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# Staff Report

## Infrastructure & Public Works

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**Report To:** Committee of The Whole  
**Meeting Date:** February 21, 2018  
**Report Number:** CSPW.18.011  
**Subject:** Water Section Operations Update – September to December 2017  
**Prepared by:** Meg Boyd, Compliance & Efficiency Coordinator

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### A. Recommendations

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THAT Council receive Staff Report CSPW.18.011 entitled “Water Section Operations Update – September to December 2017” for their information.

### B. Overview

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This report provides an overview of the Town’s drinking water system for the period of September to December 2017. The Town continues to provide quality drinking water to Town residents and visitors in compliance with regulatory requirements.

### C. Background

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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 Act does not require Municipal Officials and councilors to be an expert in the water field, but does require officials to be informed. Town Council has requested regular updates to ensure they are current in the operations of the system. This Report continues to provide the information requested.

As mentioned in previous Reports, the purpose of Attachment # 1 – Water Operations Update is to provide regular up-to-date information with regards to the status and operation of the Town’s drinking water system and to report on water quality issues for the period of September to December 2017.

Topics such as an overview of the Town’s drinking water system were provided in the initial report, and as such will only be included intermittently to remind Council of the drinking water system components.

This report addresses:

- Raw, Treated and Distribution Water Quality Data
- 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**

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

## **E. The Blue Mountains Strategic Plan**

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Goal #5: Ensure Our Infrastructure is Sustainable

## **F. Environmental Impacts**

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None

## **G. Financial Impact**

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None

## **H. In consultation with**

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None

## **I. Attached**

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1. Attachment # 1 – Water Section Operations Update – September to December 2017

Respectfully submitted,

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**Meg Boyd**  
Compliance & Efficiency Coordinator

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# Town of The Blue Mountains

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## Water Section Operations Update September to December 2017

### Introduction

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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 Act does not require Municipal Officials and councilors to be an expert in the water field, 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 September to December 2017.

This report will address the following:

- Statutory Standard of Care
- Raw, Treated and Distribution Water Quality Data
- Drinking Water Quality Management System Update
- 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
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### System Information

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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

## Statutory Standard of Care

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Section 11 of the SDWA describes the legal responsibilities of owners and operating authorities of municipal drinking water systems.

Owners and operating authorities are responsible for ensuring their drinking water systems:

- Provide water that meets all prescribed drinking water quality standards
- Operate in accordance with the Act and its regulations, and are kept in a fit state of repair
- Are appropriately staffed and supervised by qualified persons
- Comply with all sampling, testing and monitoring requirements
- Meet all reporting requirements<sup>1</sup>

Section 19 of the SDWA extends legal responsibility to people with decision-making authority over municipal drinking water systems. It requires that they exercise the level of care, diligence and skill with regard to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation and that they exercise this due diligence honestly, competently and with integrity. The Act does not require Municipal officials and councilors be an expert in the water field, but does require officials to be informed.

## Raw, Treated and Distribution Water Quality Data

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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 Thornbury Water Treatment Plant (WTP) and analyzed by an accredited laboratory.

Overviews of the raw and treated sampling data for the period of September to December 31, 2017 are presented in Tables 1 and 2 respectively.

Table 1 – Raw Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0 to 19	N/A
Total Coliform	0 to 111	N/A

Table 2 – Treated Water

Parameter	Result Range (Min – Max)	Parameter Limit
E.Coli	0	0
Total Coliform	0	0

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<sup>1</sup> Taking Care of Your Drinking Water: A Quick Guide for Members of Municipal Councils

HPC	0 to 1	N/A
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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 September to December 31, 2017 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E.Coli	193	0	0
Total Coliform	193	0	0
HPC	137	0 to 5	N/A

### Drinking Water Quality Management Standard (DWQMS) Update

The Safe Drinking Water Act, 2002 (SDWA) requires Owners and Operating Authorities of Municipal Residential Drinking-Water Systems to have an accredited Operating Authority. In order to become accredited, an Operating Authority must establish and maintain a Quality Management System (QMS). The established QMS is then audited by a third-party Accreditation Body which will determine if the Operating Authority is meeting the requirements of the Drinking Water Quality Management Standard (DWQMS). This is a legislated requirement.

