Town of Collingwood

Drinking Water System
2025 Annual Summary Report

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Town of Collingwood Quality Management Policy

The Corporation of the Town of Collingwood owns and operates the Collingwood Drinking Water System and is committed to:

- Maintaining and continually improving our Quality Management System.
- Providing our consumers with a safe, reliable supply of potable drinking water.
- Meeting or exceeding all applicable legislation, regulations and other requirements.
- Communicating openly and effectively with employees, Council and the public; and
- Providing services in an environmentally responsible manner.

Issue Date: February 10, 2021.
Revision: 4

MSF-P-01

1. Introduction

This report has been prepared in accordance with the reporting requirements of the Safe Drinking Water Act 2002 O. Reg. 170/03, s.11 and Schedule 22.

This report is presented to the Council and posted to the Town's website on or before February 28, 2026. It is available on the Town of Collingwood website in PDF format at https://www.collingwood.ca/health-well-being/drinking-water-treatment-distribution-0.

A printed copy of this report will be provided free of charge when requested through the Town's Water and Wastewater Division:
Phone: (705) 445-1030
Email: waterwastewater@collingwood.ca

Drinking Water System Description

Drinking Water System Number	220001165
Drinking Water Works Permit	100-201 Issue 5 January 3, 2025
Municipal Drinking Water License (MDWL)	100-101 Issue 6 January 3, 2025
Permit to Take Water	0385-C8CNW8 issued November 4, 2021
Drinking Water System Name	Collingwood Drinking Water System
Drinking Water System Owner	Town of Collingwood
Drinking Water System Category	Large Municipal Residential
Water Treatment Subsystem Class	Class 2 Certificate No. 3009 issued November 15, 2005
Water Distribution Subsystem Class	Class 3 Certificate No. 277 issued May 22, 2019
Rated Capacity	31,140 m^3/d
Period being Reported	January 1, 2025 to December 31, 2025

Other Drinking Water Systems that receive drinking water from Raymond A. Barker

Ultrafiltration Plant:

Drinking Water System Owner	Drinking Water System Number
Town of New Tecumseth	220001174
Town of the Blue Mountains	220001762
Township of Essa (Baxter)	260086866
Township of Essa (Angus)	260001026
Clearview Township (New Lowell)	220003706

A copy of this report will be provided to the drinking water system owners listed above.

The Collingwood Drinking Water System (CDWS) consists of the Raymond A Barker Water Treatment Plant (RAB) and the Collingwood Distribution System.

The RAB Water Treatment Plant is an ultrafiltration membrane surface water treatment plant which was built in 1998. The Town is currently undertaking a treatment plant expansion. Phase 1 of the expansion will increase the treatment capacity to 59,000 m³ per day. The expansion project will allow additional drinking water to be piped south and is anticipated to be completed by 2031.

The raw water source is surface water from Georgian Bay, Lake Huron. Surface water is taken from Nottawasaga Bay through a submerged inlet structure, approximately 765 m offshore. Raw water flows by gravity through a 1067 mm diameter intake pipe and surge chamber into the raw water well. The raw water then flows to the membrane distribution channel in the main building.

The raw water is distributed to six (6) filter basins or treatment trains. Five (5) trains are fed by gravity and house the 500 series ZeeWeed ultrafiltration membrane modules. One (1) train consists of 1000 series ZeeWeed ultrafiltration membrane and is fed with a low lift vertical turbine pump and a 5-micron strainer with automatic cleaner (Mobile Package Plant).

Each treatment train of the membrane filtration system has membrane modules and a permeate/backpulse pump. The permeate pump creates a slight vacuum which sucks clean (permeate) water through the membrane leaving any particulate matter greater than 0.035 microns in the process tank.

The permeate water is then disinfected using UV and chlorine. Filtered water passes through a UV disinfection unit, then receives chlorine gas induction before entering two (2) 413 m³ chlorine contact chambers (total volume 826 m³), after which it flows by gravity into the clear well. The finished water is pumped either directly into the Collingwood Distribution System, which supplies water to the Town of Collingwood and the Town of the Blue Mountains. The Regional Pipeline supplies water to the Town of New Tecumseth through a 450mm diameter transmission main.

