



Notice of Meeting and Meeting Agenda Regional Water Supply Commission

Wednesday, November 25, 2020

11:30 AM

6th Floor Boardroom
625 Fisgard St.
Victoria, BC V8W 1R7

Members:

R. Mersereau (Chair); G. Baird (Vice Chair); N. Chambers; Z. de Vries; S. Duncan;
C. Graham; K. Harper; M. Hicks; B. Isitt; K. Kahakauwila; G. Logan; J. Loveday;
T. Morrison; J. Rogers; T. St-Pierre; C. Stock; L. Szpak; N. Taylor; R. Wade;
E. Wood Zhelka; G. Young

1. TERRITORIAL ACKNOWLEDGEMENT

2. APPROVAL OF THE AGENDA

3. ADOPTION OF MINUTES

3.1. [20-764](#) Adoption of the October 21, 2020 Minutes

Recommendation: That the October 21, 2020 minutes be adopted.

Attachments: [Draft Minutes October 21, 2020](#)

4. REPORT OF THE CHAIR

5. GENERAL MANAGER'S REPORT

5.1. Water Supply Outlook

5.2. Tap Sampling Program Update

5.3. Commercial Faucet Aerator Replacement Program

5.4. 2021 Commission Chair/Vice Chair Elections

6. PRESENTATIONS/DELEGATIONS

Presentations and delegations requests can be made online at www.crd.bc.ca/about/board-committees/addressing-the-board, a printable form is also available. Requests must be received no later than 4:30 p.m. two calendar days prior to the meeting.

7. WATER ADVISORY COMMITTEE

8. COMMISSION BUSINESS

- 8.1. [20-636](#) Water Quality Summary Report for Greater Victoria Drinking Water System - December 2019 to May 2020
- Recommendation:** That the Regional Water Supply Commission receive the Water Quality Summary Report for the Greater Victoria Drinking Water System - December 2019 to May 2020 for information.
- Attachments:** [Staff Report: Water Quality Summary Report - Greater Vic - Dec 2019-May 2020](#)
[Appendix A: Water Quality Summary Report - Greater Vic - Dec 2019-May 2020](#)
- Item was carried over from the October 21, 2020 meeting.*
- 8.2. [20-765](#) Water Advisory Committee Membership
- Recommendation:** That the Regional Water Supply Commission strike a nominating subcommittee consisting of the Commission Chair or Chair's delegate, Commissioner's Baird and Rogers, to review the applications and that the Subcommittee report back to the Commission, providing its recommendations for appointment.
- 8.3. [20-655](#) Summary of Recommendations from Other Water Commissions
- Recommendation:** That the Summary of Recommendations from Other Water Commissions be received for information.
- Attachments:** [Summary of Recommendations from Other Water Commissions](#)
- 8.4. [20-654](#) Water Watch Report
- Recommendation:** That the November 16, 2020 Water Watch report be received for information.
- Attachments:** [Water Watch Report November 16, 2020](#)

9. CORRESPONDENCE

- 9.1. [20-659](#) BC Wildfire Service
- Recommendation:** That the Correspondence be received for information.
- Attachments:** [Correspondence: BC Wildfire Service](#)
- Item was carried over from the October 21, 2020 meeting.*

10. NOTICE OF MOTION

- 10.1. [20-682](#) Notice of Motion - Commissioner Taylor
- Recommendation:** That the Regional Water Supply Commission request staff to bring forward a report outlining the impacts that climate change is having on Capital Regional District (CRD) water operations and the CRD's ability to provide water to the region.

11. NEW BUSINESS

12. MOTION TO CLOSE THE MEETING

12.1. [20-652](#) Motion to Close the Meeting

Recommendation: In accordance with the Community Charter, Part 4, Division 3, 90(1)(e) the acquisition, disposition or expropriation of land or improvements.

Item was carried over from the October 21, 2020 meeting.

13. RISE AND REPORT

14. ADJOURNMENT

Next Meeting: December 20, 2020 or at the call of the Chair

To ensure quorum, please contact Denise Dionne at ddionne@crd.bc.ca or 250.360.3087 if you or your alternate cannot attend.

Meeting Minutes

Regional Water Supply Commission

Wednesday, October 21, 2020

11:30 AM

6th Floor Boardroom
625 Fisgard St.
Victoria, BC V8W 1R7

PRESENT:

R. Mersereau (Chair); N. Chambers; C. Graham; M. Hicks; T. Morrison; J. Rogers; C. Stock; L. Szpak;
N. Taylor; G. Young

BY WebEx:

Z. de Vries; S. Duncan; K. Harper; B. Isitt; K. Kahakauwila; J. Loveday; T. St-Pierre;
R. Wade; E. Wood Zhelka

REGRETS:

G. Baird (Vice-Chair); L. Collins; G. Logan

STAFF:

R. Lapham, Chief Administrative Officer; T. Robbins, General Manager; A. Constabel, Senior Manager, Watershed Protection; G. Gullekson, Senior Financial Advisor; G. Harris, Senior Manager, Environmental Protection; S. Henderson, Manager, Real Estate Services; S. Irg, Senior Manager, Water Infrastructure Operations; I. Jesney, Senior Manager, Infrastructure Engineering; M. Lagoa, Deputy Corporate Officer; B. Semmens, Manager, Financial Planning; T. Urquhart, Communications Coordinator; S. Orr (Recorder)

1. TERRITORIAL ACKNOWLEDGEMENT

Commissioner Morrison provided the territorial acknowledgement.

Chair Mersereau shared the new inclusion statement with the Commission.

2. APPROVAL OF THE AGENDA

MOVED by Commissioner Graham, and **SECONDED** by Commissioner Stock,

That the Regional Water Supply Commission agenda be approved.

CARRIED

3. ADOPTION OF MINUTES

3.1. [20-653](#) Adoption of Minutes

Attachments: [Draft Minutes: September 16, 2020](#)

MOVED by Commissioner Stock, and **SECONDED** by Commissioner Taylor,
That the minutes of the September 16, 2020 meeting be adopted.

CARRIED

4. REPORT OF THE CHAIR

Chair Mersereau stated that Vice-Chair Baird has stepped down from his role on the Commission while engaged in provincial election activities.

5. PRESENTATIONS/DELEGATIONS

There were no presentations or delegations.

6. WATER ADVISORY COMMITTEE REPORT

6.1. Water Advisory Committee Chair's Report - Verbal

R. Hunsinger, Water Advisory Committee Chair, reported that the Committee has re-established the following working groups:

- Long Term Water Supply and Demand Management
- Water Quality
- Major Capital Projects
- Water Rates

He stated that the working groups will allow the committee to better serve the Commission.

6.2. [20-656](#) Draft Water Advisory Committee Minutes September 24, 2020

Attachments: [Draft Minutes - Water Advisory Committee, September 24, 2020](#)

MOVED by Commissioner Rogers, and **SECONDED** by Commissioner Chambers,

That the draft September 24, 2020 Water Advisory Committee Minutes be received for information.

CARRIED

7. COMMISSION BUSINESS

7.1. [20-525](#) Regional Water Supply Strategic Plan - 2020 Progress Report

Attachments: [Staff Report: Regional Water Supply Strategic Plan - 2020 Progress Report](#)
[Appendix A: Regional Water Supply Strategic Plan Progress Report Dashboard](#)

T. Robbins provided a summary of the report as presented.

The Commission thanked staff for the report.

Staff answered questions from the Commission regarding:

- Water quality aspects related to climate change and resiliency
- Water filtration
- Biodiversity in the watershed
- Agricultural land

Motion Arising

MOVED by Commissioner Graham, and **SECONDED** by Commissioner Szpak,

That any movement toward a filtration program be based on sound health guidelines and demonstrable health benefits.

Discussion took place about the motion.

DEFEATED

Opposed

Chambers; Duncan; Harper; Loveday; Mersereau; Morrison; Rogers; Stock; Taylor; Young

MOVED by Commissioner Stock, and **SECONDED** by Commissioner Morrison,

That the Regional Water Supply Commission recommends to the Capital Regional District Board:

That the Regional Water Supply Strategic Plan - 2020 Progress Report be received for information and that the strategic priorities and actions planned in 2021-2022 that deliver on the Plan be confirmed.

CARRIED

7.2. [20-661](#) 2019 - 2022 Service Planning - Water

Attachments: [Staff Report: 2019 - 2021 Service Planning - Water](#)

[Appendix A: Community Need Summary - Water](#)

[Appendix B: Initiative Progress Report - Water](#)

T. Robbins provided a summary of the report as presented.

MOVED by Commissioner Rogers, and **SECONDED** by Commissioner Stock,
That the Regional Water Supply Commission recommends to the Capital
Regional District Board:

That Appendix A Community Need Summary - Water be approved as presented
and advanced to the October 28, 2020 provisional budget review process.

CARRIED

7.3. [20-651](#) Regional Water Supply Service - 2021 Operating and Capital Budget

Attachments: [Staff Report: Regional Water Supply Service - 2021 Operating and Capital Budget](#)
[Appendix A: 2021 Regional Water Supply Service Budget](#)
[Appendix B: Long Term Debt Obligations Summary](#)
[Appendix C: Agricultural Water Volumes and Rate Payments for 2011 – 2019](#)
[Appendix D: Wholesale Water Rate History and Projection](#)

T. Robbins provided a summary of the report as presented.

Staff answered questions from the Commission regarding:

- Cross connection control program
- Urban watershed
- Variable water rates
- Agricultural Water Rates Study

Motion Arising

MOVED by Commissioner Graham, and **SECONDED** by Commissioner Young,

That the Agricultural Water Rates Study be removed from the 2021 Operating and Capital Budget.

Discussion ensued and staff answered questions from the Commission about the Agricultural Water Rates Study.

DEFEATED**Opposed**

Chambers; De Vries; Duncan; Harper; Kahakauwila; Loveday; Mersereau; Morrison; Rogers; Stock; Szpak; Taylor; Zhelka;

Motion Arising

MOVED by Commissioner Szpak, and **SECONDED** by Commissioner Taylor,

That the Commission review the Terms of Reference for the Agricultural Water Rates Study prior to the commencement of the study.

Chair Mersereau tabled the motion arising until after consideration of the 2021 Operating and Capital Budget.

MOVED by Commissioner Chambers, and **SECONDED** by Commissioner Rogers,

That the Regional Water Supply Commission recommends that the Capital Regional District Board:

1. Approve the 2021 Operating and Capital Budget and the Five Year Capital Plan;
2. Approve the 2021 wholesale water rate of \$0.7148 per cubic metre;
3. Approve the 2021 agricultural water rate of \$0.2105 per cubic metre;
4. Direct staff to balance the 2020 actual revenue and expense on the transfer to the water capital fund; and
5. Direct staff to amend the Water Rates Bylaw accordingly.

CARRIED

The motion arising was brought back to the table.

Motion Arising

MOVED by Commissioner Stock, and **SECONDED** by Commissioner Hicks,

That the motion arising be amended to:

That the Commission review the Terms of Reference for the Agricultural Water Rates Study prior to the issuance of the Request for Proposal.

CARRIED

- 7.4. [20-663](#) Bylaw 4382: Regional Water Supply Water Works Facilities Loan Authorization Bylaw

Attachments: [Staff Report: Bylaw 4382 Regional Water Supply Loan Authorization](#)
[Appendix A: Bylaw 4382 Regional Water Supply Loan Authorization](#)

MOVED by Commissioner Stock, and **SECONDED** by Commissioner Morrison,

The Regional Water Supply Commission recommends to the Capital Regional District Board:

1. That Bylaw No. 4382 cited as "Regional Water Supply Water Works Facilities Loan Authorization Bylaw No. 5, 2020" be introduced and read a first, second and third time; and
2. That Bylaw No. 4382 be referred to the Inspector of Municipalities for approval, and if received, to proceed with elector approval by way of regional alternative approval process.

