix A

THE CORPORATION OF THE TOWN OF

GANANOQUE

Canadian Gateway to the 1000 Islands

Lead Water Service Line Replacement Interest Free Loan Program Guidelines

Purpose

Some homes built prior to the mid 1950's have lead levels that exceed the Provincial Standards. The Town's goal is to get the lead out! The purpose of this program is to assist eligible homeowners with replacement of their lead service.

Loan Eligibility

In order to qualify for the program the applicant(s) for the loan must meet the following criteria:

- Must be owner-occupied dwellings of three or less dwelling units;
- All owners of the property must apply for the loan;
- Have obtained a minimum of two quotes for the work from qualified contractors;
- Has not commenced replacement of the service prior to loan approval;
- All property taxes must be paid in full at the time of the application and throughout the loan process;
- There must be no other outstanding debts to the town;
- The owner(s) must complete and sign the agreement; and
- The owner(s) must meet all conditions of this program.

Application approval is subject to the availability of funds at any given time. This program does not apply to commercial or industrial properties. The town reserves the right and absolute discretion to reject any application, which provides two or more quotes, which in the opinion of the town are excessive.

Loan Details

Loans may be available to cover all or part of the estimated cost of replacing the owner's service (located on private property from the water meter to the property line). Loans will not cover any other associated costs such as relocating internal plumbing, repaving of entire driveway, restoration of landscaping, or any other costs that are deemed unnecessary for the replacement of the owner's portion. Applicants will required a Water Service Permit.

Loan Payment to Homeowner

- The Contractor provides invoice(s) to the homeowner upon job completion. Contactor invoices must separately list eligible and ineligible costs and applicable taxes.
- Homeowner pays the Contractor for 100% of the completed work
- Homeowner submits Contractor invoices and proof of payment (Contractor payment receipt) to the Utilities Department
- If the homeowner has followed the agreement, the Utilities Department will forward all correspondence and cheque requisition to the Treasurer for payment.
- The Treasurer will add the annual loan payment to the homeowner's annual final tax bill. The loan is payable in full five years from the date of the issuance of the loan. Should any of the payments be missed, Penalty and Interest will be added monthly on the first business day of each month, at a rate of 15% per annum. If a loan is not paid in full after the five-year term, the town will register a lien against the property; the lien will be noted on the tax roll.

Loan Repayment

Repayment of the loan will be made through the tax account as set out in the agreement signed by the owner(s). Full repayment can be made at anytime during the five-year term. The minimum annual payment will be 1/5 of the amount of the loan over the term of the agreement (i.e. for a $2000 loan, the minimum annual payment would be $400/year). As the loan is applied to the tax roll, it is transferable to the new owner in the event of a sale. The outstanding balance will be included on tax certificates as a Local Improvement Charge.

Application Procedure

The applicant owner(s) will be required to complete an application form provided by the Town. Every person who is a registered owner on title of the property is required to sign the application.

In addition to the completed application form, the applicant owner(s) must provide:

- A minimum of two quotes for the work from qualified contractors. The quotes must detail the work to be completed, and separate out costs for each portion of work (i.e. separate line item prices for service replacement, driveway restoration, yard restoration, internal plumbing modifications up to the water meter, etc). **Any work started or completed prior to the loan application will be ineligible under this program.**
- The Town will review applications and supporting documents and decide whether to approve the loan amount and how much the loan amount will be. The town advises applicants in writing of its decision.
- Applicant obtains a Water Service Permit issued by the Building Department prior to work commencing. Failure to obtain a water service permit prior to work commencing will result in cancellation of any approved loan amounts.
- The contractor must co-ordinate work with the town well in advance. The contractor is responsible to obtain all utility locates for the work for both private property and town owned property.

Information to Accompany Application

- Completed application form signed by all owners;
- A minimum of two quotes for the work from qualified contractors. The quotes must detail what work is to be completed, and separate out costs for each portion of work (i.e. separate line prices for service replacement, driveway restoration, front yard restoration, internal plumbing modifications up to the water meter, etc.)
- Such other information or documentation as may be required by the town.