The ultrafiltration membranes are cleaned through regular cycles that reverse the flow of clean

water from the backpulse tank through the membranes under positive pressure. This backpulsing removes accumulated particles, which are discharged to waste and can be directed to the sewer or returned to the lake. Membrane cleanliness is further maintained by air scouring, where air injected at the bottom of the tank rises through the membranes, removing residual solids and keeping concentrated material suspended prior to reject.

The RAB is continually monitored 24 hours a day 365 days a year through the SCADA (Supervisory Control and Data Acquisition) system. The SCADA will send an alarm to an on-call operator if any part of the process requires attention.

The Collingwood Distribution System is comprised of approximately 173 km of concrete, ductile and cast iron watermains, ranging in size from 50 mm to 600 mm in diameter, 1443 fire hydrants and 2283 isolation valves in three pressure zones. There are also 86 km of private watermains with 246 private hydrants.

The Water Tower is an elevated storage tank with a capacity of 2273 m^3 supplying pressure to Zone 1. The Water Tower has re-chlorination capabilities, on-line monitoring and a generator for emergency backup power.

The Carmichael Reservoir is an in-ground reservoir and booster pumping station with a capacity of 6800 m^3 supplying pressure Zone 1 and Zone 1 West. The Carmichael Reservoir has re-chlorination capabilities, on-line monitoring and standby generator for emergency backup power.

The Davey Reservoir is an in-ground reservoir and booster pumping station with a capacity of 2565 m^3 supplying pressure Zone 2. The Davey reservoir has re-chlorination capabilities, on-line monitoring and standby generator for emergency backup power.

The Osler Bluff Road booster pumping station helps to regulate the pressure in the west side of Zone 2. This station has a standby generator for emergency backup power.

The Georgian Meadows booster pumping station helps to regulate the pressure in the Georgian Meadows subdivision.

1. Water Treatment Chemicals Used

Chlorine Gas
Sodium Hypochlorite (12%)

2. Significant Expenses

The significant expenses in 2025 included the installation and repair of required equipment, repairs to watermain breaks, replacement of required equipment, and costs related to studies and engineering.

Details of the significant expenses incurred to operate and maintain the drinking water system in 2025 are provided below.

Description	Amount
Replacement of Two Permeate Pumps (VFD) at the Water Treatment Plant	$15,770
Installation of New Concentrate and Permeate Pump Guarding at the Water Treatment Plant	$18,202
Repair of Two Concentrate Pumps at the Water Treatment Plant	$12,185
Large Tools	$37,713
Emergency Raw Water Pump Repair (ZW1000)	$15,960
Emergency Repair of High Lift Pump No. 5 at Davey Reservoir	$26,913
Davey Reservoir Surge Vessel Bladder Installation	$18,305
Emergency Water Tower Flow Meter Replacement	$10,954
Replacement of Electric Valve Turner	$14,312
Installation of Three New Fire Hydrants	$11,350
Contracted Water Main Services	$115,102
Contracted Water Service Connections	$81,266
Water Main Materials	$23,983
Water Service Connections Materials	$32,485
Installation of New Water Meters	$48,000
Pretty River Parkway and Hume Street Watermain Break Repair	$40,000
Mountain Road Watermain Break Repair	$30,000
Georgian Meadows Booster Pumping Station Upgrades	$303,003
Highway 26 Watermain Relining	$1,331,744
Davey Reservoir PLC Upgrades	$76,560
Water Treatment Plant Expansion	$26,791,418
Carmichael Reservoir Upgrades (Construction and Engineering)	$1,307,302
Total	**$30,362,528**

3. Notices Submitted to the Ministry of Environment, Conservation and Parks (MECP)

Subsection 18(1) of the Safe Drinking Water Act and/or Section 16-4 of Schedule 16 of O. Reg.170/03 requires notices on water incidents to be submitted to Spills Action Centre.

