



Staff Report

Operations Department

Report To: Committee of the Whole
Meeting Date: June 2, 2020
Report Number: CSOPS.20.027
Subject: Water Operations Update – January 2020 to April 2020
Prepared by: Meg Boyd, Compliance & Efficiency Coordinator

A. Recommendations

THAT Council receive Staff Report CSOPS.20.027, entitled “Water Operations Update – January 2020 to April 2020” for their information;

B. Overview

This staff report provides an overview of the Town’s drinking water system activities for the period of January 2020 to April 2020. The Town continues to provide quality drinking water to Town residents and visitors in compliance with regulatory requirements.

C. Background

Ensuring the safety and quality of the Town’s drinking water is not only the responsibility of the Water Operators who operate and maintain the system but also the members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system. The Safe Drinking Water Act, 2002 (SDWA) includes a statutory standard of care for individuals who have oversight responsibilities for municipal drinking water systems. The SDWA does not require Municipal Officials to be experts in drinking water but does require officials to be informed. This report provides regular updates to ensure Council are current in the operations of the system.

The purpose of Attachment # 1 – Water Operations Update is to provide regular up-to-date information with regards to the status of the operation of the Town’s drinking water system and to report on water quality issues for the period of January to April 2020.

This report addresses:

- System Information
- Overview of the Town’s Drinking Water System
- Raw, Treated and Distribution Water Quality Data
- Ministry of the Environment, Conservation and Parks (MECP) Inspection Results
- Staff Training

- Water Treatment Plant and Water Booster Station Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

D. Analysis

Attachment #1 demonstrates that Water Operators continue to satisfy all regulatory requirements and provide quality drinking water to users while ensuring long-term sustainability of the system through preventative maintenance programs.

E. The Blue Mountains Strategic Plan

Goal #2: Engage Our Communities & Partners

Objective #1 Improve External Communication with our Constituents

Goal #3: Support Healthy Lifestyles

Objective #1 Promote the Town as a Healthy Community

Objective #4 Commit to Sustainability

Goal #4: Promote a Culture of Organizational & Operational Excellence

Objective #2 Improve Internal Communications Across our Organization

Objective #3 To Consistently Deliver Excellent Customer Service

Objective #4 To Be a Financially Responsible Organization

Objective #5 Constantly Identify Opportunities to Improve Efficiencies and Effectiveness

Goal #5: Ensure Our Infrastructure is Sustainable

Objective #1 Develop a Long-Term Asset Management Plan for the Maintenance, Renewal and Replacement of Existing Infrastructure

Objective #2 Avoid Unexpected Infrastructure Failure and Associated Costs and Liability

Objective #3 Implement Best Practices in Sustainable Infrastructure

Objective #4 Ensure that Infrastructure is Available to Support Development

F. Environmental Impacts

Provision of safe drinking water.

G. Financial Impact

None.

H. In Consultation With

Allison Kershaw, Manager of Water and Wastewater Services

Scott Hill, Water Supervisor

I. Public Engagement

The topic of this Staff Report has not been subject to a Public Meeting and/or a Public Information Centre as neither a Public Meeting nor a Public Information Centre are required. Comments regarding this report should be submitted to Meg Boyd, Compliance and Efficiency Coordinator wwwinquiries@thebluemountains.ca

J. Attached

1. Attachment 1 – Water Operations Update – January 2020 to April 2020

Respectfully submitted,

Meg Boyd
Compliance & Efficiency Coordinator

Shawn Carey
Director of Operations

For more information, please contact:
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Town of The Blue Mountains

Water Section Operations Update January 2020 to April 2020

Introduction

Ensuring the safety and quality of the Town's drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system.

The Safe Drinking Water Act, 2002 (SDWA) includes a statutory standard of care for individuals who have oversight responsibilities for municipal drinking water systems. The SDWA does not require Municipal Officials and Councillors to be experts in drinking water but does require officials to be informed.

The purpose of this report is to provide Council with a brief overview of the Town's drinking water system and to report on water quality issues for the period of January 1, 2020 to April 30, 2020.