CARRIED

MOVED by Commissioner Szpak, and **SECONDED** by Commissioner Morrison,

That the Regional Water Supply Commission defer the remaining open and closed agenda items to a future meeting.

CARRIED

- 7.5. [20-636](#) Water Quality Summary Report for Greater Victoria Drinking Water System - December 2019 to May 2020

Attachments: [Staff Report: Water Quality Summary Report - Greater Vic - Dec 2019-May 2020](#)
[Appendix A: Water Quality Summary Report - Greater Vic - Dec 2019-May 2020](#)

This item was postponed to the November 25, 2020 meeting.

- 7.6. [20-655](#) Summary of Recommendations from Other Water Commissions

Attachments: [Summary of Recommendations from Other Water Commissions](#)

This item was postponed to the November 25, 2020 meeting.

7.7. [20-654](#) Water Watch Report

Attachments: [Water Watch Report October 13, 2020](#)

This item was postponed to the November 25, 2020 meeting.

8. CORRESPONDENCE

8.1. [20-659](#) BC Wildfire Service

Attachments: [Correspondence: BC Wildfire Service](#)

This item was postponed to the November 25, 2020 meeting.

9. NEW BUSINESS

9.1. November Meeting Schedule Change

10. MOTION TO CLOSE THE MEETING

10.1. [20-652](#) Motion to Close the Meeting

This item was postponed to the November 25, 2020 meeting.

11. RISE AND REPORT

12. ADJOURNMENT

MOVED by Commissioner Graham, and **SECONDED** by Commissioner Rogers,
That the meeting be adjourned at 1:30 p.m.

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, NOVEMBER 25, 2020**

SUBJECT **Water Quality Summary Report for Greater Victoria Drinking Water System
– December 2019 to May 2020**

ISSUE SUMMARY

To present the monitoring results for water quality conditions observed in the Greater Victoria Drinking Water System for the period of December 2019 to May 2020.

BACKGROUND

The Capital Regional District (CRD) supplies drinking water to the water distribution systems across Greater Victoria via the Regional Water Supply System. As a requirement under the *BC Drinking Water Protection Act*, the CRD monitors and reports on water quality to ensure the region's drinking water supply is safe and potable. The results are presented on a regular basis directly to the Commission and Island Health, and to the general public through the CRD website.

All public drinking water systems in BC must comply with the *BC Drinking Water Protection Act* and the *BC Drinking Water Protection Regulation*. In addition, the CRD relies upon water quality parameters in the Guidelines for Canadian Drinking Water Quality and guidelines developed by the US Environmental Protection Agency to inform the CRD's water quality monitoring program.

Water quality monitoring is one of the cornerstones of the multi-barrier approach to providing safe, potable drinking water to the region's residents. The monitoring program ensures proper integration of an understanding of source waters, treatment process, distribution infrastructure operations and maintenance, and the delivery of water to customers. The program also ensures that potential risks or concerns are effectively managed to ensure a safe drinking water supply.

Appendix A summarizes the monitoring results for raw water in Sooke Lake Reservoir, the treated water at the two water treatment plants and for the treated water in various parts of the supply and distribution systems for the winter/spring period from December 2019 to May 2020.

IMPLICATIONS

Environmental Implications

The summary report indicates very good overall source water quality and good drinking water quality in all system components of the Greater Victoria Drinking Water System. The system is monitored for physical, chemical and biological water quality parameters.

Monitoring results indicate that the CRD continues to meet guidelines for maintaining an unfiltered source water supply. Data from within the distribution systems also indicates a good balance between managing bacterial growth and ensuring good water quality with low concentrations of disinfection byproducts. Metal concentrations, including lead, are very low within the distribution systems and physiochemical parameters indicate a low metal corrosion potential of the drinking water. Further corrosion studies are ongoing.

Intergovernmental Implications

The CRD also provides compliance monitoring of the municipal systems within the region to deliver effective and efficient oversight for both monitoring and reporting of water quality within the overall water system. Responding to any issues that may arise remains the responsibility of the municipalities.

Social Implications

The full disclosure of water quality monitoring data maintains public confidence in the CRD managing the regional drinking water supply effectively. The data and reports are available online through the CRD public website. Staff respond to direct customer concerns and questions, and work with CRD operational staff, municipal staff, small system operators and Island Health officials to ensure good communication and support for the overall system.

CONCLUSIONS

The water quality monitoring program remains an essential component in the delivery of a safe and abundant drinking water supply to the region. Monitoring results for winter 2019 to spring 2020 indicate good water quality overall, and all parameters indicate stable general conditions.

RECOMMENDATION

That the Regional Water Supply Commission receive the Water Quality Summary Report for the Greater Victoria Drinking Water System – December 2019 to May 2020 for information.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services

ATTACHMENT

Appendix A: Water Quality Summary Report for the Greater Victoria Drinking Water System
– December 2019 to May 2020

WATER QUALITY SUMMARY REPORT FOR THE GREATER VICTORIA DRINKING WATER SYSTEM December 2019 to May 2020

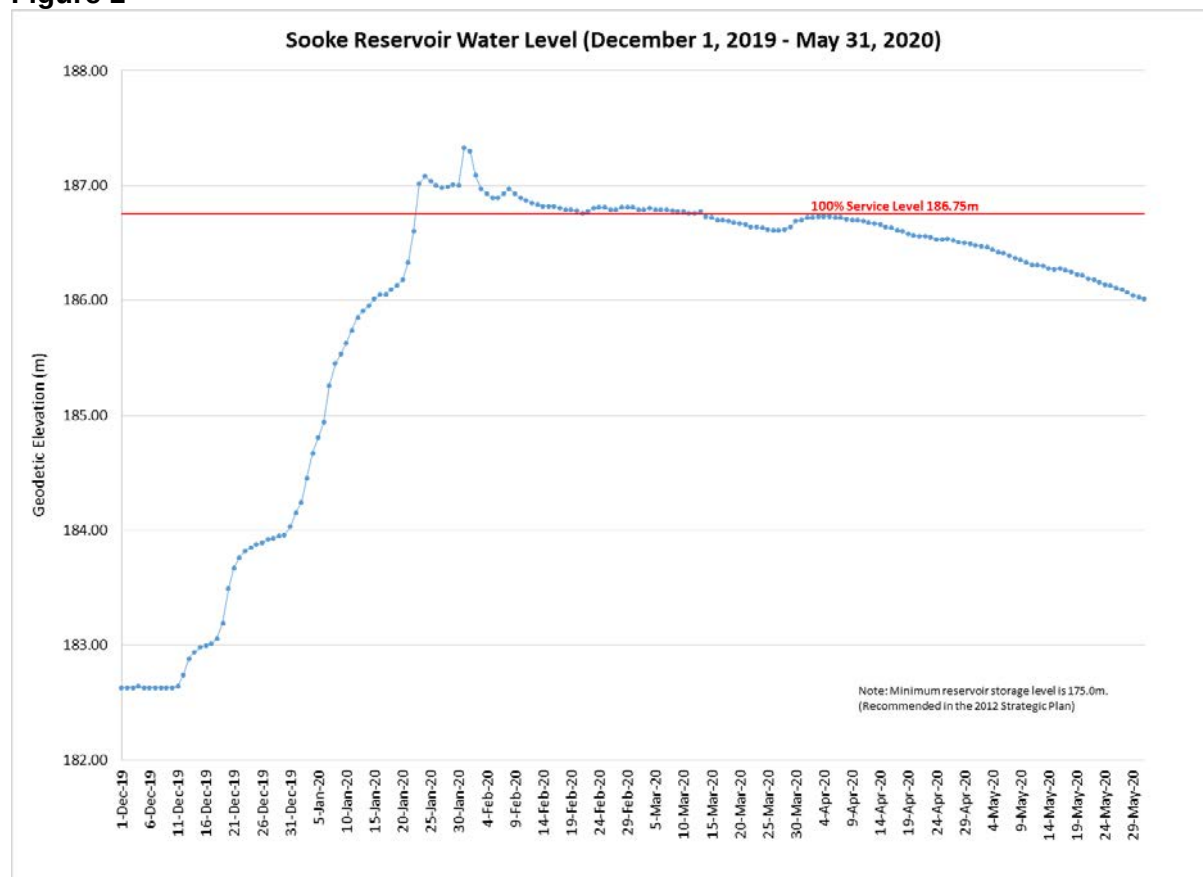
September 2020

SOURCE WATER – SOOKE LAKE RESERVOIR

Physical Parameters

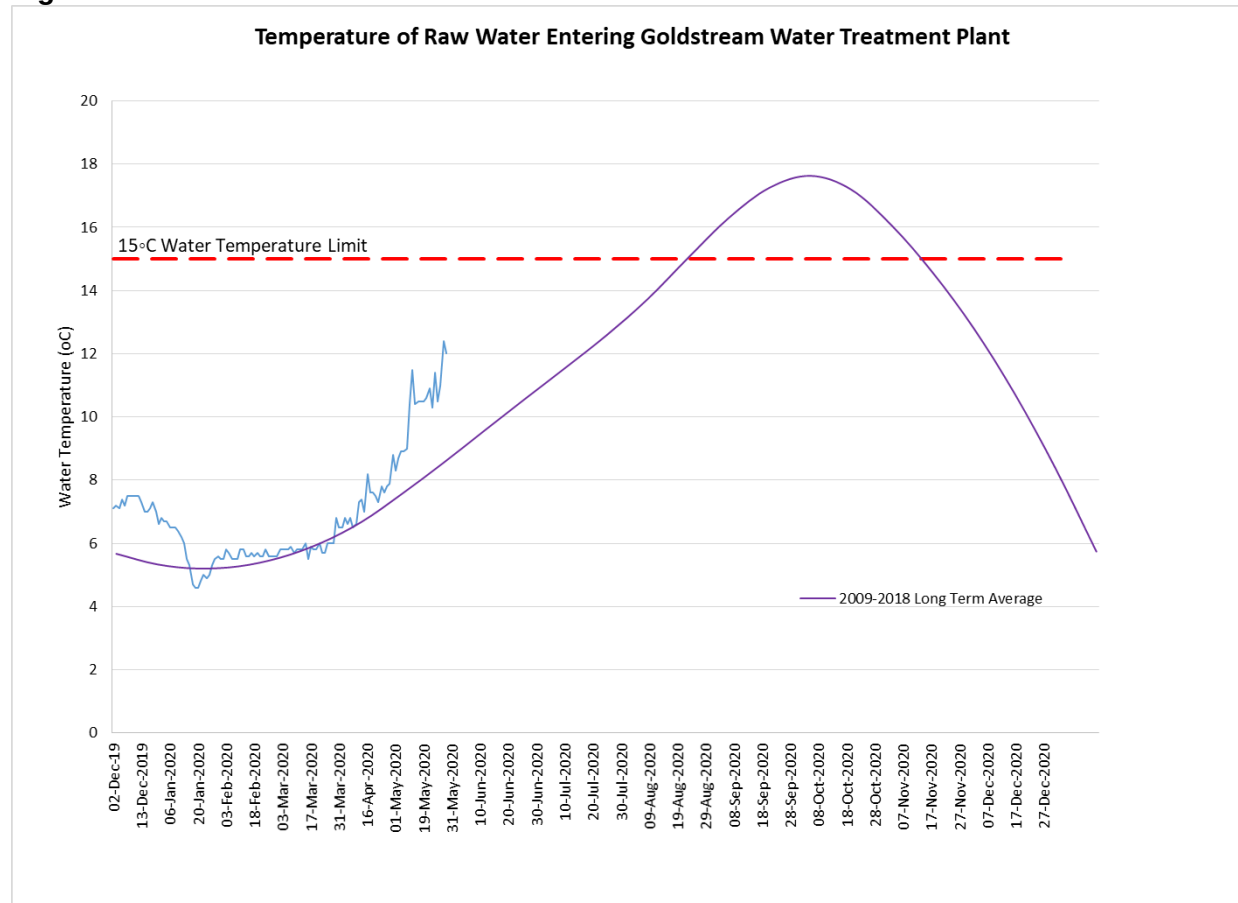
Water Levels. Sooke Lake Reservoir was at 69% of full capacity at the start of this reporting period on December 1, 2019 (Figure 1). November and December 2019 were unusually dry in comparison to previous years when Sooke Lake Reservoir was typically filled by year's end. Reservoir levels began rising quickly on the last day of December and all through January 2020 until it reached the full service level on January 23, 2020. The last year the reservoir filled that late was 2013.

