

Annual Drinking Water
Report - 2023
**Royston Water
System**

Table of Contents

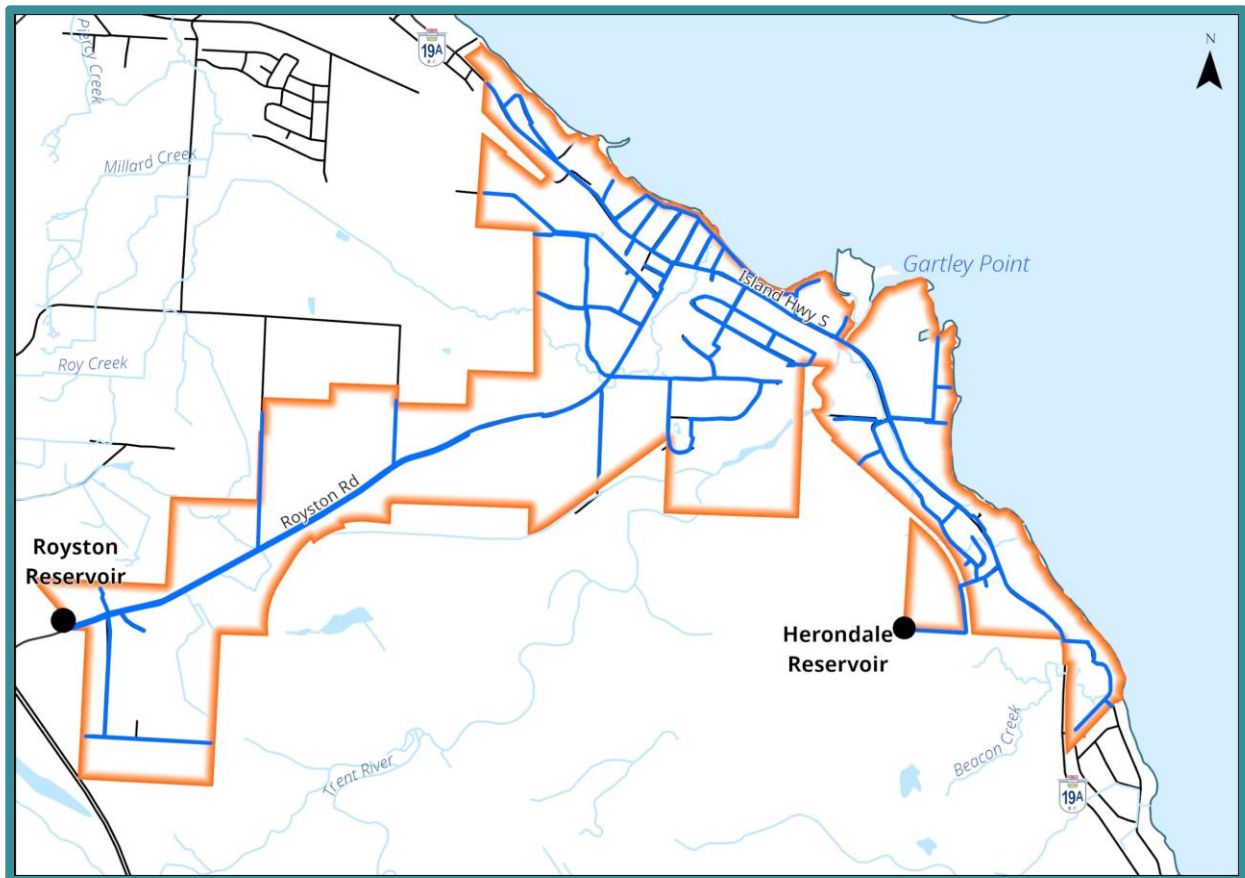
Introduction	2
Source Water	3
Water Treatment	3
Water Distribution	4
Water Quality	5
Water Quality Summary	5
Distribution Water – Data by Sample Site.....	6
Consumption Metrics and Water Rates	7
Conservation	8
Operations	9
2023 Achievements	9
2024 Objectives	9

The CVRD respectfully acknowledges that the land on which it operates is on the unceded traditional territory of the K’ómoks First Nation, the traditional keepers of this land.

Introduction

The Comox Valley Regional District strives to provide high-quality drinking water through responsible operation and management of the water system. The CVRD is regulated by Island Health for its activities as a potable water supplier and is required under the *Drinking Water Protection Act* to report annually on the Royston Water System. This report includes information on water quality, consumption, maintenance, and capital projects.

The CVRD provides water to roughly 2800 residents in the Royston Service Area.



Source Water

Water for the Royston Service Area is purchased from the Village of Cumberland, where it is sourced from a series of lakes including Allen Lake and a well at Coal Creek Historic Park.



Allen Lake.