This report will address the following:

- System Information
- Overview of the Town's Drinking Water System
- Raw, Treated and Distribution Water Quality Data
- Ministry of the Environment, Conservation and Parks (MECP) Inspection Results
- Staff Training
- Water Treatment Plant and Water Booster Station Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

System Information

Drinking Water System Number:	220001762
Drinking Water System Name:	The Blue Mountains Drinking Water System
Drinking Water System Owner:	Town of The Blue Mountains
Drinking Water System Category:	Large Municipal Residential
Water Treatment Subsystem Class:	Class 2 Certificate No. 1758
Water Distribution Subsystem Class:	Class 3 Certificate No. 1759
Municipal Drinking Water License:	111-101
Municipal Drinking Water Permit:	111-201

Overview of the Town's Drinking Water System

Georgian Bay is the raw water source for the Blue Mountains' Thornbury Water Treatment Plant (WTP). The WTP has the following components: intake; low lift pumping facilities; strainers; three membrane trains; clearwell for storage; high lift pumps; ultraviolet disinfection; gas chlorination; a backwash wastewater system; and, dechlorination of wastewater to the Little Beaver River.

A supplemental water supply is received from the Public Utilities of the Town of Collingwood through the Mountain Road Booster Station.

The distribution system consists of approximately 120 kilometers of water main ranging in sizes up to 400mm. Distribution facilities include an elevated tank, six booster stations, three reservoirs and one standpipe.

Raw, Treated and Distribution Water Quality Data

Ontario Regulation 170/03 specifies guidelines for the number of samples to be taken, the frequency of sampling and the actions to be taken if any of the sample results indicate adverse water quality.

Schedule 10 of Ontario Regulation 170/03 requires weekly sampling and testing for E. Coli, Total Coliform and Heterotrophic Plate Count (HPC).

Weekly samples are collected for raw and treated water from the WTP and analyzed by an accredited laboratory.

Overviews of the raw and treated sampling data for the period of January 2020 to April 30, 2020 are presented in Tables 1 and 2 respectively.

Table 1 – Raw Water

Parameter	Result Range (Min-Max)	Parameter Limit
E. Coli	0 to 60	N/A
Total Coliform	0 to 2,680	N/A

Table 2 – Treated Water

Parameter	Result Range (Min-Max)	Parameter Limit
E. Coli	0	0
Total Coliform	0	0
HPC	0 to 2	N/A

Drinking water quality is further monitored throughout the distribution system by a comprehensive sampling and analysis program involving weekly sampling at designated sampling stations as well as reservoirs and booster stations.

An overview of the distribution sampling data for the period of January 2020 to April 30, 2020 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E. Coli	184	0	0 cfu/100 mg/l
Total Coliform	184	0	0 cfu/100 mg/l
HPC	144	0 to 2	N/A

MECP Inspection Results

A focused inspection of the WTP and associated distribution was initiated on February 13, 2020 by Provincial Officer Robert Graham and Acting Junior Environmental Officer Kate Reinhart of the MECP. The inspection was conducted to confirm compliance with MECP legislation as well as evaluate conformance with MECP drinking water related policies and guidelines.

To measure individual drinking water system inspection results, the MECP established an inspection compliance risk framework based on the principles of the inspection.

There was one (1) non-compliance identified in 2019-20 MECP Inspection as summarized below.

Findings:

Non-Compliance with Regulatory Requirements & Actions Required	Actions Taken	Summary of Best Practice Issues & Recommendations
Records did not confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/L free or 0.25 mg/L combined.	<p>A low free chlorine residual of 0.02 mg/L was collected at an auto flusher at the west end of Bay Street (east of the Little Beaver River).</p> <p>Staff reported the incident to the Grey Bruce Health Unit and MECP and flushed the drinking water system to restore the secondary disinfection to 0.81 mg/L.</p> <p>No further action was required by MECP.</p>	N/A

The area where the low free chlorine residual was collected is a 150mm cast iron watermain at a dead end. The material and size of the watermain, together with the small number of residential connections, make it challenging to maintain an adequate free chlorine residual without excessive flushing. In consideration of these factors, this watermain has been included in the Town's substandard watermain replacement capital program. The intent is to loop the watermain to provide fresher water and therefore eliminate the possibility of low chlorine in this area.

The Inspection Report includes an Inspection Summary Rating Record which is designed to encourage drinking water systems to strive for continuous improvement. Based on the MECP established rating methodology, The Blue Mountains' Drinking Water System received a **96.32%** rating for the 2019-2020 reporting period.

Staff Training

In accordance with Ontario Regulation 128/04, all water treatment and distribution Operators possess operating licenses appropriate to the class of the facility where they are employed. As the Town's distribution system is a Class 3 subsystem, Operators are required to complete a minimum of 26 hours of on the job practical training and 14 hours of formal Continuing Education Units (CEU) training per year.