Figure 1



Water Temperature. The raw water temperature measured at the Goldstream Water Treatment Plant remained low until the end of April (Figure 2) and rose quickly to about 12°C at the end of May with the onset of the seasonal thermal stratification in the Sooke Lake south basin. The accelerated warming of the water during May was more profound than in a typical year but still within what is considered normal.

Figure 2



Turbidity. Turbidity in the lake near the intake tower remained well below the 1.0 Nephelometric Turbidity Unit (NTU) limit for the entire reporting period (Table 1). Heavy rainfall and runoff events in January and February, including a relatively rare extreme rain event on January 31, had no measurable impact on the raw water turbidity. This demonstrates the robustness of the Sooke Lake Reservoir in terms of turbidity impacts. The low turbidity of the raw water allows the UV disinfection stage to remain effective at inactivating bacteria and parasites.

Table 1

Sooke Reservoir, South Basin (1m) - SOL-00-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Turbidity	15	NTU	0.25	0.45	0.31

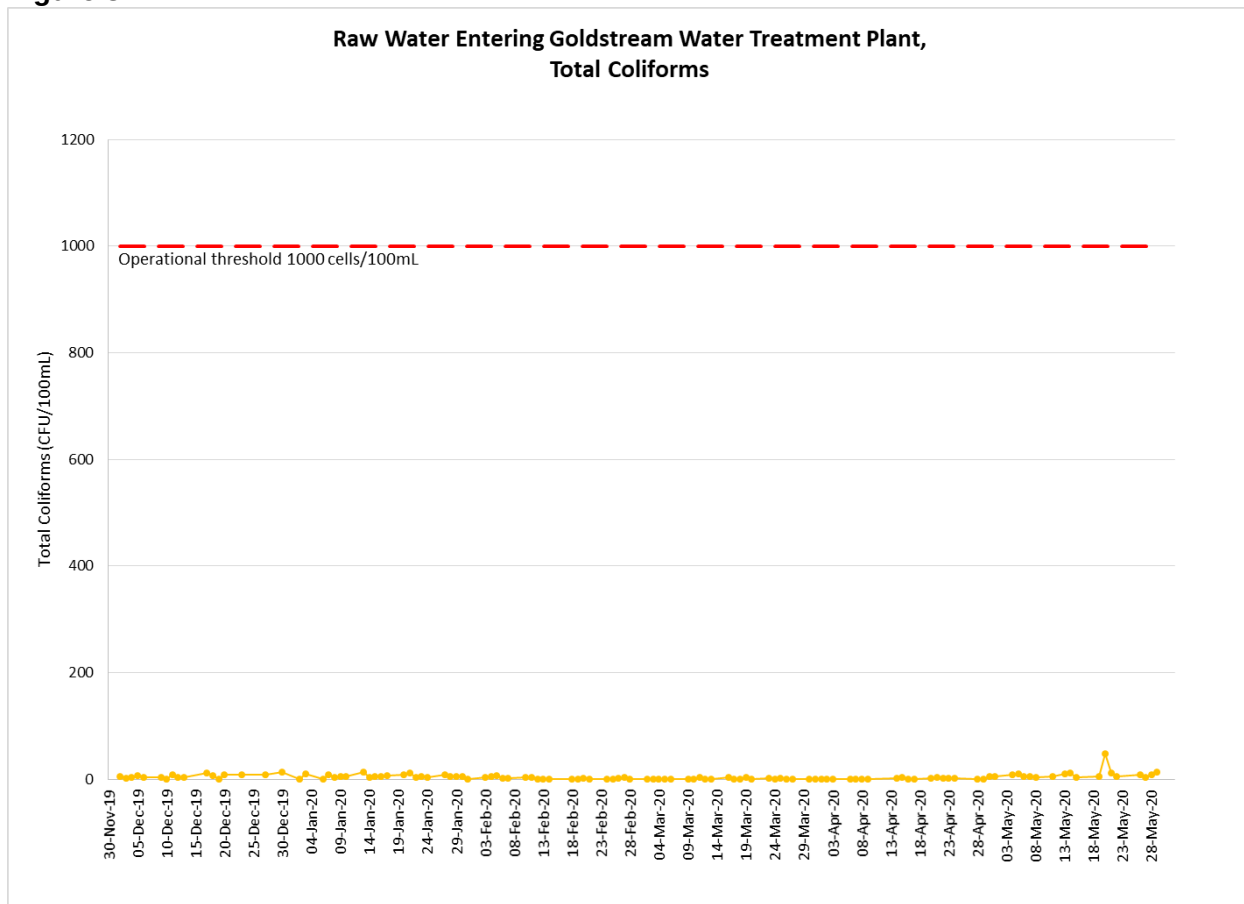
Water Transparency. The transparency of the lake water measured with the Secchi Disc in the lake was high (between 7 and 9 m) and consistent with the long-term average.

Dissolved Oxygen. The dissolved oxygen concentrations at three lake sampling stations have been consistently between 9-10 mg/L from surface to bottom. This well-oxygenated state prevents internal nutrient loading or metal releases from lake sediments during summer lake stratification, and is another indicator of the oligotrophic status of Sooke Lake.

Bacteria

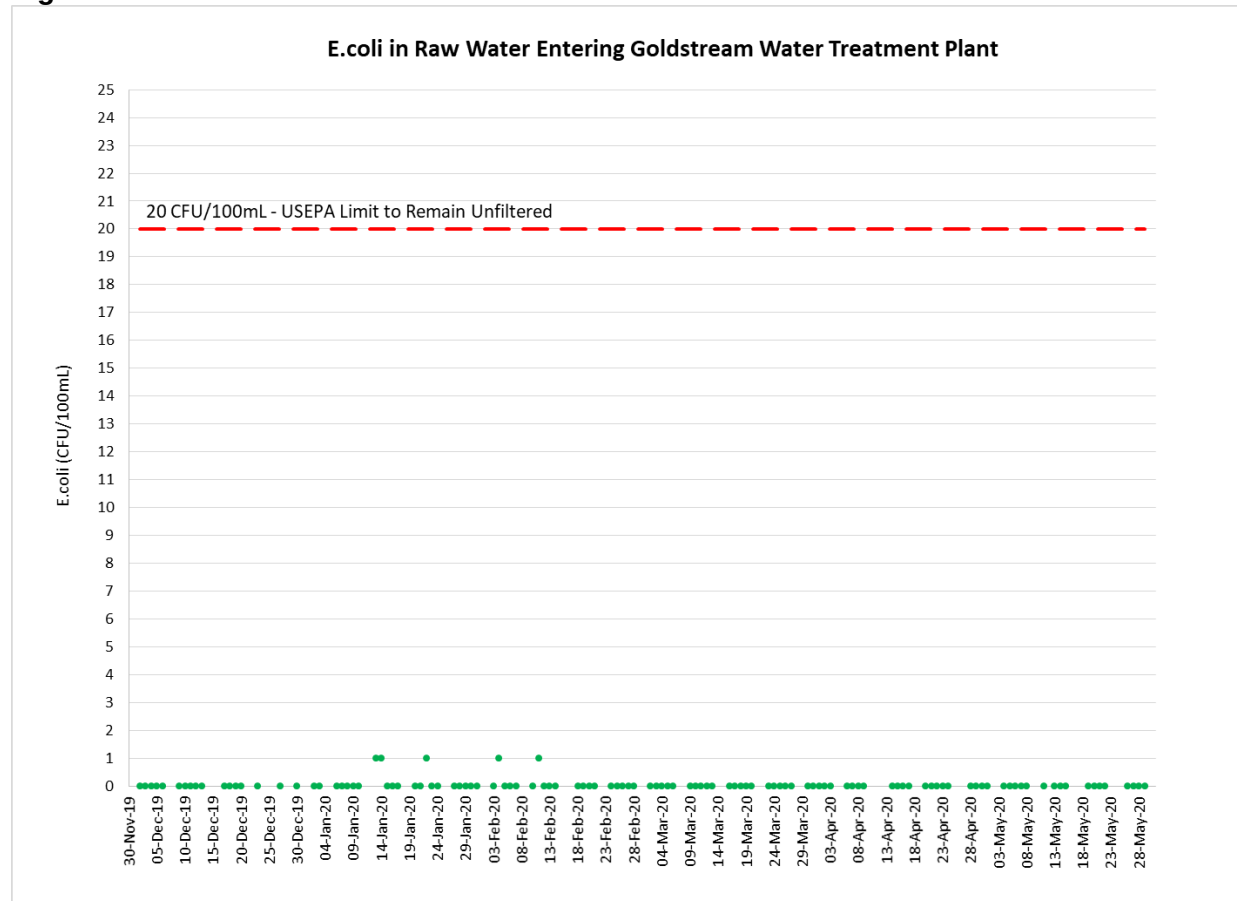
Total Coliform Bacteria and E. Coli The total coliform concentrations in the raw source water entering the Goldstream Water Treatment Plant remained very low throughout the entire reporting period (Figure 3).

Figure 3



E. coli concentrations during the reporting period were mostly non-detected or extremely low and therefore consistently well under the limit for meeting the United States Environmental Protection Agency filtration exemption criteria for surface water used for drinking water supply (Figure 4). These results are very typical for Sooke Lake Reservoir during the winter and spring season.

Figure 4



Nutrients

In general, the nutrient concentrations during the reporting period confirmed the ultra-oligotrophic status of Sooke Lake Reservoir, which is indicative of very low productivity in an upland lake with a virtually undisturbed catchment. This lake status is demonstrated by very low overall nutrient concentrations with a high nitrogen:phosphorus ratio and dissolved organic nitrogen being the dominant constituent of the total nitrogen. These conditions allow only limited biological activity in the lake, thus ensuring a good quality source for unfiltered drinking water. Significant rainfall events during the winter months did result in some measurable nutrient loads entering the lake, especially in the North Basin where the main tributaries discharge into. In particular, phosphorus concentrations exhibited some spikes following rainfall and runoff events. These naturally-added nutrients were then quickly consumed by aquatic organisms, which is an indication of a healthy and functioning food chain in the lakes ecosystem (Table 2 and 3).