There were no adverse water incidents in 2025. Section 12, *Incidents of Regulatory Non-Compliance* details the watermain break and subsequent Boil Water Advisory issued in the Town of Collingwood in December 2025. All notifications associated with the incident were submitted in accordance with regulatory requirements.

4. Microbiological Testing as per Schedule 10 of O. Reg. 170/03

Type	Number of Samples	Range E. Coli Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Results	
Raw	53	0	10	0	49	n/a	n/a	n/a
Treated	53	0	0	0	0	53	<10	10
Distribution	540	0	0	0	0	271	<10	20

5. Operational Testing as per Schedule 7 of O. Reg. 170/03

Free chlorine residual and turbidity are monitored at various locations in the treatment and distribution system in accordance with Schedule 7 of O. Reg. 170/03.

Free chlorine residuals remained above the minimum concentration of 0.05 mg/L throughout the water distribution system in 2025.

Parameter	Number of Samples	Units	Min	Max	Avg
Turbidity - Raw	Continuous Monitoring	NTU	0.18	100	1.40
Turbidity - Treated	Continuous Monitoring	NTU	0.02	0.78	0.03
Free Chlorine - Treated	Continuous Monitoring	mg/L	1.13	2.42	1.59
Free Chlorine – Distribution Davey Reservoir	Continuous Monitoring	mg/L	0.70	2.87	1.29
Free Chlorine – Distribution - Tower	Continuous Monitoring	mg/L	0.66	2.98	1.40
Free Chlorine – Distribution Carmichael Reservoir	Continuous Monitoring	mg/L	0.66	1.98	1.36
Free Chlorine – Distribution Grab Samples	1108	mg/L	0.19	2.2	0.99

6. Additional Testing and Sampling

Environmental Discharges

Condition 1.5 of Schedule C of the Town's MDWL requires that environmental discharges be monitored for total chlorine and suspended solids.

Regulatory relief was granted in December 2024 MDWL to allow an annual running average total chlorine concentration of 0.05 mg/L until the plant expansion enables compliance with the original 0.02 mg/L requirement. The existing facility cannot meet the former limit, but the planned upgrade will include de-chlorination of the raw water discharge. In 2025, the monthly running annual average total chlorine concentration ranged from 0.03 mg/L to 0.04 mg/L, remaining below the temporary allowable limit.

The MDWL requires that suspended solids concentrations in discharges to the environment have an annual running average of 25 mg/L or less. The annual running average of suspended solids in 2025 ranged from 6.2 mg/L to 8.9 mg/L, which is well below the MDWL limit.

Total Chlorine (mg/L) [a]	**Suspended Solids (mg/L) [a]**	
MDWL Limit	**0.05[1]**	**25**
Jan	0.03	8.9
Feb	0.03	8.2
Mar	0.03	8.0
April	0.03	8.1
May	0.03	8.0
June	0.03	7.8
July	0.03	7.7
Aug	0.03	7.4
Sept	0.03	7.4
Oct	0.04	7.1
Nov	0.04	7.1
Dec	0.04	6.2

Section 6 of Schedule C of the Town's MDWL requires that a Harmful Algal Bloom monitoring plan be developed and implemented. As part of this plan, Microcystin testing is conducted between June 1 and October 31 to detect blue-green algal blooms in raw water samples. Microcystin was not detected in any of the raw water samples in 2025.

Parameter	**Units**	**Jun 10, 2025**	**Jul 8, 2025**	**Aug 12, 2025**	**Sep 9, 2025**	**Oct 7, 2025**	**MAC**	**Exceedance**
Microcystin	µg/L	<0.15	<0.15	<0.15	<0.15	<0.15	1.5	No

MAC – Maximum Acceptable Concentration for treated water

[1] Temporary Regulatory relief as of December 2024 allows the annual running average limit of 0.05 mg/L.
Underline - Exceedance of MDWL Limit
a – Running Annual Average Concentration

7. Summary of Schedule 13 Inorganic Parameters Tested

Schedule 13 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that at least one water sample is collected every 12 months and is tested for the inorganic parameters listed in Schedule 23 of the Regulation if the drinking water system obtains water from a raw water supply that is surface water. If a test result for a parameter exceeds half of the drinking water quality standard prescribed for the parameter in the Ontario Drinking Water Quality Standards, the frequency of sampling and testing for that parameter needs to be increased so that at least one water sample is taken and tested every three months.