On October 23, 2017, a surveillance audit was conducted by NSF International Strategic Registrations (NSF-ISR), who is the third-party Accreditation Body selected by the Town. The final audit report identified two (2) minor non-conformances. A non-conformance indicates that the QMS needs to be improved to meet an element of the DWQMS and the specific details are outlined by the Auditor in the form of a Corrective Action Request (CAR).

Staff prepared responses to the CARs identified and received notification that the submitted CARs had been approved.

### 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 September to December 31, 2017 by Operators is provided in Table 4:

Table 4 – Training Overview

Operator Name	Training Course Attended
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Stephanie Cole	<ul style="list-style-type: none"> <li>Georgian Bay Water Works Fall Conference</li> </ul>
Scott Hill	<ul style="list-style-type: none"> <li>Georgian Bay Water Works Fall Conference</li> </ul>
Scott Marritt	<ul style="list-style-type: none"> <li>Working at Heights</li> </ul>
Darren Shilvock	<ul style="list-style-type: none"> <li>Risk Assessment &amp; Contingency Planning</li> </ul>

## 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 September to December 31, 2017.

Table 5 – Water Treatment Plant and Booster Station Maintenance Summary

Maintenance Performed	Number Completed
Monthly Maintenance at WTP and Stations	4
Two new chlorine analyzers installed at Camperdown Reservoir	2
New ballast installed on UV # 3	1
H2Flow Bi-annual maintenance on UV Units	1
New solenoid installed on UV # 3 cooling line	1
New Benshaw drive installed on booster pump 1 at Camperdown Reservoir	1
Replaced valve 1010 on Pall Rack 2 at Water Treatment Plant	1
Changed pressure transmitter at Arrowhead Road Booster Station to 0-2600 kpa unit	1
New air release installed on Rack 3 at Water Treatment Plant	1
Annual visual inspection of Raw Well at Water Treatment Plant	1
Truck Fill drain maintenance at 10 <sup>th</sup> Line Water Booster Station	1
New floats on sump pump at 10 <sup>th</sup> Line Water Booster Station	1
Rogers phone line installed to Water Treatment Plant for auto dialer backup	1
Preventive Maintenance kits on all Chlorinators, Injectors and Vacuum Regulators at Water Treatment Plant	1
Drives replaced at 10 <sup>th</sup> Line Water Booster Station	5
Transfer switch damage evaluation at 10 <sup>th</sup> Line Water Booster Station	1
PLC Replacement at Happy Valley Booster Station	1
Wiring of chlorine pumps at Happy Valley Booster Station	1

## Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for September to December 31, 2017:

Table 6 – Water Meter Field Services Summary

Nature of Call	Number of Calls
Frozen Meter repairs	1

Replace/Repair Jammed Meter	10
Replace/Repair Remote Touchpads	33
Repair Meter Other (leaks, reversed, etc.)	4
Meter Inspections (re-inspections, renovations, new construction)	66
Billing Verification, Hand Deliveries (notices, bills)	197
Install/Repair Radio Units	22
Customer Meetings (usage, pressure, complaints, etc.)	15
Closing Readings	204
Water Turn On	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 September to December 31, 2017