Table 2

Sooke Reservoir, South Basin (1m) - SOL-00-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Total Nitrogen	7	ug/L	99	137	116
Total Phosphorus	10	ug/L	<1	4.10	2.21

Table 3

Sooke Reservoir, North Basin (1m) - SOL-04-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Total Nitrogen	7	ug/L	91	152	114
Total Phosphorus	6	ug/L	<1	2.80	1.65

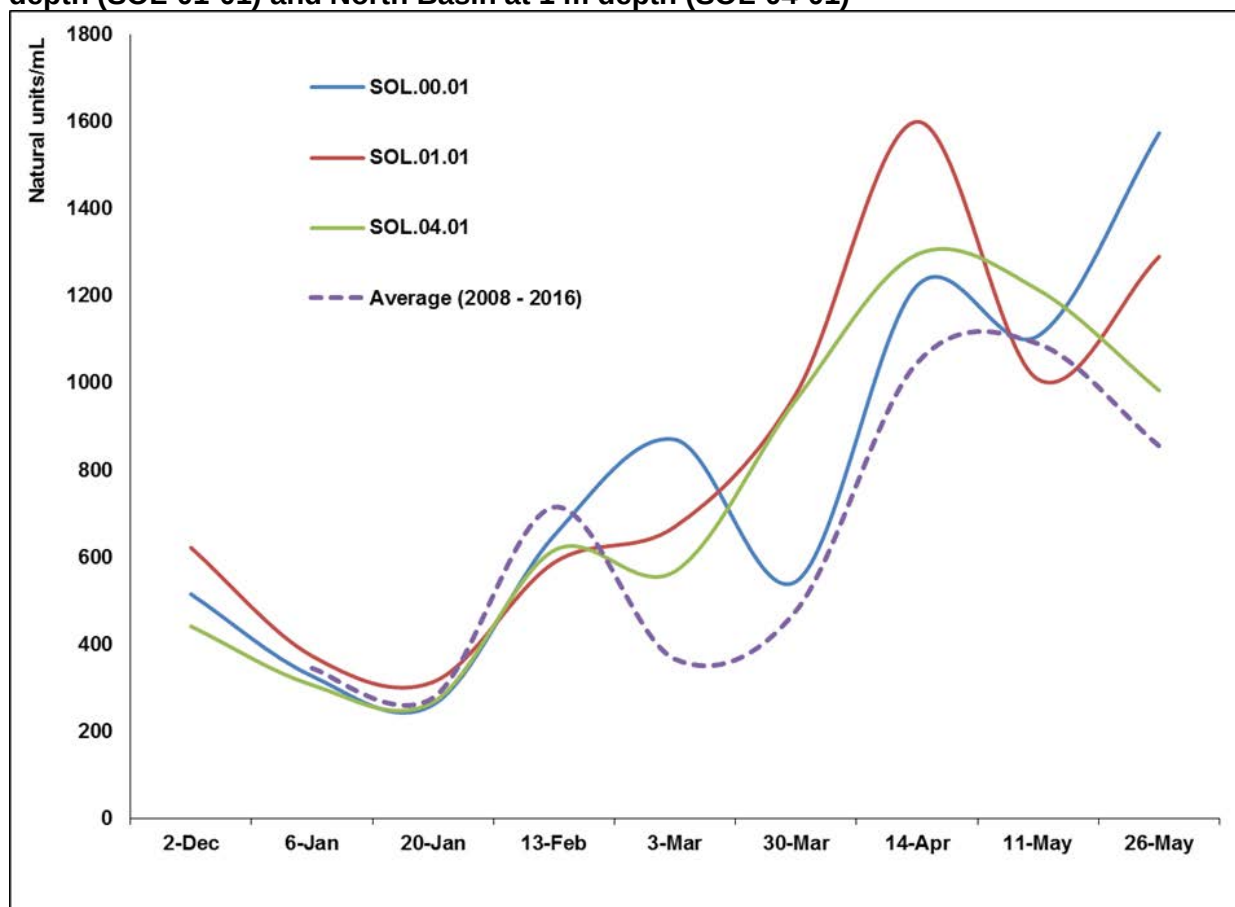
Protozoan Parasites

In five tests during this reporting period in the raw water entering the Goldstream Water Treatment Plant, no *Cryptosporidium* oocysts and no *Giardia* cysts were found.

Algae

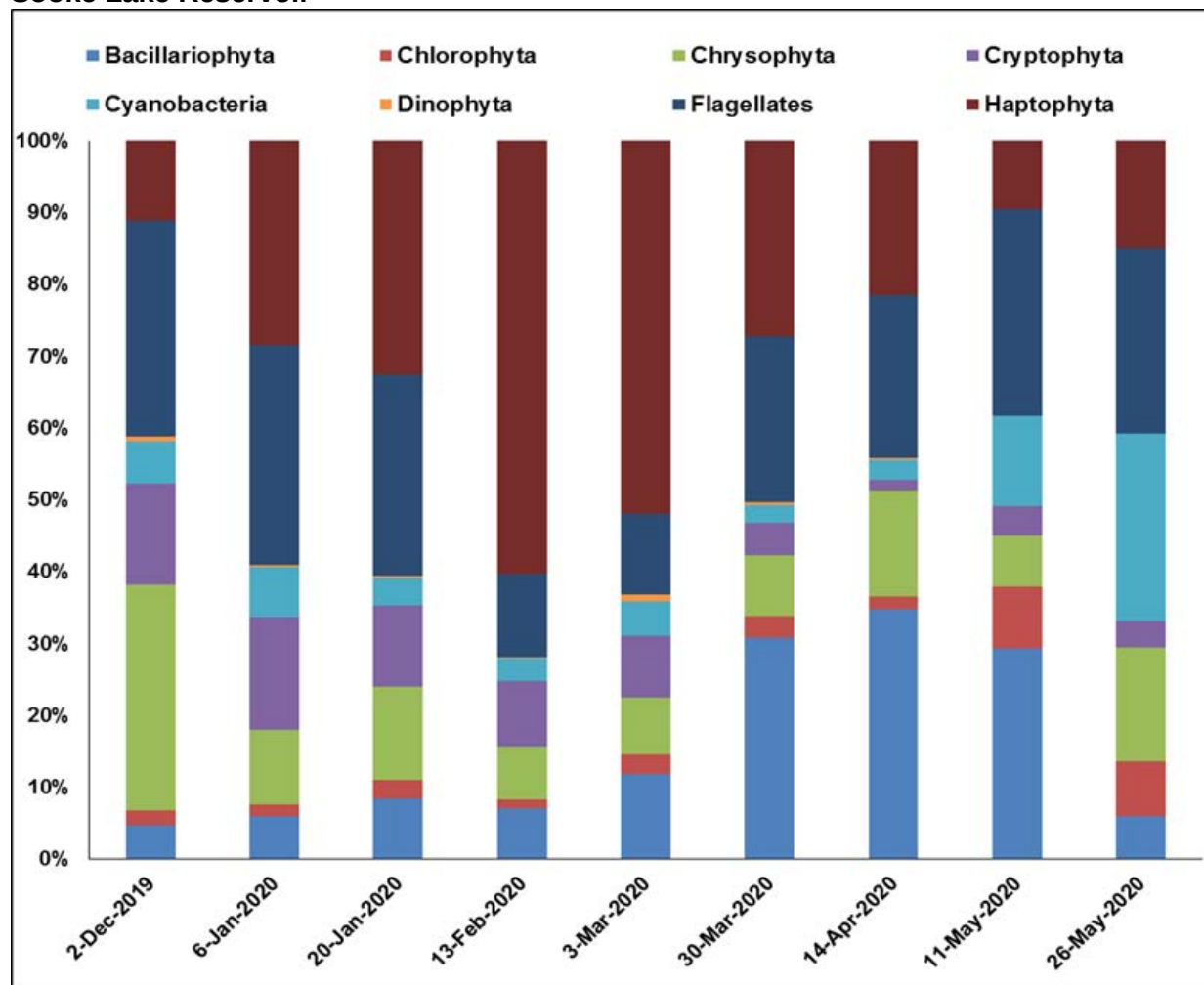
From December 2019 to May 2020, we observed that the algal abundance (natural unit counts) was quite similar to the long-term trend (Figure 5).

Figure 5: Total algal concentration (natural units/mL) from December 2019 to May 2020, Sooke Lake Reservoir, Intake Location at 1 m depth (SOL-00-01), South Basin at 1 m depth (SOL-01-01) and North Basin at 1 m depth (SOL-04-01)



In general, algal abundance started to increase in winter and peaked in the spring. Although algal groups varied in abundance patterns, the abundance of each algal group was quite similar to those observed in previous years (Figure 6). For instance, the diatoms *Asterionella* sp., *Cyclotella* spp., *Urosolenia* sp. increased their numbers in winter and peaked in the middle of spring. The fluctuating abundance of golden algae, e.g., *Dinobryon* spp. showed the same pattern as the diatoms. On the other hand, Picocyanobacteria (cell size around 2 microns), e.g., *Cyanodictyon* spp., *Aphanothece* spp., *Aphanocapsa* spp., increased in spring and would peak in the summer.

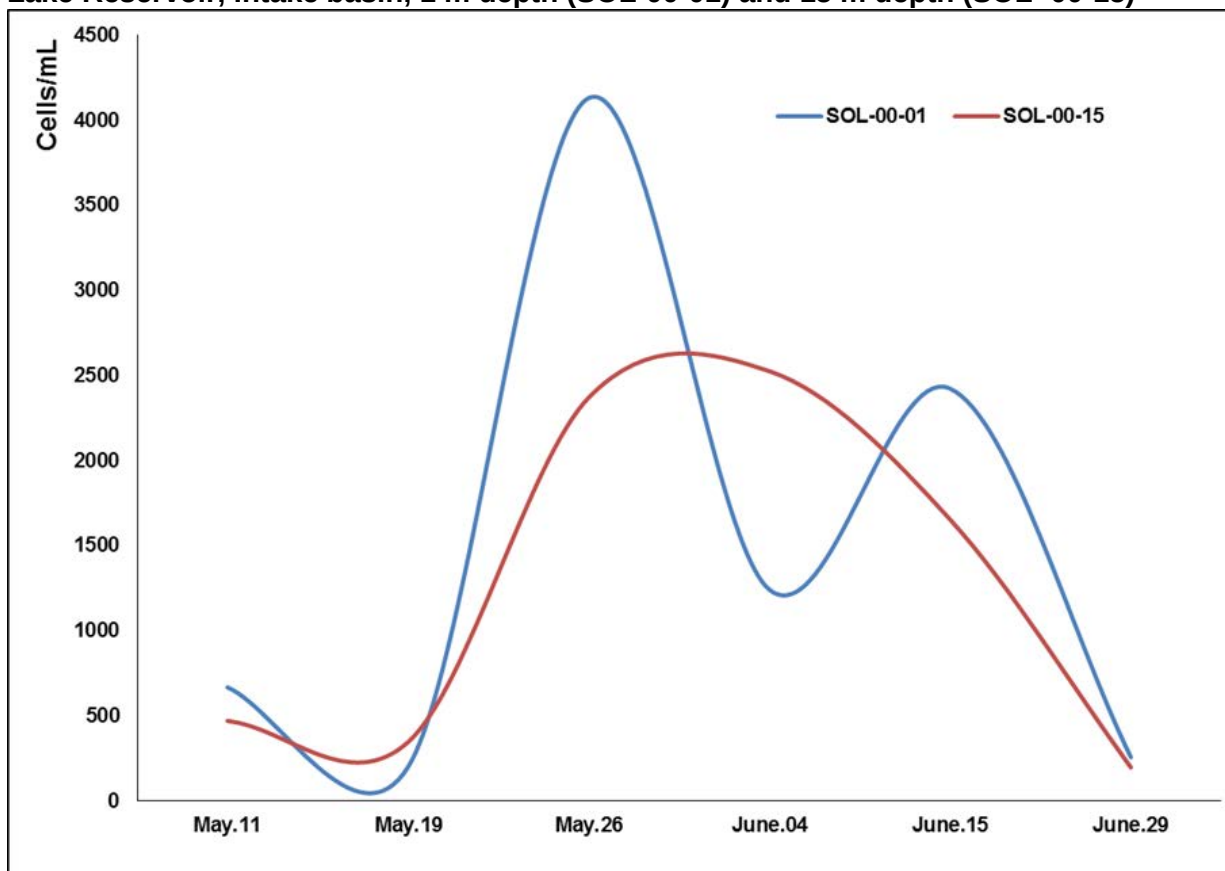
Figure 6: Abundance percent of different algal groups from December 2019 to May 2020, Sooke Lake Reservoir



We recorded a bloom event of a colonial golden alga, *Uroglena* sp., in Sooke Lake Reservoir (SOL) from early of May to late June 2020 (Figure 7). That bloom was responsible for some taste and odour complaints from customers (approximately 20 complaints) during that period and a public advisory was issued between June 2 and 9, 2020. When in a bloom state, *Uroglena* sp. can cause a fishy smell or metallic-fishy taste. Taste and odour, however, are aesthetic issues and cause no health concern. Studies showed that phosphorus is the limiting factor for *Uroglena* sp. growth. However, as it is a mixotrophic alga, i.e., they carry out photosynthesis and/or feed on bacteria and micro-particles, it is able to bloom in water bodies with very low phosphorus concentration, such as Sooke Lake Reservoir. *Uroglena* blooms are not common in Sooke Lake

Reservoir. Interestingly, a number of southern BC surface waters experienced *Uroglena* blooms this summer, which indicates that favourable environmental conditions, such as frequent rainfalls, well into July were likely the cause for these events.