Water Treatment

All water supply systems using surface water are governed by Island Health and are required to adhere to provincial “4-3-2-1-0” treatment objectives to ensure effective elimination of disease-causing viruses, bacteria, and parasites.

The “4-3-2-1-0” objectives are as follows:

- 4-log (99.99 per cent) removal/inactivation of viruses
- 3-log (99.9 per cent) removal/inactivation of Giardia and Cryptosporidium
- 2 types of treatment processes
- 1 maximum Nephelometric Turbidity Units in treated water
- 0 detectable E. Coli, fecal coliforms and total coliforms in treated water

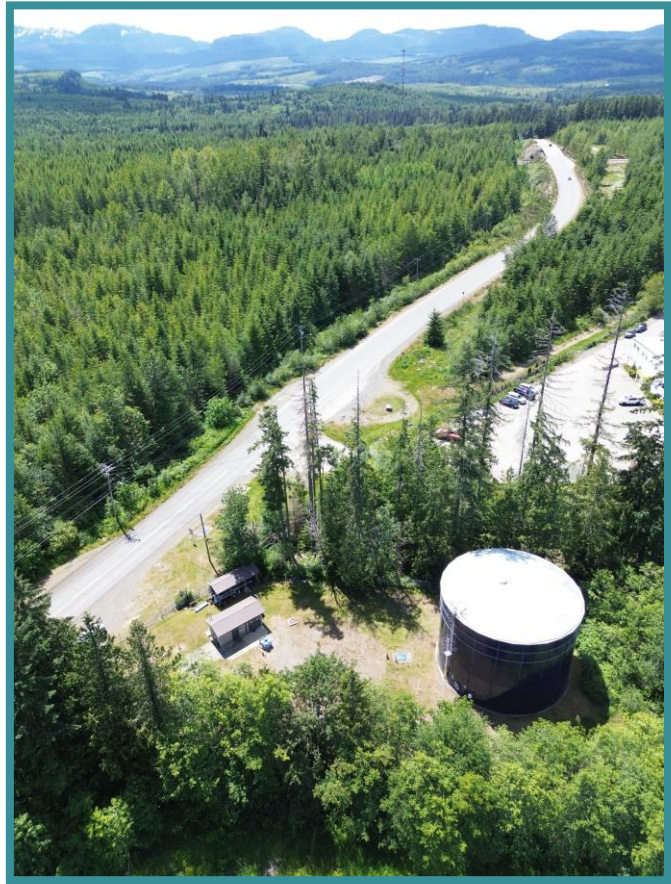
Water entering the Royston Service Area is treated and provided by the Village of Cumberland and is compliant with provincial regulations. The water is re-chlorinated at the Royston Reservoir site for both the water that flows into Royston and water directed to the Kentwood pressure zone.

Water Distribution

Water leaves the Royston Reservoir and travels downhill towards the town of Royston. As pressure builds, it passes through pressure reducing valves to bring it back down into a manageable range. By the time it reaches Marine Drive, it has built back up to approximately 90psi.

The system extends from beyond Thomson Road in the north, to Kilmarnock Drive in the south at the boundary with Union Bay. There is a second reservoir on Herondale Road that provides supply for fire protection for southern Royston.

There are 102 fire hydrants and 931 service connections in the distribution system.



Royston Reservoir.

Water Quality

The Ministry of Health, through its regional body Island Health, regulates municipal drinking water quality through the *Drinking Water Protection Act* and the *Drinking Water Protection Regulation*. Both documents set out certain requirements for drinking water purveyors to ensure the provision of safe drinking water to their customers.

The *Guidelines for Canadian Drinking Water Quality* are developed by the Federal-Provincial-Territorial Committee on Drinking Water, and they provide a limit on microbial, chemical, physical, radiological substances called a “maximum acceptable concentration”. The guidelines also assign aesthetic objectives to substances that do not cause risk to human health, but influence consumer acceptance of the water based on factors such as taste, odour and colour.

The CVRD collects and analyzes weekly water quality samples at the water treatment facility, source water, Macaulay, and Kelland Reservoirs, and from various other strategic points within the distribution system to ensure that water is meeting regulatory objectives. Additionally, beyond the scope of this document, water from select locations is tested periodically throughout the year for over 200 different analytes to confirm the effectiveness of treatment processes, the quality of our source water, and the integrity of the distribution system.