Table 7 – Distribution Work Orders

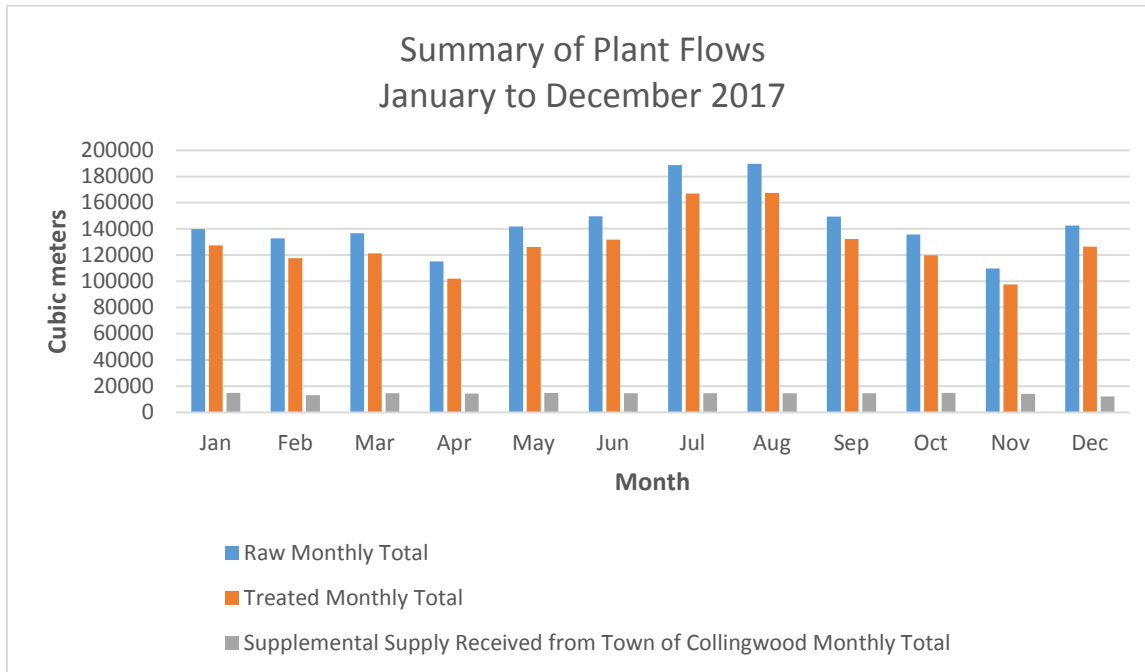
Work Order Description	Number Completed
Watermain Dig Sites Clean up	2
Valves operated (Curb Stop Valves, Main Valves and Hydrant Valves)	382
Service Connection New Installations	6
Service Connection Curb Stop Repairs – Vacuum Unit	8
Service Connection Curb Stop Repairs – Dig	2
Service Connection Repairs	8
Valves Repaired	1
Annual Flushing Program (Fall)	323
Pressure reducing valve inspections or repairs	24
Dead End Flushing Program – Number of Fire Hydrants Flushed	225
Water and Sewer locates completed	236
Automatic Flushing Stations – Weekly check of chlorine residuals	419
Automatic Flushing Stations – Winterizing or repairs	8
Sample Station Winterizing or Repairs	34
Fire Hydrant Repairs from Inspections	92
Air Relief Inspections or Repairs	80
Meter and Valve Chamber Inspections or Repairs	15
GPS Unit – Curb Stops and Valves	½ day
Confined Space Entries / Climbing Tower	19



## 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 September 1 to December 31, 2017, there were two (2) watermain breaks as summarized below:

On October 22, 2017, the On-call Water Operator reported a watermain break on Peel Street North. The area was barricaded off and the watermain was left under pressure until a crew could repair the following day. Two homes were affected by lower pressure. The break was repaired the following day by Town Staff and the Contractor working on Peel Street.



On October 23, 2017, the Contractor working on Peel Street reported another watermain break on Peel Street. While compacting the road, the vibration from the construction activities caused another watermain break. The same two homes were affected by lower water pressure. The watermain was repaired the following day by Town Staff and the Peel Street Contractor.

### **Incidents of Adverse Water Quality**

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This section describes all Adverse Water Quality Incidents (AWQI). This term refers to any treated water test result that does not meet a provincial water quality standard or a situation 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 was one (1) incident of adverse water quality for the period of September to December 31, 2017.

On October 10, 2017, a low free chlorine residual was noted at the Georgian Bay Clubhouse PRV Chamber Sample Station. The minimum allowable free chlorine residual in the distribution system is 0.05 mg/L. The residual at this sample station was 0.03 mg/L.

Operators flushed the distribution system in this area and restored the free chlorine residual to 0.61 mg/L. A bacteriological sample was taken from the sample station and the results were returned 0 E.Coli and 0 Total Coliform.

The required corrective actions for a low chlorine event include flushing the system in the area of the adverse results until the free chlorine residual is restored to at least 0.20 mg/L.

## Water Quality Concerns / Resident Complaints

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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 odour complaints may indicate that the watermain in an area is deteriorating.

A summary of the water quality concerns received during the September to December 31, 2017 period is included in Table 8 below:

Table 8 – Water Quality Concerns

Water Quality Concern	Dates	Number of Occurrences
Dirty Water	October 6, October 19, November 14, November 20, November 21	5
Odour	September 5, November 8, November 20, November 22	4
Taste	December 4	1
Low Water Pressure	October 4, October 6, December 11	3
No Water	September 20	1
Fluctuating Water Pressure	November 27	1