Figure 7: Concentration (cells/mL) of *Uroglena* sp. from May 11 to June 29, 2020, Sooke Lake Reservoir, Intake basin, 1 m depth (SOL-00-01) and 15 m depth (SOL -00-15)



Overall, from December 2019 to May 2020, algal dynamics were in line with well-established long-term trends in Sooke Lake Reservoir. Except for the short-term taste and odour episode from the aforementioned *Uroglena* bloom, there were no water quality concerns from an algal perspective.

WATER TREATMENT PLANTS

Goldstream Water Treatment Plant (formerly called Japan Gulch Disinfection Facility)

Turbidity The raw water entering the Goldstream Disinfection Facility was generally well below 1 NTU during the reporting period (Table 4). On May 5, 2020, the turbidity exceeded 1 NTU slightly for about one hour, likely due to operational activities at the plant.

Table 4

Goldstream Water Treatment Plant Turbidity - Raw Water	
Samples Collected	138
Minimum	0.2 NTU
Maximum	1.3 NTU
Mean	0.3 NTU

Main #4 First Customer Sampling Station Total Coliform Bacteria and E. Coli

At the Main #4 First Customer Sampling Station immediately downstream of the Goldstream Water Treatment Plant, no samples tested positive for total coliform bacteria during the entire reporting period.

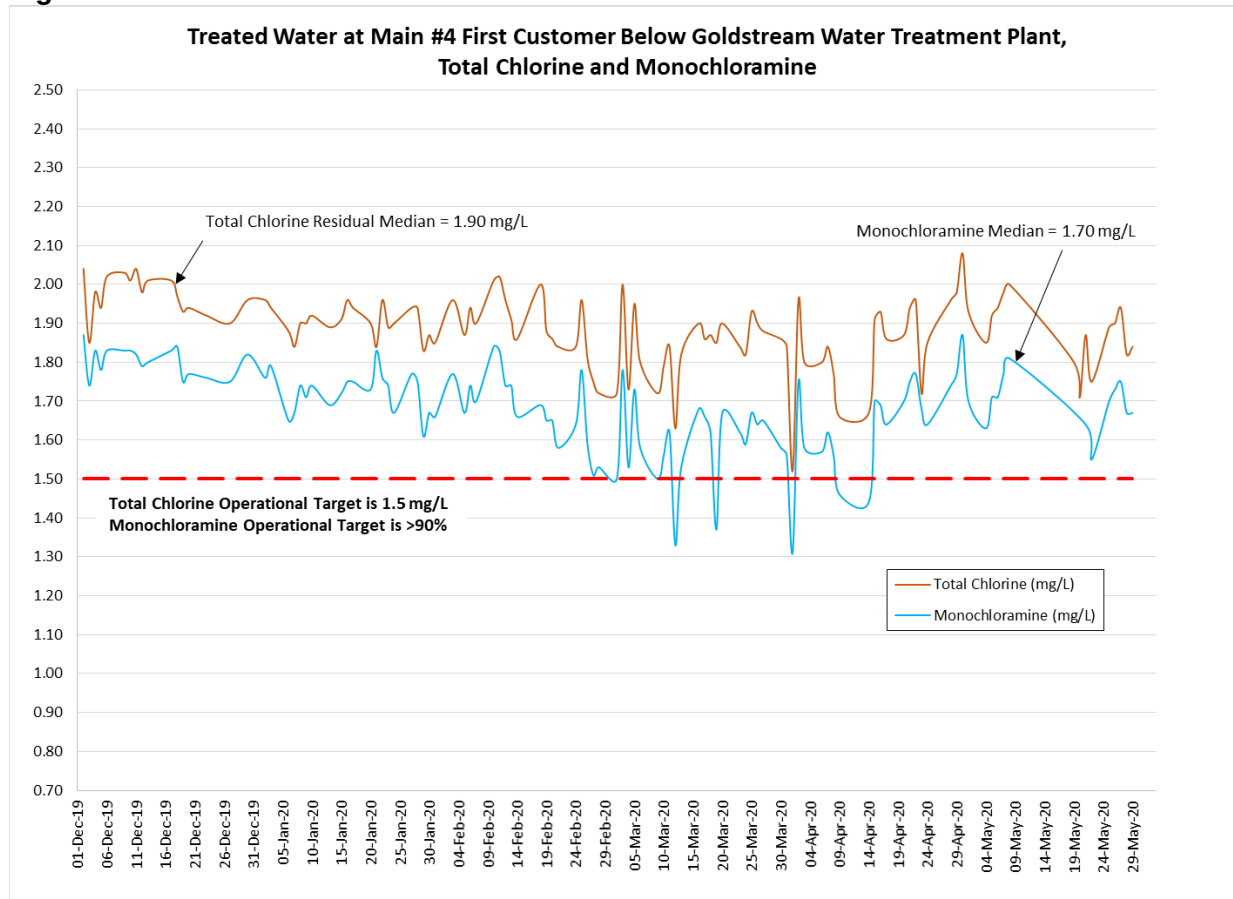
Main #5 First Customer Sampling Station Total Coliform Bacteria and E. Coli

At the Main #5 First Customer Sampling Station immediately downstream of the Goldstream Water Treatment Plant, two samples in May tested positive for total coliform bacteria. Staff suspected that the sampling line and sampling tap were contaminated and after flushing and cleaning the sampling installations, retesting yielded total coliform free results. No *E.coli* bacteria were found in any samples collected from this site.

These results demonstrate the efficacy of the disinfection process at the Goldstream Water Treatment Plant.

Secondary Disinfection Figure 7 shows the total chlorine and monochloramine concentrations at the Main #4 First Customer Sampling Station. The target concentration of 1.5 mg/L for total chlorine was consistently achieved. The target ratio of 90% monochloramine was not consistently achieved due to the operation of the old chlorine-gas facility during this reporting period. However, adequate and effective secondary disinfection across the entire system was provided.

Figure 7



Sooke River Road Water Treatment Plant

Turbidity The raw water entering the Sooke River Road Water Treatment Plant was consistently well under 1 NTU (Table 5).

Table 5

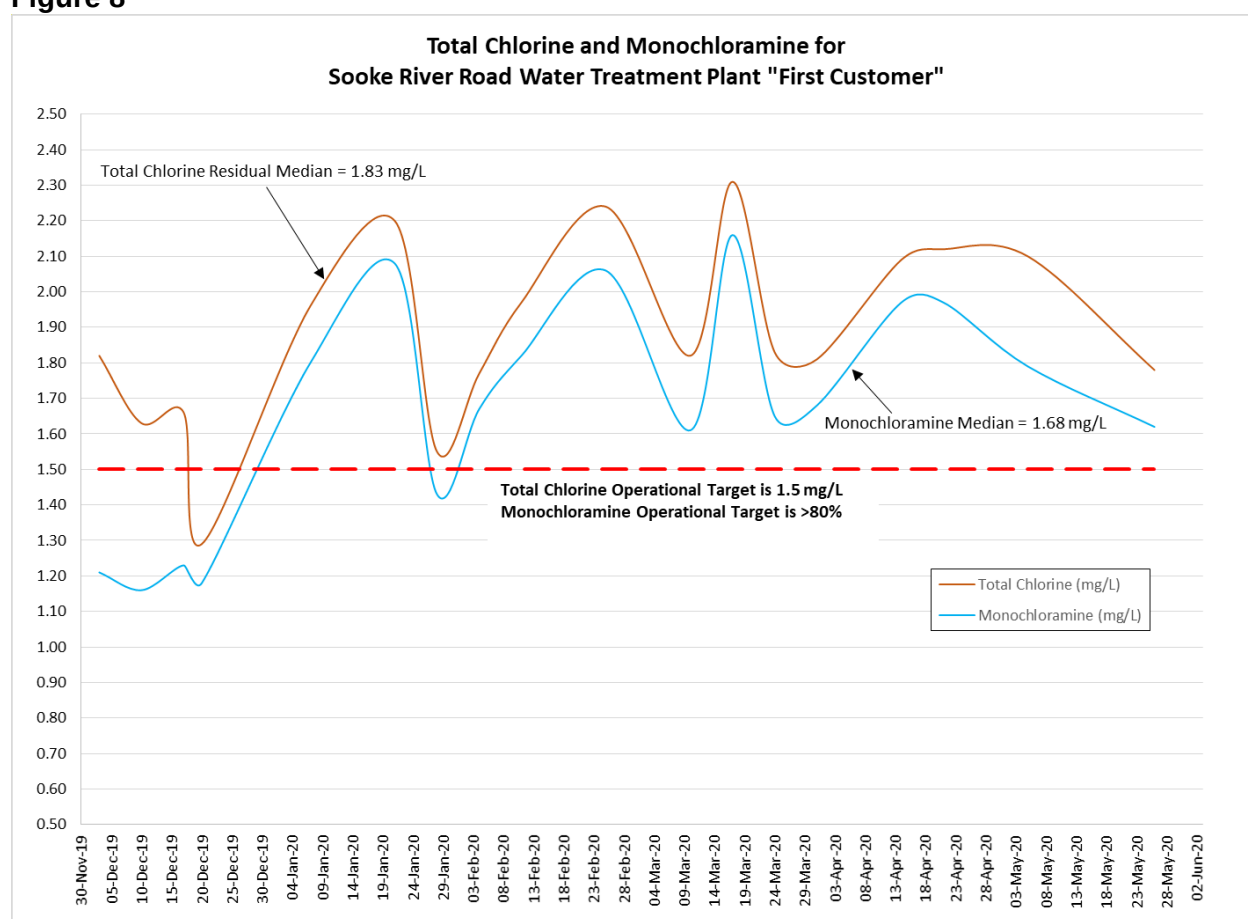
Sooke River Road Water Treatment Plant Turbidity - Raw Water	
Samples Collected	19
Minimum	0.20 NTU
Maximum	0.55 NTU
Mean	0.30 NTU

Sooke First Customer Sampling Station Total Coliform Bacteria and *E. Coli*

At the Sooke First Customer Sampling Station immediately downstream of the Sooke Water Treatment Plant, total coliform or *E.coli* bacteria were not found in any samples collected from this site. These results demonstrate the efficacy of the disinfection process at the Sooke Water Treatment Plant.

Secondary Disinfection Figure 8 shows the total chlorine and monochloramine concentrations at the Sooke First Customer Sampling Station. The target concentration of 1.5 mg/L for total chlorine was consistently achieved during the reporting period except for a short period in December 2019. The slightly lower target ratio of 80% monochloramine for this facility was consistently achieved after mid December 2019. The residual concentrations were adequate to provide effective secondary disinfection across this much smaller distribution system.