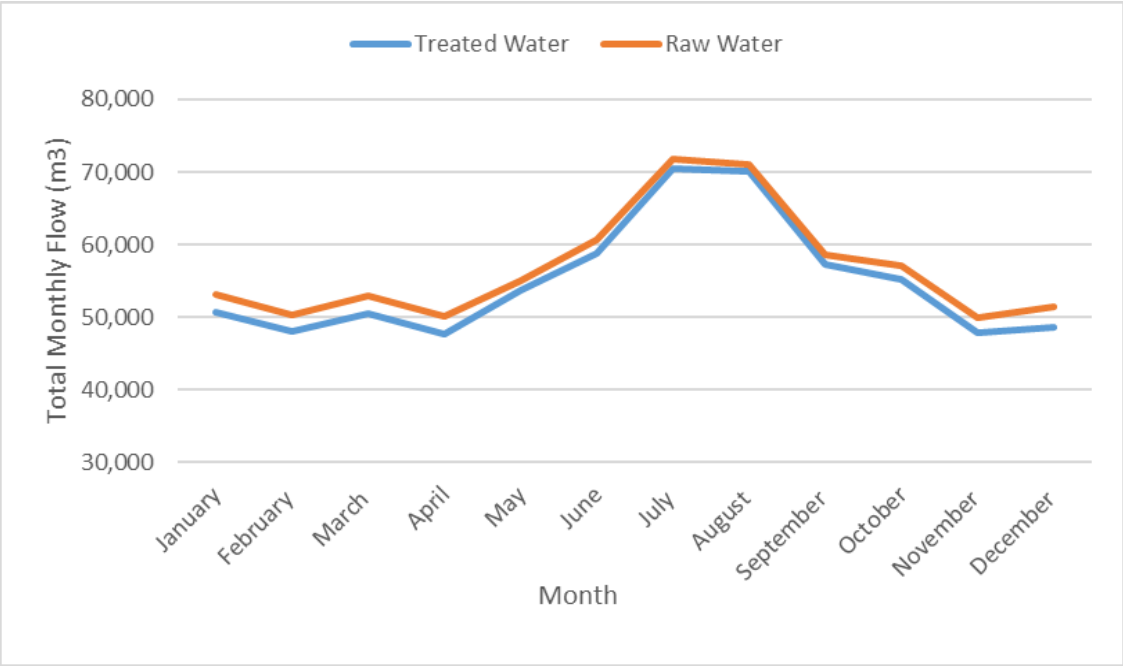
Town Not Liable

- In order to qualify for a loan, the owner agrees that the Town shall not be liable for any damages to the owner's property as a result of any lead water service line replacement.

Appendix B

Below are the summaries of the volume of water taken and the flows of the water supplied during the 2020 calendar year