Treated drinking water samples were collected from RAB on February 4, 2025, and tested for the Schedule 23 inorganic parameters. There were no exceedances of any Schedule 23 inorganic parameters in 2025, and all results were less than half of the maximum acceptable concentration for the specified parameters.

Parameter	Units	4-Feb-25	MAC	Exceedance
Antimony	µg/L	<0.5	**6**	**No**
Arsenic	µg/L	<1	**10**	**No**
Barium	µg/L	13	**1000**	**No**
Boron	µg/L	14	**5000**	**No**
Cadmium	µg/L	<0.1	**5**	**No**
Chromium	µg/L	<1	**50**	**No**
Mercury	µg/L	<0.1	**1**	**No**
Selenium	µg/L	0.2	**50**	**No**
Uranium	µg/L	<1	**20**	**No**

MAC – Maximum Acceptable Concentration AO – Aesthetic Objective
ND – Not Detected

8. Summary of Schedule 13 Organic Parameters Tested

Schedule 13 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that at least one water sample is collected every 12 months and is tested for every organic parameter listed in Schedule 24 of the Regulation if the drinking water system obtains water from a raw water supply that is surface water. If a test result for a parameter exceeds half of the drinking water quality standard prescribed for the parameter in the Ontario Drinking Water Quality Standards, the frequency of sampling and testing for that parameter needs to be increased so that at least one water sample is taken and tested every three months.

Treated drinking water samples were collected from RAB on February 4 and tested for the Schedule 24 organic parameters. There were no exceedances of any Schedule 24 organic parameters in 2025, and all results were less than half of the maximum acceptable concentration for the specified parameters.

Parameter	Units	4-Feb-25	MAC	Exceedance
Alachlor	µg/L	<0.247	**5**	**No**
Atrazine + N-dealkylated metabodies	µg/L	<0.5	**5**	**No**
Azinphos-methyl	µg/L	<0.185	**20**	**No**
Benzene	µg/L	<0.1	**1**	**No**
Benzo(a)pyrene	µg/L	<0.01	**0.01**	**No**
Bromoxynil	µg/L	<0.0876	**5**	**No**
Carbaryl	µg/L	<2	**90**	**No**
Carbofuran	µg/L	<4	**90**	**No**
Carbon Tetrachloride	µg/L	<0.2	**2**	**No**
Chlorpyrifos	µg/L	<0.185	**90**	**No**
Diazinon	µg/L	<0.185	**20**	**No**
Dicamba	µg/L	<0.0766	**120**	**No**
1,2-Dichlorobenzene	µg/L	<0.5	**200**	**No**
1,4-Dichlorobenzene	µg/L	<0.5	**5**	**No**
1,2-Dichloroethane	µg/L	<0.5	**5**	**No**
1,1-Dichloroethylene	µg/L	<0.5	**14**	**No**
Dichloromethane	µg/L	<5	**50**	**No**
2,4-Dichlorophenol	µg/L	<0.2	**900**	**No**
2,4-D	µg/L	<0.328	**100**	**No**
Diclofop-methyl	µg/L	<0.109	**9**	**No**
Dimethoate	µg/L	<0.185	**20**	**No**
Diquat	µg/L	<0.2	**70**	**No**
Diuron	µg/L	<7	**150**	**No**
Glyphosate	µg/L	<20	**280**	**No**
Malathion	µg/L	<0.185	**190**	**No**