Figure 8



DISTRIBUTION SYSTEMS

Goldstream (Japan Gulch) Service Area

Table 6

Month/Year	Samples Collected	Total Coliforms (CFU/mL)				E.coli (CFU/100mL) Samples > 0	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC > 0	Resamples TC > 0	Samples TC > 10		Samples Collected	Adverse > 1 NTU	Median mg/L as CL2	Median °C
Dec-19	326	1	0.3	0	5	0	51	0	1.44	8.0
Jan-20	369	0	0.0	0	0	0	57	0	1.47	7.6
Feb-20	318	1	0.3	0	1	0	52	0	1.54	7.5
Mar-20	350	0	0.0	0	0	0	59	0	1.48	7.9
Apr-20	350	3	0.9	0	0	0	51	0	1.47	9.9
May-20	339	9	2.7	0	1	0	57	0	1.49	12.8
Total:	2052	14	0.7	0	7	0	327	0	1.48	8.0

Total Coliform Bacteria and E. Coli

Only 14 out of 2,052 distribution system samples, or 0.7% of all bacteriological samples during the reporting period, tested positive for total coliform bacteria. In all of these cases, the resample was free of total coliform bacteria, indicating that no actual water contamination was the cause of these coliform hits. No *E.coli* bacteria were found (Table 6).

Turbidity

None of the 327 turbidity samples registered higher than 1 NTU (Table 6). This is an indication of good drinking water quality.

Total Chlorine Residual

A median total chlorine residual concentration of 1.48 mg/L across the system indicates an effective secondary disinfection protecting the potability of the treated drinking water as it flows throughout the system (Table 6).

Water Temperature

The temperature of the drinking water in the system during this reporting period was well within the aesthetic objective in the Canadian Drinking Water Quality Guidelines, which contributed to the excellent quality of the drinking water supplied to customers.

Water Chemistry

The average pH of the drinking water in the Goldstream Service Area was 7.11 during the reporting period. The pH ranged from 6.7 to 7.7, which is typically when operating the chlorine-gas disinfection facility. The average alkalinity was 13.3 mg/L. During the previous reporting period, the new hypochlorite plant was in operation which resulted in a generally higher pH and higher alkalinity throughout the system.

Disinfection Byproducts

The three typically monitored disinfection byproducts in a drinking water system have all been well below the Health Canada established health limits in the Goldstream Service Area (Table 7).

Table 7

Disinfection Byproducts - Greater Victoria Distribution System						
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	MAC (Maximum Acceptable Concentration)
Haloacetic Acids (HAAs)	12	ug/L	18.5	22.0	16.1	80
Trihalomethanes (THMs)	12	ug/L	17.0	21.0	16.8	100
NDMA	12	ng/L	<1.9	<1.9	<1.9	40

Metals

A comprehensive metals analysis was conducted every second month at four different locations in the Goldstream Service Area: (1) where treated water enters the Victoria/Esquimalt System, (2) the Oak Bay System, (3) one in Langford and (4) one in North Saanich. Out of the 32 tested metals, four are monitored particularly closely: iron, manganese, lead and copper. All metal concentrations were below the respective Health Canada maximum acceptable concentration or the aesthetic objective. The sampling station where the Oak Bay System is supplied continued to produce elevated lead and copper concentrations, as compared to everywhere else in the system. Extra investigations have concluded that this is a localized issue likely related to the plumbing material used for this particular sampling station, which does not cause any health concerns for downstream customers in Oak Bay. Changes to this installation are planned.

Sooke Service Area

Table 8

Month/Year	Samples Collected	Total Coliforms (CFU/mL)				E.coli (CFU/100mL) Samples > 0	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC > 0	Resamples TC > 0	Samples TC > 10		Samples Collected	Adverse > 1 NTU	Median mg/L as CL ₂	Median °C
Dec-19	40	0	0.0	0	0	0	7	0	1.13	7.6
Jan-20	39	0	0.0	0	0	0	5	0	1.08	7.5
Feb-20	30	0	0.0	0	0	0	4	0	1.18	7.0
Mar-20	40	0	0.0	0	0	0	4	0	1.12	7.6
Apr-20	24	0	0.0	0	0	0	4	0	1.36	10.3
May-20	29	1	3.4	0	0	0	4	0	1.38	13.5
Total:	202	2	0.6	0	0	0	28	0	1.16	7.6

Total Coliform Bacteria and E. Coli

In all 202 bacteriological samples during the reporting period, only one sample tested positive for total coliform bacteria and a prompt resample did not confirm any actual water contamination. No sample contained *E.coli* bacteria (Table 8).

Turbidity

All 28 turbidity samples registered below 1 NTU (Table 8). This is an indication of good drinking water quality.

Total Chlorine Residual

A median total chlorine residual concentration of 1.16 mg/L across the system indicates an effective secondary disinfection protecting the potability of the treated drinking water as it flows throughout the system (Table 8).

Water Temperature

The temperature of the drinking water in the system during this reporting period was well within the aesthetic objective in the Canadian Drinking Water Quality Guidelines contributed to the excellent quality of the drinking water supplied to customers.

Water Chemistry

The average pH of the drinking water in the Sooke Service Area was 7.48 during the reporting period. The pH ranged from 7.0 to 8.1 and is typically very stable and consistent across this system. The average alkalinity was 16.13 mg/L.

Disinfection Byproducts

The three typically monitored disinfection byproducts in a drinking water system have all been well below the Health Canada established health limits in the Sooke Service Area (Table 9).

Table 9

Disinfection Byproducts - Sooke Distribution System						
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	MAC (Maximum Acceptable Concentration)
Haloacetic Acids (HAAs)	2	ug/L	26.0	29.0	27.5	80
Trihalomethanes (THMs)	2	ug/L	36.0	43.0	39.5	100
NDMA	2	ng/L	<1.9	<1.9	<1.9	40

Metals

A comprehensive metals analysis was conducted every second month in one location in the Sooke Service Area: at the end of the distribution system near Whiffen Spit. Out of the 32 tested metals, four are monitored particularly closely: iron, manganese, lead and copper. All metal concentrations were well below the respective Health Canada maximum acceptable concentration or the aesthetic objective.

CONCLUSION

During this winter/spring reporting period (December 2019-May 2020), all parameters from source water to treated water indicate stable conditions and good water quality. All trends are in line with historic data and confirm the adequacy of existing water treatment and performance of all major infrastructure components. The multi-barrier approach applied to the Greater Victoria Drinking Water System ensures the excellent drinking water quality achieved during the reporting period.



Making a difference...together

**CAPITAL REGIONAL DISTRICT
SAANICH PENINSULA WATER COMMISSION
Thursday, October 15, 2020**

**MEETING HOTSHEET
(ACTION LIST)**

The following is a quick snapshot of the FINAL Saanich Peninsula Water Commission decisions made at the meeting. The minutes will represent the official record of the meeting.

3. ADOPTION OF MINUTES

That the minutes of the July 16, 2020 meeting be adopted.

CARRIED

6. COMMISSION BUSINESS

6.1. 2019-2022 Water Service Planning

The Saanich Peninsula Water Commission recommends to the Capital Regional District Board:

That Appendix A Community Need Summary – Water be approved as presented and advanced to the October 28, 2020 Provisional budget review process.

CARRIED

6.2. Saanich Peninsula Water Service - 2021 Operating and Capital Budget

The Saanich Peninsula Water Commission recommends that the Capital Regional District Board:

1. Approve the 2021 operating and capital budget;
2. Approve the 2021 Saanich Peninsula bulk water rate of \$1.0536 per cubic metre, and the Agricultural Research Station water rate of \$1.0888 per cubic metre, adjusted if necessary by any changes in the CRD Regional Water Supply wholesale water rate;
3. Direct staff to balance the 2020 actual revenue and expense on the transfer to capital reserve fund; and
4. Direct staff to amend the Bulk Water Rates Bylaw accordingly.

CARRIED

6.3. Summary of Recommendations from Other Water Commissions

That the Summary of Recommendations from other water commissions be received for information.

CARRIED

6.4. Water Watch Report

That the October 5, 2020 Water Watch Report be received for information.

CARRIED



Making a difference...together

**CAPITAL REGIONAL DISTRICT
JUAN DE FUCA WATER DISTRIBUTION COMMISSION
Meeting held Tuesday, October 6, 2020**

**MEETING HOTSHEET
(ACTION LIST)**

The following is a quick snapshot of the FINAL Juan de Fuca Water Distribution Commission decisions made at the meeting. The minutes will represent the official record of the meeting.

3. ADOPTION OF MINUTES

That the minutes of the June 2, 2020 meeting be adopted.

CARRIED

6. COMMISSION BUSINESS

6.1. JWDC 20-05 2019-2022 Water Service Planning

The Juan de Fuca Water Distribution Commission recommends to the Capital Regional District Board:

That Appendix A Community Need Summary – Water be approved as presented and advanced to the October 28, 2020 Provisional budget review process.

CARRIED

6.2. JWDC 20-04 Juan de Fuca Water Distribution Service 2021 Operating and Capital Budget

That the Juan de Fuca Water Distribution Commission recommends that the Capital Regional District Board:

1. Approve the 2021 Operating and Capital Budget and the Five Year Capital Plan;
2. Approve the 2021 Juan de Fuca Water Distribution Service retail water rate of \$2.3081 per cubic metre, adjusted if necessary by any change in the Regional Water Supply wholesale water rate; and
3. Amend the Water Distribution Local Service Conditions, Fees and Charges Bylaw accordingly.

CARRIED

Action: Staff to prepare a public FAQ highlighting some of the key elements of the 2021 Juan de Fuca Water Service budget, including details on the effects of Covid-19 on water demand and the water system and how the water rate funds capital projects and service infrastructure. The FAQ will be circulated through the Commission by email, posted on the website and through social media.

6.3. Bylaw No. 4379, Juan de Fuca Water Distribution, Loan Authorization Bylaw

The Juan De Fuca Distribution Commission recommends to the Capital Regional District Board:

1. That Bylaw No. 4379, Juan de Fuca Water Distribution Facilities Loan Authorization Bylaw No. 5, 2020, be introduced and read a first, second, and third time;
2. That elector assent for Bylaw No. 4379 in the entire service area be obtained via alternative approval process, according to section 345 of the Local Government Act, and if successful, referred to the Inspector of Municipalities for approval.

CARRIED

6.4. JWDC 20-06 Sun River Reservoir Agreement

That staff be directed to:

1. Finalize an agreement between Sun River Estates Ltd. and the CRD for the transfer of land for the new and future reservoirs and funding for required development reservoir capacity, subject to the proposed reservoir location meeting all zoning setback requirements;
2. Proceed with the design and construction of a new bolted steel reservoir to provide capacity for the future development requirements and to compensate for lost storage capacity in the existing reservoir;
3. Fund the Juan de Fuca Water Distribution share of the new bolted steel reservoir with up to \$930,000 in funds remaining in the Sun River Reservoir Capital Project 15-02; and
4. Fund a share of the new bolted steel reservoir up to \$200,000 provided by Sun River Estates Ltd. through the agreement.

CARRIED

6.5. Summary of Recommendations from Other Water Commissions

That the Summary of Recommendations from Other Water Commissions be received for information.

CARRIED

6.6. Water Watch Report

That the September 28, 2020 Water Watch report be received for information.

CARRIED

7. CORRESPONDENCE

7.1. Kemp Lake Waterworks Water Rates – K. Brehart, Chair of the Board of Trustees Kemp Lake Waterworks District

That the correspondence be received for information.