Water Quality Summary

Distribution Water	2022	2023	Target
Turbidity (Average, NTU)	0.51	0.42	<1
Temperature (Average, °C)	12.3	11.9	<15
pH (Average)	7.4	7.4	7-10.5
Chlorine Residual (Average, mg/L)	1.00	0.61	0.4 \geq ≤2.0
Total Coliforms (Positive Samples)	0	0	0
E. Coli (Positive Samples)	0	0	0
Trihalomethanes (Average, mg/L)	0.072	0.072*	<0.1

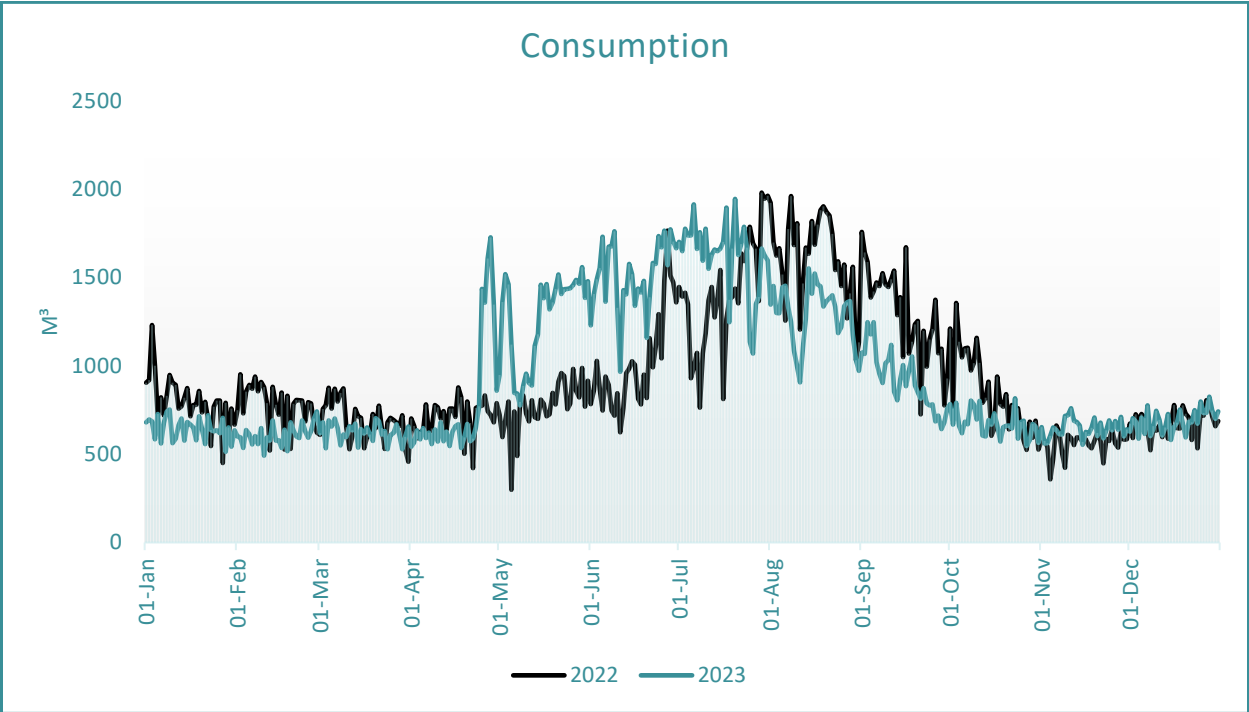
*No trihalomethanes sample result was higher than 0.092.

Distribution Water – Data by Sample Site

Date	262 Spindrift		3200 Royston		3269 Kentwood		3771 Haas		4090 Gartley Pt.		Herondale Res.	
	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU	Cl ²	NTU
03-Jan							0.67	0.67				
09-Jan			0.94	0.54	0.61	0.45						
16-Jan	0.56	0.92										
23-Jan									0.55	0.52		
30-Jan									0.64	0.56		
06-Feb							0.8	0.39				
13-Feb			0.97	0.47	0.76	0.47						
21-Feb	0.23	0.53										
27-Feb									0.73	0.88		
03-Mar			1.1	0.62	0.63	0.73						
06-Mar							0.93	0.14				
08-Mar											0.77	0.48
20-Mar	0.21	0.41									1.05	0.64
27-Mar									0.64	0.36		
03-Apr							0.73	0.39				
11-Apr			0.94	0.81	0.57	1.39						
17-Apr	0.2	0.31										
24-Apr									0.62	0.48		
01-May							0.83	0.43				
08-May			1.11	0.44								
15-May												
23-May	0.5	0.31										
06-Jun							0.87	0.48			0.92	0.46
12-Jun			0.96	0.59	0.58	0.4						
19-Jun	0.67	0.48										
26-Jun									0.8	0.54		
04-Jul							0.9	0.73				
10-Jul			1.15	1.00	0.58	0.88						
17-Jul	0.57	0.51										
24-Jul									0.85	0.47		
08-Aug							0.65	0.54				
14-Aug			0.86	0.52	0.67	0.5						
21-Aug	0.35	0.58										
28-Aug									0.68	0.99		
30-Aug									0.68	0.89		
05-Sep							0.75	0.98	0.87	1.05		
11-Sep			0.95	1.38	0.54	1.11						
18-Sep	0.13	0.62										
25-Sep									0.59	0.91		
03-Oct							0.46	0.83				
10-Oct			1.03	0.66	0.43	0.63						
16-Oct	0.47	0.56										
23-Oct									0.58	0.76		
06-Nov							0.65	0.53				
14-Nov			1.05	0.56	0.45	0.75						
20-Nov	0.21	0.5										
27-Nov									0.63	0.43		
04-Dec							0.62	0.38				
11-Dec			1.06	0.5	0.54	0.99						
13-Dec											0.89	0.43
18-Dec	0.24	0.49										
27-Dec									0.72	0.28		