2-Methyl-4-chlorophenoxyacetic acid (MCPA)	µg/L	<5.47	**100**	**No**
Metolachlor	µg/L	<0.123	**50**	**No**
Metribuzin	µg/L	<0.123	**80**	**No**
Monochlorobenzene	µg/L	<0.5	**80**	**No**
Paraquat	µg/L	<0.2	**10**	**No**
Pentachlorophenol	µg/L	<0.2	**60**	**No**
Phorate	µg/L	<0.123	**2**	**No**
Picloram	µg/L	<0.0766	**190**	**No**
PCB	µg/L	<0.06	**3**	**No**
Prometryne	µg/L	<0.0617	**1**	**No**
Simazine	µg/L	<0.185	**10**	**No**
Terbufos	µg/L	<0.123	**1**	**No**
Tetrachloroethylene (perchloroethylene)	µg/L	<0.5	**10**	**No**
2,3,4,6-Tetrachlorophenol	µg/L	<0.2	**100**	**No**
Triallate	µg/L	<0.123	**230**	**No**
Trichloroethylene	µg/L	<0.5	**5**	**No**
2,4,6, -Trichlorphenol	µg/L	<0.2	**5**	**No**
Trifluralin	µg/L	<0.123	**45**	**No**
Vinyl Chloride	µg/L	<0.1	**1**	**No**

MAC – Maximum Acceptable Concentration AO – Aesthetic Objective
ND – Not Detected.

9. Other Schedule 13 Water Quality Testing

Schedule 13 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that:

- At least one water sample is taken every three months and tested for nitrate and nitrite.
- At least one water sample is taken every 60 months and tested for sodium.
- At least one water sample is taken at least once every 60 months and tested for fluoride.
- At least one distribution sample is taken in each calendar quarter and tested for halo acetic acids (HAAs).
- At least one distribution sample is taken in each calendar quarter and tested for trihalomethanes (THMs).

Parameter	Units	Feb 4, 2025	May 6, 2025	Aug 5, 2025	Nov 4, 2025	MAC	Exceedance
Nitrite	mg/L	<0.05	<0.05	<0.05	<0.05	**1.0**	**No**
Nitrate	mg/L	0.27	0.26	0.22	0.08	**10.0**	**No**
Fluoride	mg/L		<0.05	-	-	**1.5**	**No**
Sodium	mg/L	-	4.65	-	-	**20[a]**	**n/a**

MAC – Maximum Acceptable Concentration AO – Aesthetic Objective

Parameter	Units	1st Quarter [a]	2nd Quarter	3rd Quarter [a]	4th Quarter [a]	MAC [a]	Exceedance
HAAs	µg/L	24	22.3	20.8	22.5	**80**	**No**
THMs	µg/L	33.1	32.6	34.3	39.1	**100**	**No**

MAC – Maximum Acceptable Concentration a – Running Annual Average Concentration

10. Schedule 15 Water Quality Testing:

Schedule 15 of O. Reg. 170/03 requires that the owner and the operating authority of a large municipal residential system ensure that samples are collected from the distribution system between December 15 and April 15 and between June 15 and October 15, and tested for:

- Total alkalinity and pH each year; and
- Lead every third 12-month period.

Lead samples were collected from the Collingwood distribution system in 2024. The next round of lead sampling is required in 2027. There were no exceedances of any Schedule 15 parameters in 2025.

Parameter	Units	2025	Feb 4 2025	Feb 24, 2025	Aug 12, 2025	MAC	OG	Exceedance
Lead[2]	µg/L	<0.1 – 0.4	-	-	-	**10**	**-**	**No**
Alkalinity	mg/L	64-72	64-68	66-68	70-72	**-**	**30-500**	**No**
pH	-	6.9-8.4	7.6-7.8	6.9-7.3	8.1-8.4	**-**	**6.5-8.5**	**No**

11. Inorganic or Organic Parameter(s) Exceeding Half the Standard

The Standard for Organic and inorganic parameter(s), from Schedule 23 and 24, that exceeded half the standard prescribed in Schedule 2 of O. Reg. 169/03 Ontario Drinking Water Quality Standards. The table below demonstrates that none of the parameters exceeded half the standard.