CARRIED

Opposed: Hicks

CAPITAL REGIONAL DISTRICT - INTEGRATED WATER SERVICES

Water Watch

Issued November 16, 2020

Water Supply System Summary:

1. Useable Volume in Storage:

Reservoir	November 30 5 Year Ave		November 30/19		November 15/20		% Existing Full Storage
	ML	MIG	ML	MIG	ML	MIG	
Sooke	76,317	16,790	64,026	14,086	71,456	15,720	77.1%
Goldstream	6,916	1,521	3,981	876	7,945	1,748	80.1%
Total	83,233	18,311	68,007	14,962	79,402	17,468	77.4%

2. Average Daily Demand:

For the month of November	102.7 MLD	22.59 MIGD
For week ending November 15, 2020	101.2 MLD	22.26 MIGD
Max. day November 2020, to date:	108.4 MLD	23.84 MIGD

3. Average 5 Year Daily Demand for November

Average (2015 - 2019)	98.2 MLD ¹	21.61 MIGD ²
-----------------------	-----------------------	-------------------------

¹MLD = Million Litres Per Day ²MIGD = Million Imperial Gallons Per Day

4. Rainfall November:

Average (1914 - 2019):	260.4 mm
Actual Rainfall to Date	152.3 mm (58% of monthly average)

5. Rainfall: Sep 1- Nov 15

Average (1914 - 2019):	355.7 mm
2020	443.6 mm (125% of average)

6. Water Conservation Action Required:

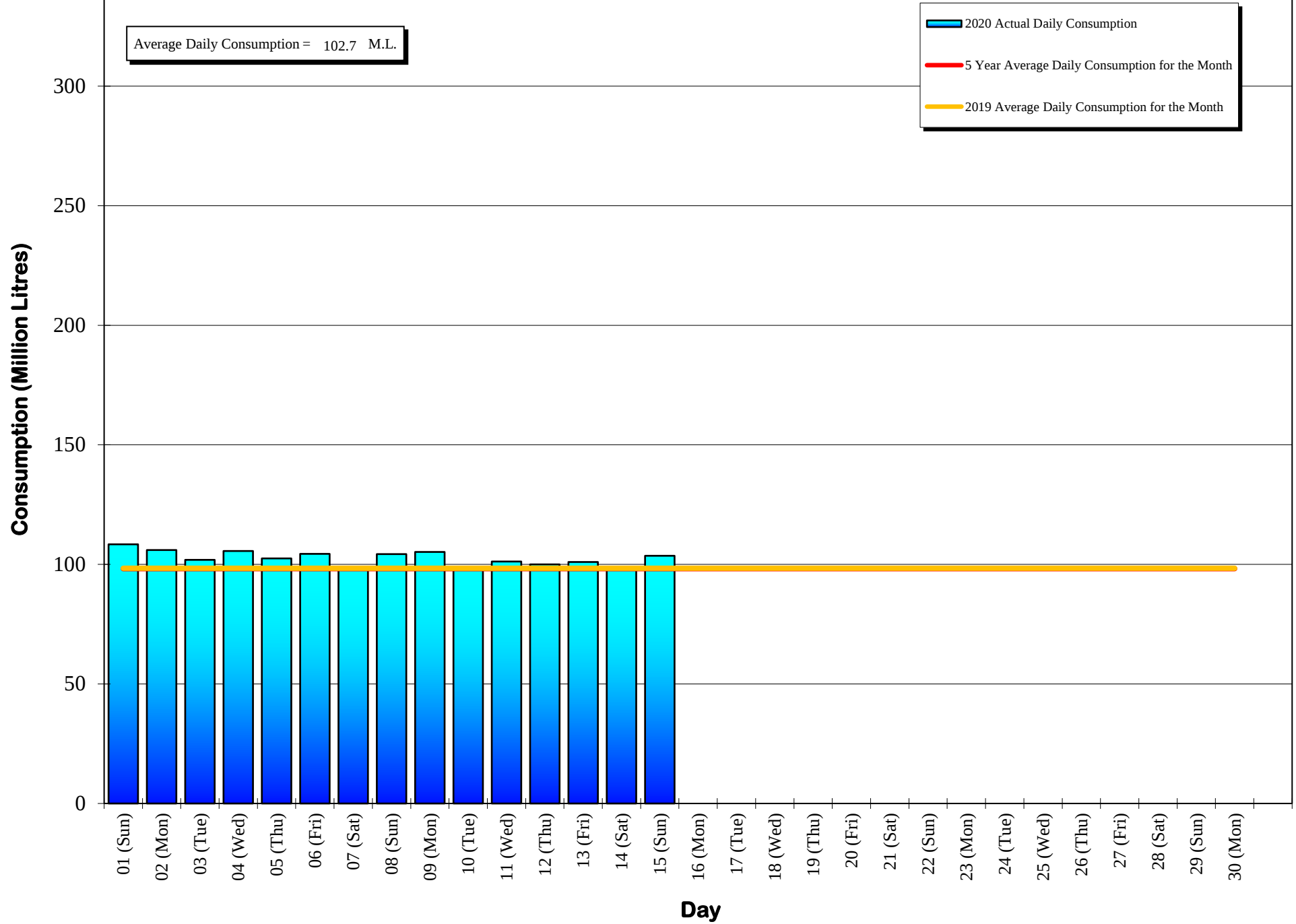
To avoid possible leaks this spring, now is the time to winterize your sprinkler system.
Visit www.crd.bc.ca/water for more information.

If you require further information, please contact:

Ted Robbins, B.Sc., C.Tech
General Manager, CRD - Integrated Water Services
or
Glenn Harris, Ph D., RPBio
Senior Manager - Environmental Protection

Capital Regional District Integrated Water Services
479 Island Highway
Victoria, BC V9B 1H7
(250) 474-9600

Daily Consumption
November 2020



Daily Consumptions: - November 2020

Date	Total Consumption		Air Temperature @ Japan Gulch		Weather Conditions	Precipitation @ Sooke Res.: 12:00am to 12:00am			
	(ML) ¹ .		(MIG) ² .	High (°C)		Low (°C)	Rainfall (mm)	Snowfall ³ . (mm)	Total Precip.
01 (Sun)	108.4	<=Max	23.8	11	3	Sunny	0.0	0.0	0.0
02 (Mon)	106.0		23.3	9	3	Cloudy / P. Sunny	0.0	0.0	0.0
03 (Tue)	101.9		22.4	10	6	Cloudy / Rain	41.9	0.0	41.9
04 (Wed)	105.6		23.2	15	9	Cloudy / Rain	28.9	0.0	28.9
05 (Thu)	102.5		22.6	13	6	Cloudy / Showers / P. Sunny	1.8	0.0	1.8
06 (Fri)	104.4		23.0	9	2	Sunny	0.0	0.0	0.0
07 (Sat)	98.7		21.7	7	1	Cloudy / P. Sunny	0.0	0.0	0.0
08 (Sun)	104.3		22.9	6	0	Sunny	0.0	0.0	0.0
09 (Mon)	105.2		23.2	7	0	Cloudy / Showers	6.4	0.0	6.4
10 (Tue)	98.8		21.7	5	1	Cloudy / P. Sunny	0.0	0.0	0.0
11 (Wed)	101.2		22.3	6	1	Cloudy / P. Sunny	0.0	0.0	0.0
12 (Thu)	100.0		22.0	6	4	Cloudy / Rain	33.8	0.0	33.8
13 (Fri)	101.0		22.2	8	4	Cloudy / Rain	18.5	0.0	18.5
14 (Sat)	98.3	<=Min	21.6	6	3	Cloudy / Showers	9.6	0.0	9.6
15 (Sun)	103.6		22.8	9	5	Cloudy / Showers	11.4	0.0	11.4
16 (Mon)									
17 (Tue)									
18 (Wed)									
19 (Thu)									
20 (Fri)									
21 (Sat)									
22 (Sun)									
23 (Mon)									
24 (Tue)									
25 (Wed)									
26 (Thu)									
27 (Fri)									
28 (Sat)									
29 (Sun)									
30 (Mon)									
TOTAL	1539.9 ML		338.78 MIG				152.3	0	152.3
MAX	108.4		23.84	15	9		41.9	0	41.9
AVG	102.7		22.59	8.5	3.2		10.2	0	10.2
MIN	98.3		21.62	5	0		0.0	0	0.0

1. ML = Million Litres

2. MIG = Million Imperial Gallons

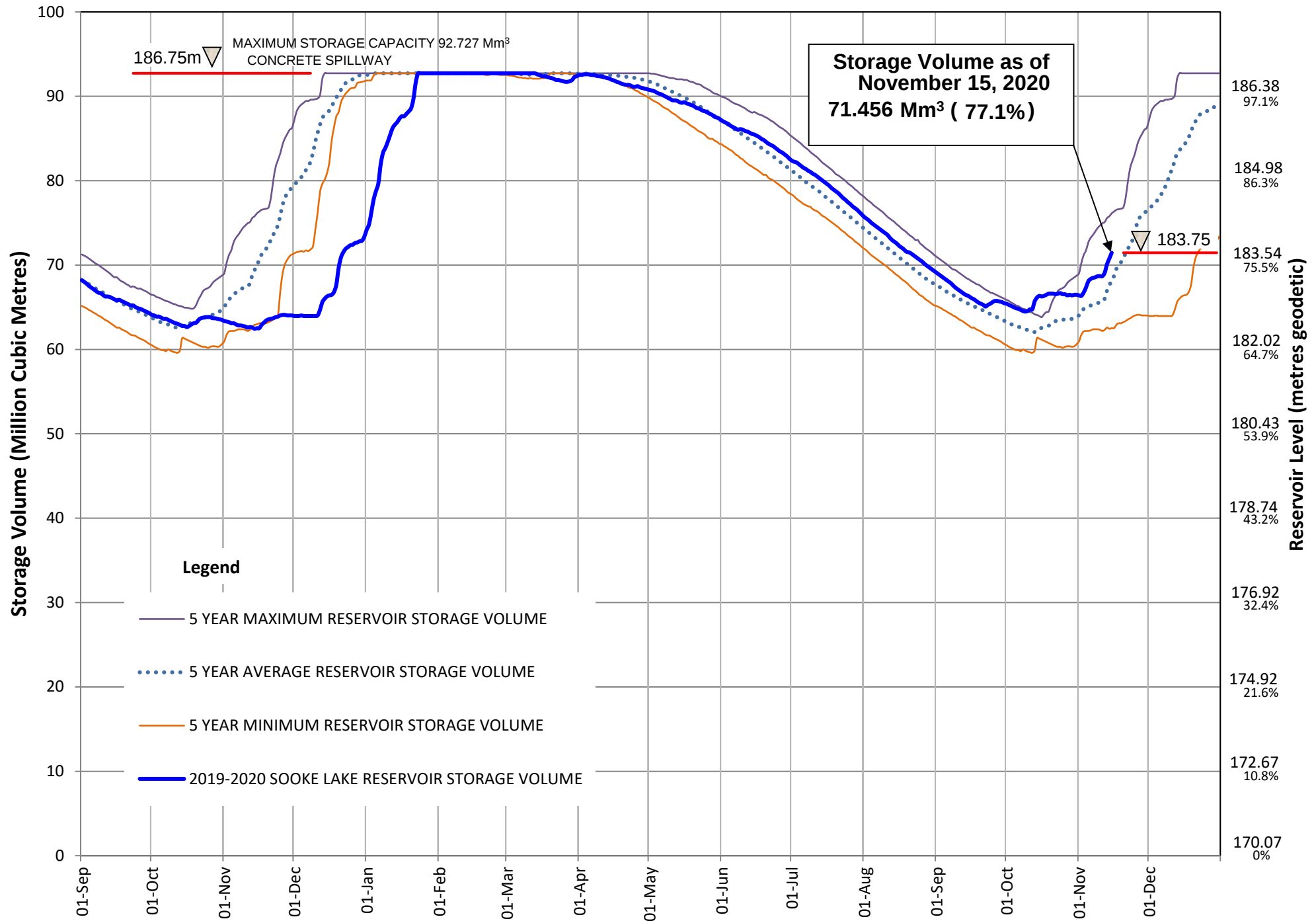
3. 10% of snow depth applied to rainfall figures for snow to water equivalent.