A summary of the courses attended from January 2020 to April 30, 2020 by Operators is provided in Table 4:

Table 4 – Operator Training

Operator Name	Training Course Attended
Stephanie Cole	<ul style="list-style-type: none"> • Working at Heights • PVC 102 – Water Training • Forklift Operator Safety Awareness • Asbestos Awareness Training • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees • Confined Space Refresher Training
Rob Gilchrist	<ul style="list-style-type: none"> • Working at Heights • PVC 102 – Water Training • Safe Lifting Training • Ladder Safety Training • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees • Confined Space Refresher Training
Scott Hill	<ul style="list-style-type: none"> • PVC 102 – Water Training • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees • Creating a Respectful Workplace • Mental Health in the Workplace Training for Leaders • Crisis Intervention Training for all Audiences • Conflict Resolution Training • Workplace Violence & Harassment Training for Managers • Effective Communication Training • Coaching & Mentoring Training • Confined Space Refresher Training
Scott Marritt	<ul style="list-style-type: none"> • PVC 102 – Water Training • Math Tools 1-3, Averages, Ratios and Proportions • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees
Don McArthur	<ul style="list-style-type: none"> • Working at Heights • PVC 102 – Water Training • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees

Kevin McGuire	<ul style="list-style-type: none"> • PVC 102 – Water Training • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees
Al Scott	<ul style="list-style-type: none"> • PVC 102 – Water Training • Respect in the Workplace • Workplace Diversity & Inclusion • Managing & Coping with Stress • Mental Health in the Workplace for Employees • Conflict Resolution Training • Confined Space Refresher Training

Water Treatment Plant and Water Booster Station Maintenance Summary

The following table provides a breakdown of the maintenance performed at the Water Treatment Plant from January 2020 to April 30, 2020.

Table 5 – Water Treatment Plant and Booster Station Maintenance Summary

Maintenance Performed	Number Completed
New motor installed on Wards Road Booster Pump # 2	1
SCADA Integrator completed remote login programming on PRV Chambers	1
Clean in Place (CIP) completed on Racks 1, 2 and 3	1
Flood alarm installed in garage at WTP	1
35 bags of Anthracite added to Trident Filter	1
Duty sensor changed on UV # 2	1
IT installed two (2) new battery backups in server cabinet	1
Testing of UV faults completed with SCADA Integrator	1
Repaired service leak on Bay Street East	1
Happy Valley Booster Pumps 1 and 2 drives replaced due to fault	1
Packing changed in low lift pumps at WTP	1
Electrician installed new capacitors in low lift # 2 at WTP	1

Maintenance Performed	Number Completed
Replaced and calibrated Rack # 1 feed valve at WTP	1
Inline block heaters replaced on Generators	1
Bi-annual UV maintenance on (3) three reactors and UVT analyzer completed by UV Contractor	3
Flex line changed on chlorine gas cylinder at WTP	1
UVT lamp replacement at WTP	1
Installation of new Smart positioner on feed flow valve on Rack # 1 at WTP	1
Annual preventative maintenance (PM) kits completed on chlorine pumps at booster stations	15
Replaced chlorine supply lines for chlorine pumps at Camperdown Reservoir	1
Annual calibration of chlorine analyzers completed by Contractor	1
Annual calibration of flow meters completed by Contractor	1
Mouth of Beaver River dredged by Contractor	1
Monthly Maintenance	4

Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for January 2020 to April 30, 2020:

Table 6 – Water Meter Field Services Summary

Nature of Call	Number of Calls
Frozen Meter Repairs	3
Replace/Repair Jammed Meter	1
Replace/Repair Remote Touchpads	6
Repair Meter Other (leaks, reversed, etc.)	2

Nature of Call	Number of Calls
Water Meter Inspections (re-inspections, renovations, new construction)	76
Billing Verification, Hand Deliveries (notices, bills)	117
Install/Repair Radio Units	3
Customer Meetings (usage, pressure, complaints, etc.)	14
Closing Readings	114
Water Turn On	3
Plumbing Inspections	2
Meetings with Contractors, Business Owners, Site Management (Backflow requirements, unauthorized connections, losses etc.)	14

The following table provides a breakdown of the Water Distribution Work Orders completed for January 2020 to April 30, 2020.