Parameter	Result Value	Unit of Measure	Date of Sample
None	n/a	n/a	n/a

[2] Lead samples result 2024

MAC – Maximum Acceptable Concentration

OG- Operational Guideline

12. Incidents of Regulatory Non-Compliance

The Ministry of the Environment, Conservation and Parks (MECP) completed its annual inspection in June 2025. No non-compliances were identified.

The MECP Inspector noted a single instance in which the SCADA review was held at 73.2 hours in exceedance of the 72-hour requirement. This was considered an administrative error, and a refresher on internal protocols related to 72-hour SCADA review was completed on June 17, 2025.

On December 12, 2025, the pressure in the drinking water system dropped below 20 PSI in certain areas of the Town of Collingwood due to the watermain break at the intersection of Highway 26 and Pretty River Parkway. The affected areas were quickly isolated and the watermain repaired.

Microbiological sampling was conducted, and all the results were compliant with safety standards. As a precaution, the incident was reported to the SAC, the MECP and Simcoe Muskoka District Health Unit (SMDHU). The SMDHU issued Boil Water Advisory Order from December 13, 2025, to December 15, 2025, as an extra precaution. An initial Order issued on December 12, 2025 was rescinded on December 13, 2025. The MECP did not consider this incident as an adverse water quality event.

Based on the methodology established by the MECP, the Collingwood Drinking Water System received a 0% Inspection Risk Rating and a 100% final inspection score for 2025.

13. Raw Water Taking

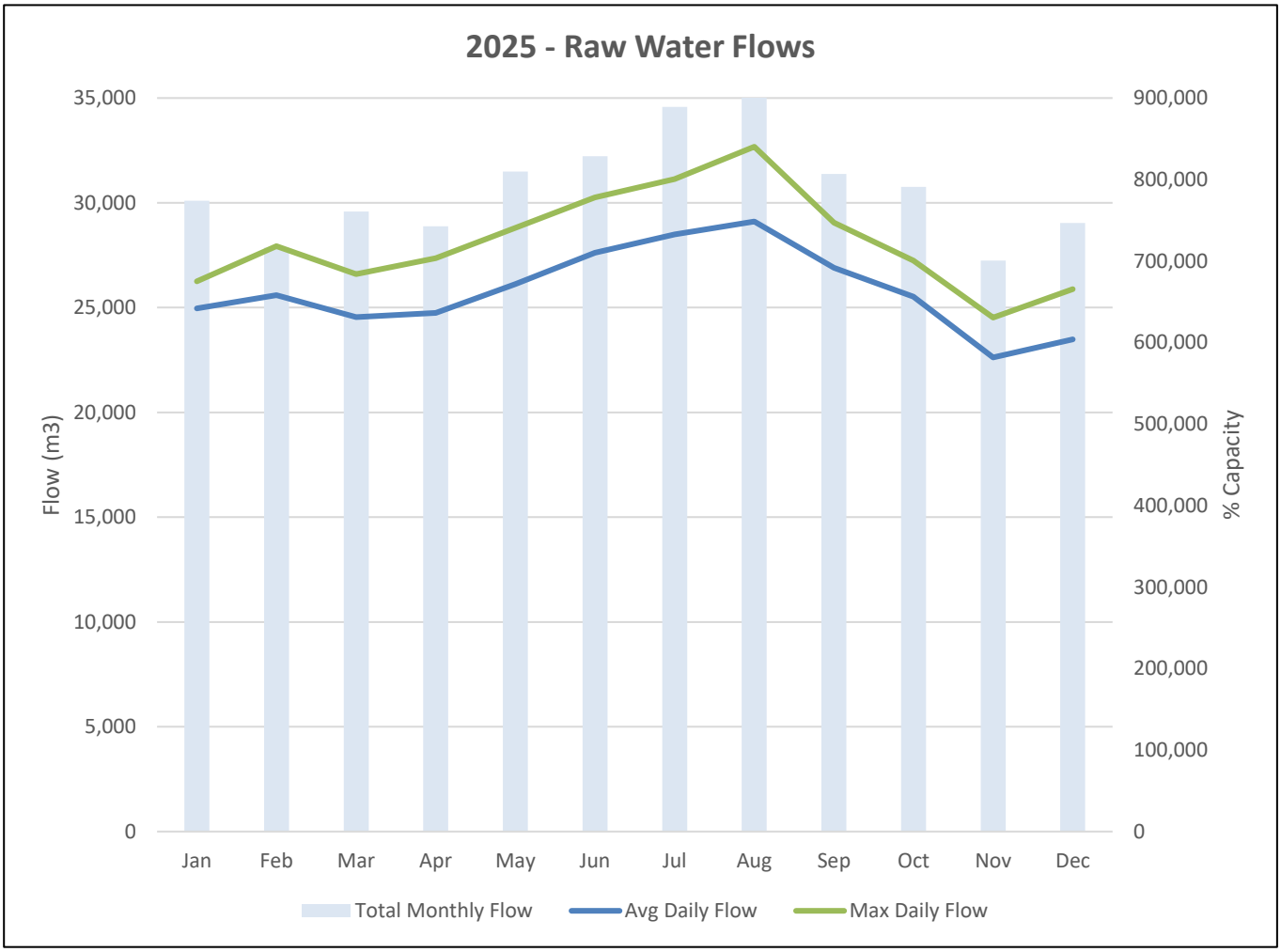
The raw water supply is abundant, providing a reliable source of potable water to meet the system's demands. The source is Nottawasaga Bay, which is part of Lake Huron in the Georgian Bay region.