Consumption Metrics and Water Rates

The average daily water production in 2023 was 945m³ per day. Demand is highest during the summer months - approximately twice as much as during the winter. In 2023, system demand reached its highest point on June 20th with 1944m³ of water being used.



		2024	2025
Residential & Commercial	Minimum Charge	\$31.23	\$33.42
	0m ³ to 25m ³	\$1.06/m ³	\$1.13/m ³
	25m ³ to 50m ³	\$1.32/m ³	\$1.41/m ³
	Over 50m ³	\$1.59/m ³	\$1.71/m ³

Conservation

Water conservation is an increasingly important initiative and while it seems as if there is an abundance of water available, our supply is truly a limited resource, particularly during the summer months.

The CVRD has a four-stage system in place for managing water consumption. Stage one is the least restrictive and comes into effect annually on May 1st unless otherwise noted. Stage two, three, and four are more restrictive and are implemented as needed, depending on operational requirements or forecasts of water inflow provided by the Village of Cumberland.

Royston Watering Schedule

Residential lawn and garden watering is permitted with a sprinkler during the specified days and hours as follows:

STAGE	STARTS	HOURS	Mon	Tues	Wed	Thu	Fri	Sat	Sun
1	Starting May 1	5-8 am & 7-10 pm	No Watering	Even Address	Odd Address	Even Address	Odd Address	Even Address	Odd Address
2	When Notified	6-8 am & 8-10 pm	No Watering	Even Address	Odd Address	No Watering	No Watering	Even Address	Odd Address
3	When Notified	6-8 am & 8-10 pm	HAND WATERING OR MICRO/DRIP IRRIGATION OF TREES, SHRUBS, FLOWERS AND VEGETABLES ONLY						
4	When Notified	N/A	NO WATERING						

Hand watering or micro/drip irrigation of trees, shrubs and vegetables is permitted anytime during Stage 1 and 2.

For more information visit:
comoxvalleyrd.ca/restrictions
 or call **250-334-6000**

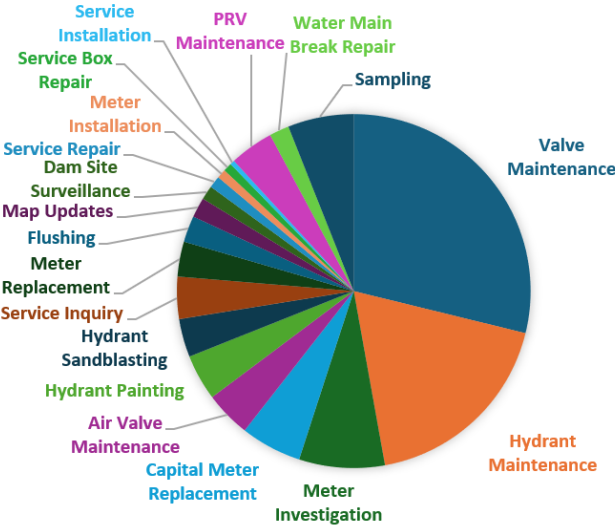


comoxvalleyrd.ca

Operations

The water treatment facility and distribution system are operated by 15 qualified operators. In 2023, several ongoing and annual maintenance activities were carried out, as well as improvements to work order tracking, data collection, and map improvements.

Additionally, many non-annual projects were completed such as reservoir cleaning, and hydrant painting.



2023 Achievements

- Completed year 3 of 5 of the residential water meter replacement program
- Completed the Minto Rd watermain replacement (fire protection project)
- Continued progress on the Water South Extension Project design and details
- Completed various preventive maintenance programs (fire hydrants, valve exercising, flushing and PRV maintenance)
- Upgraded 2 PRV chamber upgrades for the purpose of operator safety

2024 Objectives

- Complete year 4 of 5 of the residential water meter replacement program
- Herondale Reservoir repair (interior floor and overflow pipe hangers)
- Complete detailed design for the Water South Extension Project
- Design of the Mounce Rd watermain upgrade
- Trent Rd PRV upgrade