1. Total Raw and Treated Water Monthly Flows

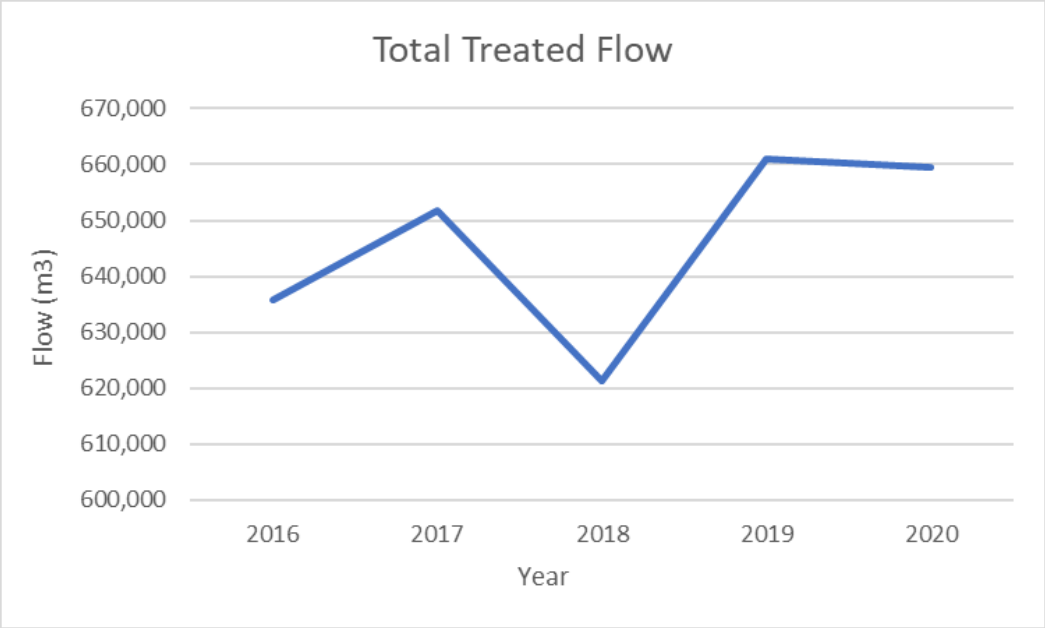


2. Flow Chart

Month	Raw Flow Rated Capacity 10,220 (m3/day), 233 (l/sec)				Treated Flow Rated Capacity 10,220 (m3/day)			
	Ave m3/d	Max m3/d	Max l/s	Total	Ave m3/d	Max m3/d	Max l/s	Total
January	1,714	1,947	181	53,147	1,635	2,068	77	50,694
February	1,735	2,165	149	50,328	1,658	2,138	77	48,080
March	1,708	2,370	151	52,935	1,631	2,042	77	50,569
April	1,672	2,040	150	50,156	1,589	1,981	119	47,682
May	1,777	2,408	163	55,083	1,735	2,216	79	53,782
June	2,023	2,619	150	60,676	1,961	2,827	79	58,839
July	2,319	2,944	150	71,883	2,274	2,848	119	70,508
August	2,291	2,710	147	71,016	2,261	2,959	79	70,077
September	1,951	2,284	186	58,541	1,908	2,372	77	57,232
October	1,841	2,320	147	57,068	1,782	2,316	79	55,238
November	1,667	1,933	145	50,002	1,599	1,962	77	47,956
December	1,657	1,861	145	51,374	1,572	2,098	77	48,722

3. Historical Annual Treated Water Volume

Year	Total Treated Flow
2016	635,769
2017	651,715
2018	621,249
2019	661,014
2020	659,379



Appendix C

2020 CAPITAL PROGRAM WATER

PROJECT NAME:	Water Equipment/Construction	**YEAR PROPOSED:**	**2019**
LOCATION:	Water Treatment Plant / Water Distribution		
HISTORY:	LENGTH OF PROJECT:	On-Going	
SCOPE:	Provides for the capital needs of the Water Treatment Plant and Distribution System Funding is provided through water revenues.		

PROJECT ID:	PROJECT DESCRIPTION:	PRJ. MGR:	BUDGET:
	WATER TREATMENT: BLDG. & PROPERTY MNTCE:		
	WTP Roof		125,000
	HVAC Upgrades		55,000
	WATER TREATMENT PLANT:		
	PLC Programming Upgrades (Filter Control)		15,000
	SCADA Upgrades		15,000
	Turbidity Analyzers		20,000
	Filter Media / Undrain Upgrades		390,000
	Chlorinator Upgrades Raw Water Chlorination		10,000
	SMALL EQUIPMENT		
	MSA Air Packs		10,000
	Small Tools		5,000
	OVERHEAD TANK		
	DISTRIBUTION		
	Pine Street (Full Reconstruction)		409,575
	Hydrant Replacement		25,000
	Flush Stations		25,000
	Corrosion Control (Lead Service Replacement Program)		25,000
	Metering		30,000
	Curb Stop Replacements / Repairs		75,000
	Meter Reading Software Upgrades		35,000
	CONTINGENCY:		
			1,269,575