Throughout 2025, all water takings at the Collingwood Water Treatment Plant were within the maximum daily permitted rate of 68,250 m^3, as established by Permit to Take Water (PTTW) 0385-C8CNW8.

2025 Raw Water Taking Summary	
Total Annual Taking (m^3)	9,468,962
Average Daily Taking (m^3/d)	25,811
Minimum Daily Taking (m^3/d)	14,193
Maximum Daily Taking (m^3/d)	32,677
Maximum Daily Taking (% Capacity)	48%

Raw Water Taking

Month	Monthly Total m^3	Daily Avg m^3	Min Day m^3	Max Day m^3	Max Day Capacity
January	774,053	24,969	17,499	26,255	38%
February	716,566	25,592	17,006	27,940	41%
March	760,897	24,545	17,110	26,596	39%
April	742,619	24,754	19,278	27,360	40%
May	809,870	26,125	24,622	28,810	42%
June	828,546	27,618	25,783	30,255	44%
July	888,946	28,497	23,722	31,133	46%
August	902,365	29,109	23,790	32,677	48%
September	806,936	26,898	23,399	29,049	43%
October	790,974	25,515	20,533	27,249	40%
November	700,439	22,622	14,193	24,524	36%
December	746,751	23,485	20,179	25,880	38%

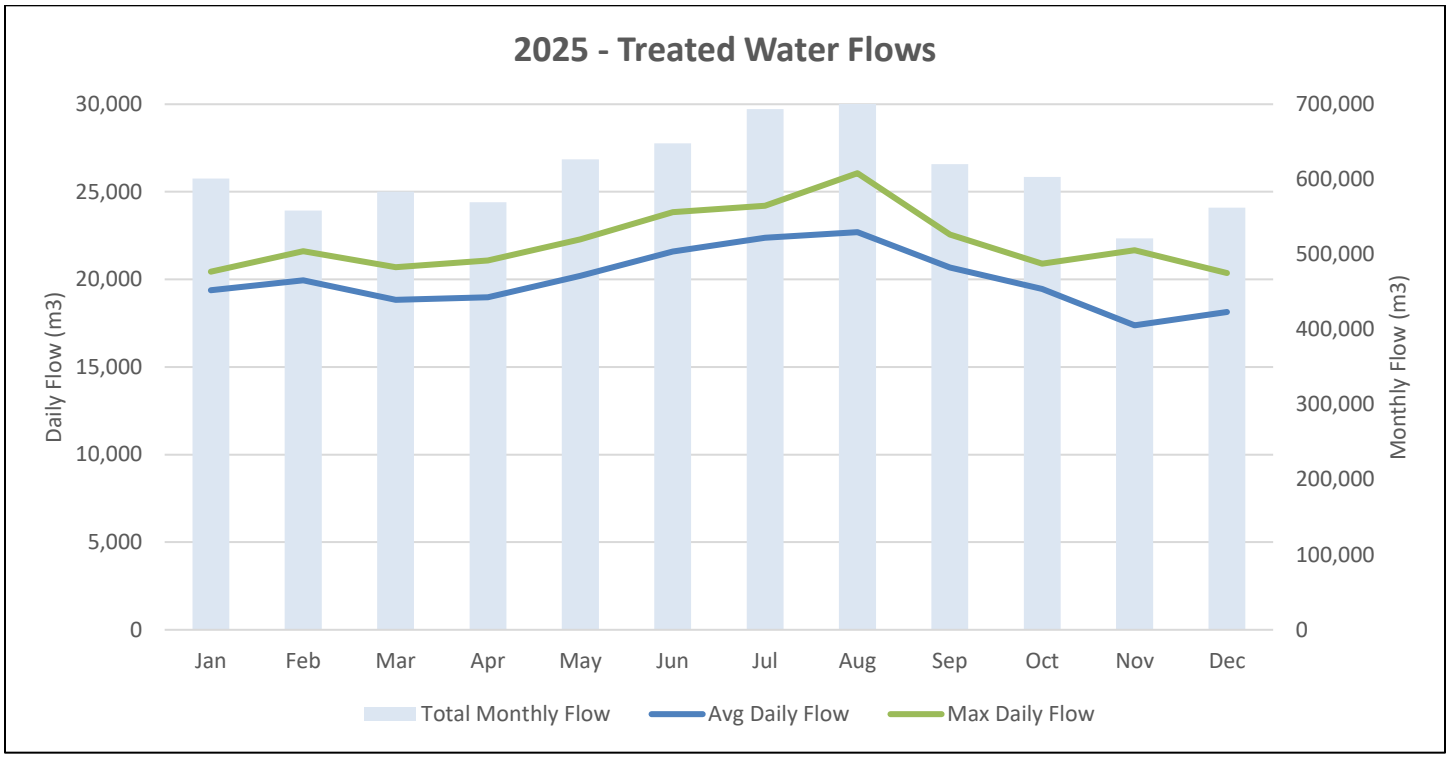


14. Treated Water Production Rates

Schedule 22 of O. Reg. 170/03 requires the owner to provide a summary of the quantities and flow rates of water supplied for the reporting period, and a comparison of these flows to the rated capacity and flow rates of the system's approval, drinking water works permit or municipal drinking water licence.

The rated treatment capacity for the Collingwood Water Treatment Plant is 31,140 m^3/day. In 2025, treated water production rates were as high as 26,064 m^3/d (84% of the treatment capacity). 2025 production rates are comparable to production rates in the previous five years.

Treated Water Flows					
Month	**Monthly Total (m^3)**	**Daily Avg (m^3)**	**Max Day (m^3)**	**Treatment Capacity (m^3/d)**	**% Rated Capacity**
January	600,836	19,382	20,441	31,140	66%
February	558,417	19,943	21,617	31,140	69%
March	583,617	18,826	20,702	31,140	66%
April	569,352	18,978	21,076	31,140	68%
May	626,446	20,208	22,291	31,140	72%
June	647,756	21,592	23,849	31,140	77%
July	693,521	22,372	24,196	31,140	78%
August	703,645	22,698	26,064	31,140	84%
September	620,327	20,678	22,566	31,140	72%
October	603,250	19,460	20,908	31,140	67%
November	521,387	17,380	21,661	31,140	70%
December	562,415	18,142	20,364	31,140	65%



15. Conclusion

The Town of Collingwood continues to provide a safe and reliable supply of potable water to its residents, consistently meeting or exceeding all legislative requirements.