Table 7 – Distribution Work Orders

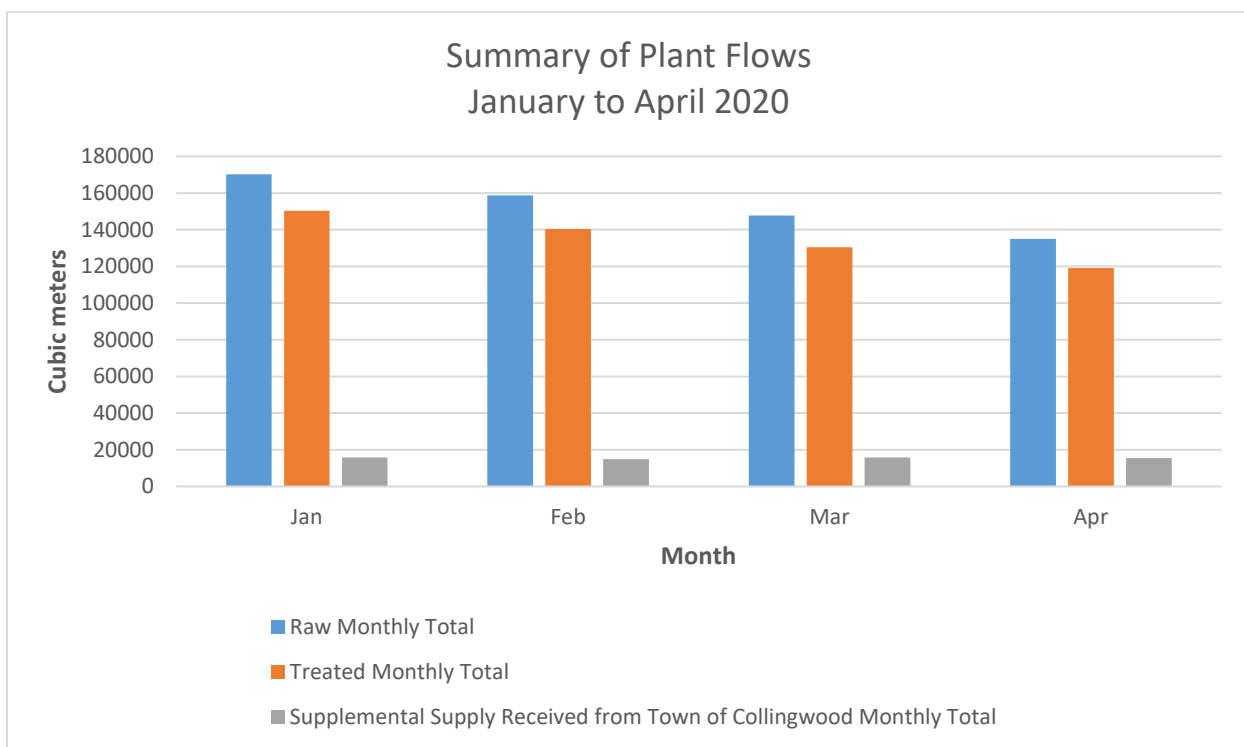
Work Order Description	Number Completed
Watermain Dig Site Clean up	2
Watermain Repairs	2
Service Connection Curb Stop Repairs – Vacuum Unit	1
Valves operated (Curb Stop Valves, Main Valves and Hydrant Valves)	189
Service Connection Repairs	2
Service Connection Curb Stop Repairs – Dig	2
Pressure Reducing Valve Inspections or Repairs	6
Dead End Flushing Program – Number of Fire Hydrants Flushed	96
Annual Flushing Program	10
Water and Sewer locates completed	351
Automatic Flushing Stations – Weekly check of chlorine residuals	298

Work Order Description	Number Completed
Automatic Flushing Stations – Winterizing or repairs	2
Air Relief Inspections or Repairs	72
Confined Space Entries	8
Valves Repaired	2
Leak Detection	1

Summary of Plant Flows

A summary of the WTP Raw, Treated and supplemental flow supply received from the Town of Collingwood is presented in Graph 1:

Graph 1:



Watermain Break Summary

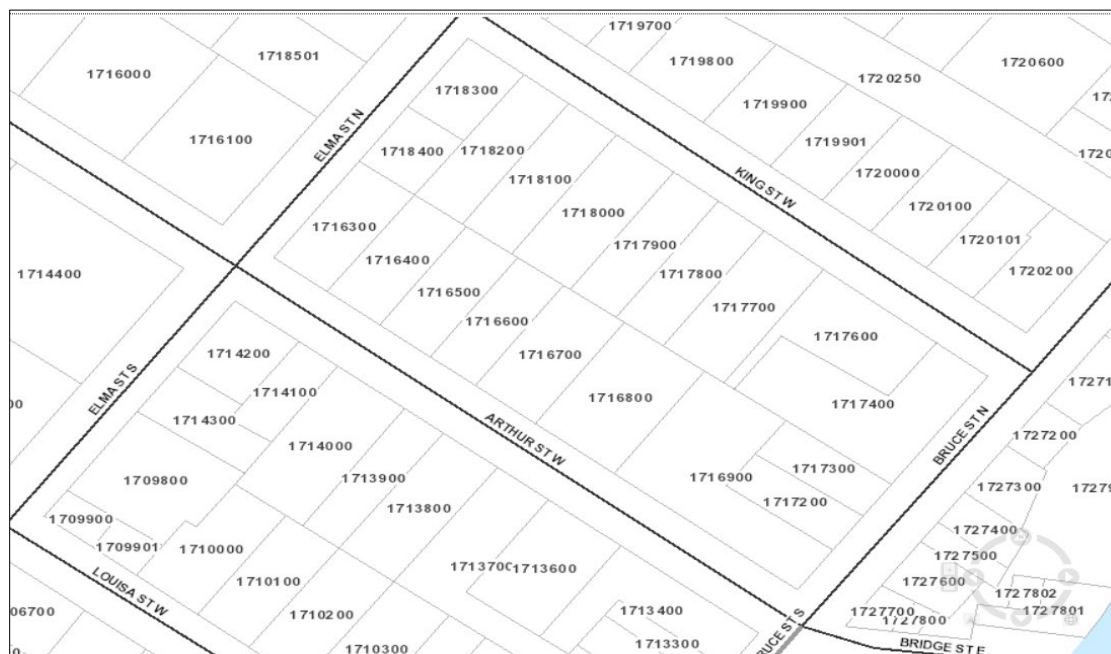
Watermain breaks are typically reported by the public, Town Staff or discovered during visual inspections by Operators. In most instances, watermain breaks are repaired by Operators and, at times, with the assistance of outside contractors or Staff from the Town's Roads Department.

For the period of January 2020 to April 30, 2020, there were two watermain breaks as summarized below:

On January 24, 2020 a watermain break was reported on Lakeshore Road East. Staff found a glued joint had cracked on the 100mm PVC watermain. Staff repaired the watermain on January 27, 2020 and residents were notified of the disruption to service.



On February 16, 2020 the OPP reported a watermain break on Arthur Street West (Highway 26) between Bruce and Elma Street. The 150mm cast iron watermain had a circular break caused by improper bedding material. The watermain was repaired on February 18, 2020. The OPP and Roads Department assisted by providing traffic control.



where disinfection of the Town's drinking water may be compromised. A single AWQI does not necessarily mean that the system's drinking water is unsafe – it indicates that, on at least one occasion, a water quality standard was not met.

The Town's drinking water system is operated in accordance with Ontario Regulation 170/03 and Operators follow the direction of this regulation when dealing with incidents of adverse drinking water. There were no instances of adverse water quality for the period of January 2020 to April 30, 2020.

Water Quality Concerns / Resident Complaints

Staff record information relating to the water quality issues on the Resident Water Quality Concern Form. If required, Operators attend the location of concern to collect samples or assess the nature of the concern.

The ongoing analysis of the water quality data is useful in determining if the water quality is changing throughout the distribution system over time. As an example, taste and odor complaints may indicate that the watermain in an area is deteriorating.

A summary of the water quality concerns from residents received during the period of January 1, 2020 to April 30, 2020 is included in Table 8 below:

Table 8 – Water Quality Concerns

Water Quality Concern	Date(s)	Number of Occurrences	Resolution / Comment
Taste & Odour	January 9, 2020	1	Sample collected and returned absent of E.Coli and Total Coliform
No Water	March 21, 2020	1	Internal plumbing
Discoloured Water	January 9, 2020 April 6, 2020	2	Sample collected and returned absent of E.Coli and Total Coliform Flushing was being undertaken in area of residence which caused discolouration. Notification of flushing is posted on the Town's website.