PREPARED BY (PROJECT MANAGER): D. RICHARDS

DATE: Jan 8, 2021

Appendix D

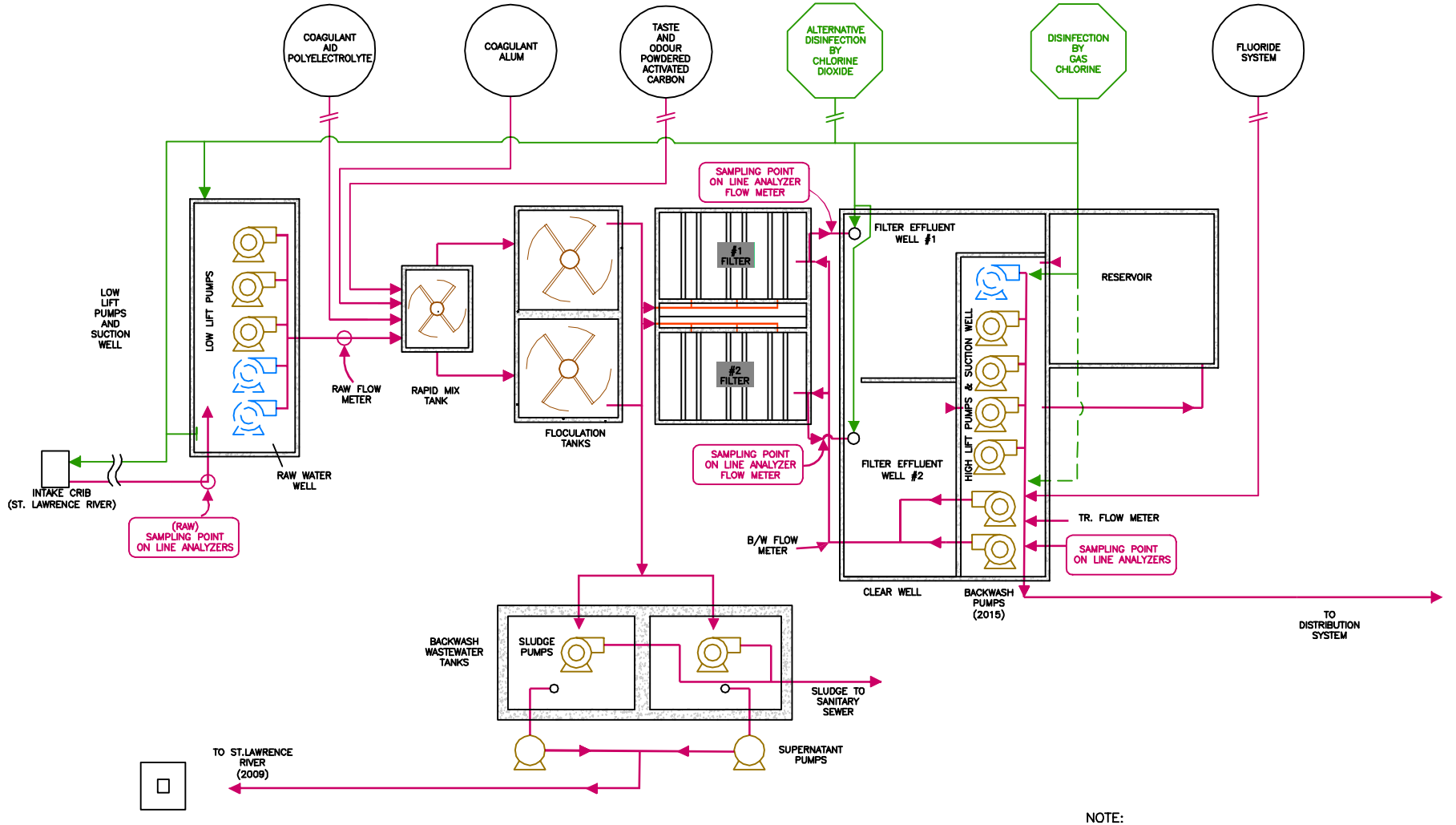
2020 WATER BALANCE REPORT

	(m3)
Water Treatment Plant (2020)	659,379
Accounted for Water	
Water sold to customers (2020)	513,350
Total Billed Water	**513,350**
Total NRW	**146,029**
NRW Accounted for	**22.1%**
WTP Service / Chlorinator Flow / Diesel Cooling	22,830
Watermain Breaks/Service Leaks	1,850
Flush Stations (James Brennan, Castle Grove, EMS, Dempster)	13,101
Fire Fighting and Training	2,509
Hydrant Fire Flow testing and Flushing	41,359
Pine Street	1,570
South Street Condo Dev	10
Castle Grove Dev	119
Water Tower Inspection / Cleaning	928
Bulk Filling / Public Works	500
NRW used (accounted for)	**84,775**
	12.9%
Total Lost Water	**61,254**
Percentage of Lost Water	**9.29%**

Don Richards / Christine Brennan

January 21, 2021

Appendix E



NOTE:
UPDATED FROM TSH/AECOM PROCESS FLOW DIAGRAM
PROJECT NO. 108466 – 6/16/2009

*DASHED LINES FOR FUTURE USE.

NOT IN SERVICE OR REMOVED

PROJECT:

WATER TREATMENT FACILITIES

GANANOQUE, ONTARIO

DRAWING:

PROCESS FLOW DIAGRAM

J.L.Richards
ENGINEERS · ARCHITECTS · PLANNERS
www.jlrichards.ca

DESIGN:	SS/OTHERS
DRAWN:	KTK/OTHERS
CHECKED:	
JLR #:	27038-07

DRAWING #:

FIGURE 1

File Location: R:\27000\27038-06 Gananoque Assest Inventory\JLR DWG\Civil\Process Flow Chart.dwg

PLOT DATE: February 2, 2017 2:21:50 PM