Average Rainfall for November (1914-2019)	260.4 mm
Actual Rainfall: November	152.3 mm
% of Average	58%
Average Rainfall (1914-2019): Sept 01 - Nov 15	355.7 mm
Actual Rainfall (2020): Sept 01 - Nov 15	443.6 mm
% of Average	125%

Number days with precip. 0.2 or more
8

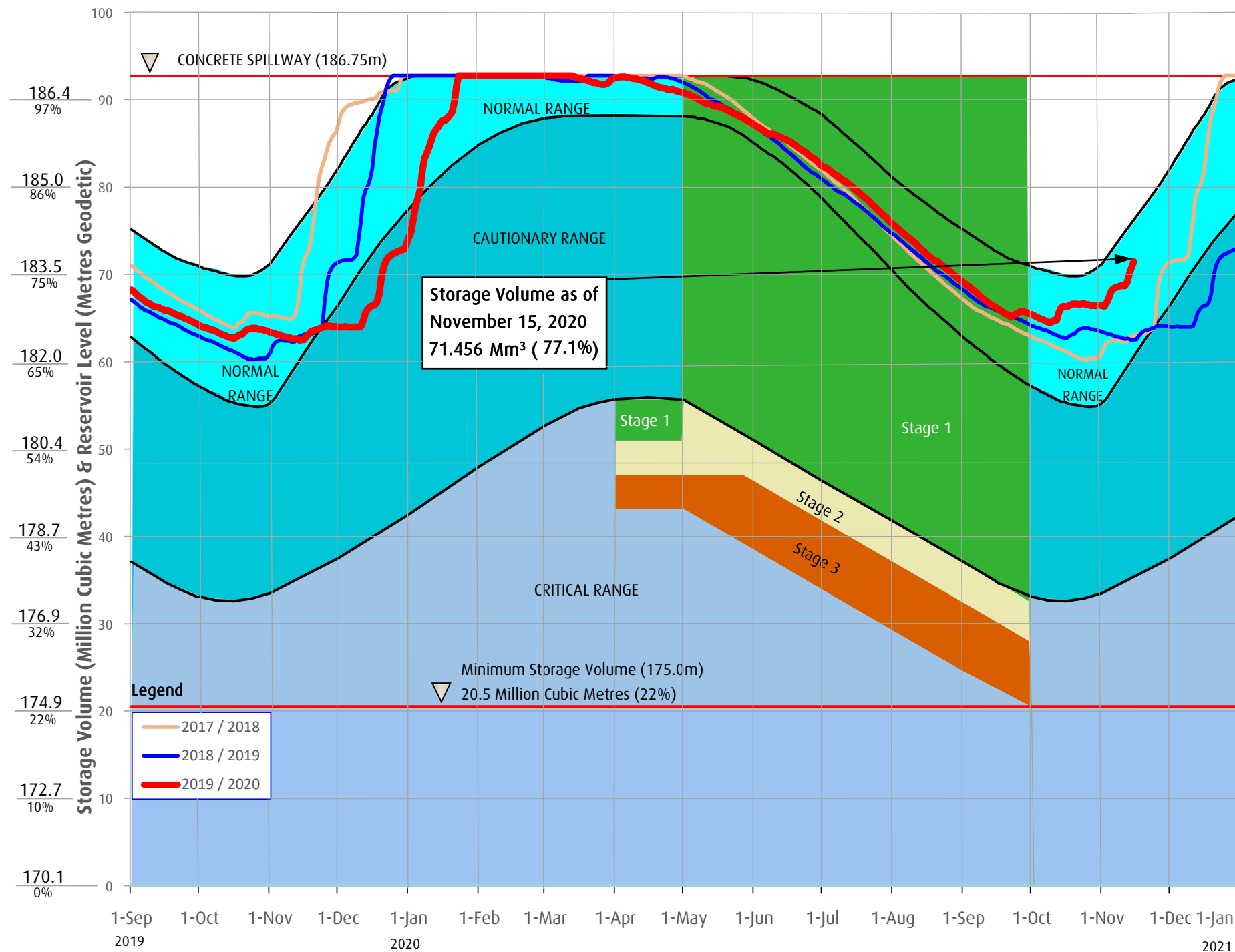
SOOKE LAKE RESERVOIR STORAGE SUMMARY

2019 / 2020



Sooke Lake Reservoir Storage Level

Water Supply Management Plan



FAQs

How are water restriction stages determined?

Several factors are considered when determining water use restriction stages, including,

1. Time of year and typical seasonal water demand trends;
2. Precipitation and temperature conditions and forecasts;
3. Storage levels and storage volumes of water reservoirs (Sooke Lake Reservoir and the Goldstream Reservoirs) and draw down rates;
4. Stream flows and inflows into Sooke Lake Reservoir;
5. Water usage, recent consumption and trends; and customer compliance with restriction;
6. Water supply system performance.

The Regional Water Supply Commission will consider the above factors in making a determination to implement stage 2 or 3 restrictions, under the Water Conservation Bylaw.

At any time of the year and regardless of the water use restriction storage, customers are encouraged to limit discretionary water use in order to maximize the amount of water in the Regional Water Supply System Reservoirs available for nondiscretionary potable water use.

Stage 1 is normally initiated every year from May 1 to September 30 to manage outdoor use during the summer months. During this time, lawn watering is permitted twice a week at different times for even and odd numbered addresses.

Stage 2 is initiated when it is determined that there is an acute water supply shortage. During this time, lawn water is permitted once a week at different times for even and odd numbered addresses.

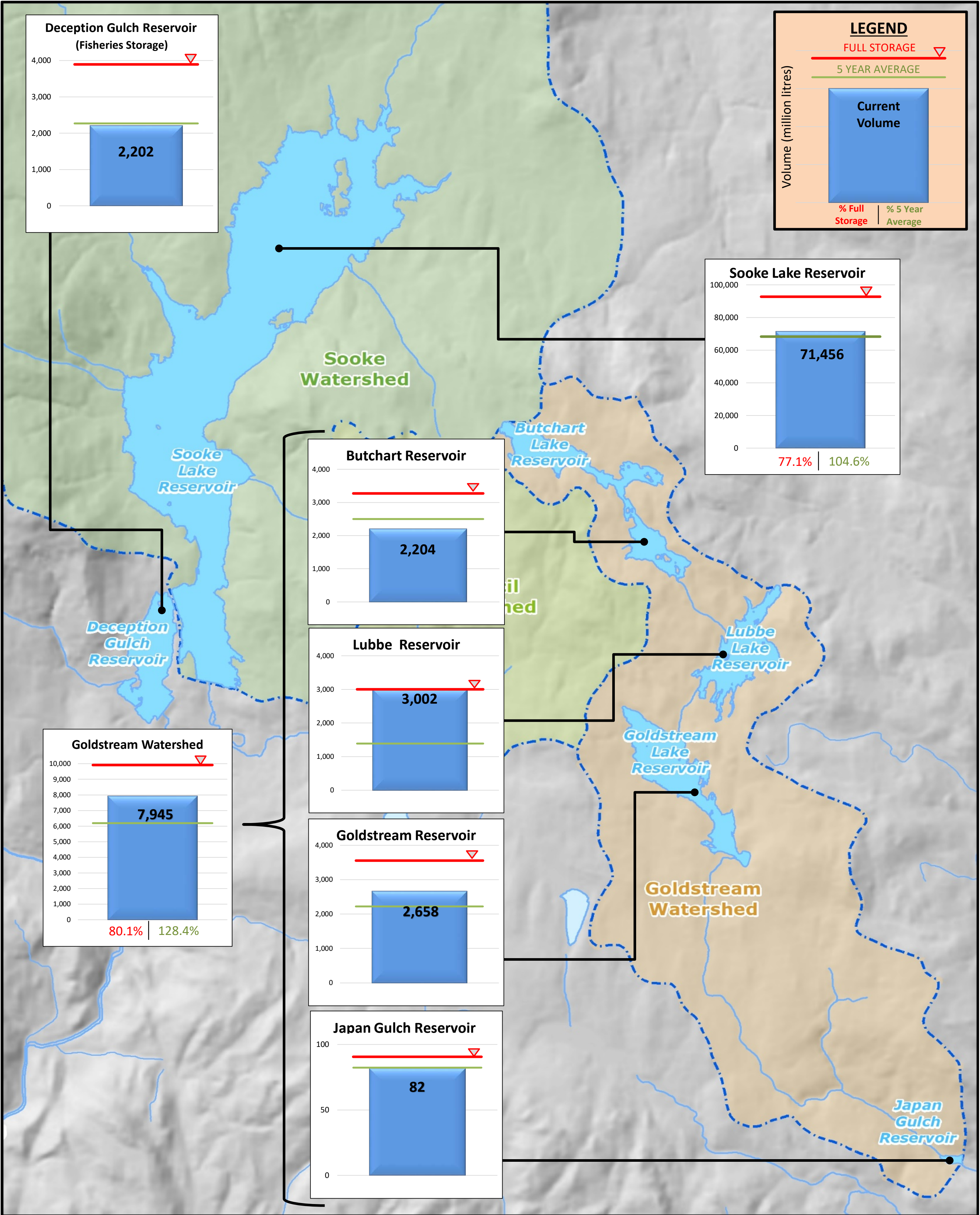
Stage 3 is initiated when it is determined that there is a severe water supply shortage. During this time, lawn watering is not permitted. Other outdoor water use activities are restricted as well.

For more information, visit www.crd.bc.ca/drinkingwater

CRD
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Useable Reservoir Volumes in Storage for November 15, 2020



From: Parker, Clint D FLNR:EX [<mailto:Clint.Parker@gov.bc.ca>]

Sent: Wednesday, September 30, 2020 5:24 PM

To: Denise Dionne <ddionne@crd.bc.ca>

Cc: Vaisius, Dimitri FLNR:EX <Dimitri.Vaisius@gov.bc.ca>; CRD Chair <crdchair@crd.bc.ca>; CRDBoard <crdboard@crd.bc.ca>; Robert Lapham <rlapham@crd.bc.ca>; Ted Robbins <trobbins@crd.bc.ca>; Carolyn Jenkinson <cjenkinson@crd.bc.ca>; Tanya Duthie <tduthie@crd.bc.ca>

Subject: RESPONSE: BC Wildfire Service Support for Fires in the Greater Victoria Water Supply Area

Good afternoon Denise,

On behalf of the Coastal Fire Centre and the BC Wildfire Service, I want to thank you and the members of the CRD Water Supply Commission's and Board for your letter of appreciation related to our response to the recent wildfires within the Sook Lake Reservoir. The Coastal Fire Centre continues to look for opportunities to strengthen our relationships with local government, specifically in ensuring collaborative approach in wildfire prevention, response and recovery across the region. I also want to acknowledge the support that the Coastal Fire Centre has received from the CRD in past wildfire seasons, as well as confirming our commitment continuing to strengthen our relationship with the CRD in the future.

Sincere regards,

Clint



Clint Parker

Fire Centre Manager

Coastal Fire Centre

BC Wildfire Service | Ministry of Forests, Lands, Natural Resource Operations
and Rural Development

Phone: 250 951-4208 | Cell: 250 203-0621

Report Wildfires: 1 800 663-5555 or *5555





Making a difference...together

Integrated Water Services

479 Island Highway
Victoria, BC, V9B 1H7

T: 250.474.9600

F: 250.474.4012

www.crd.bc.ca

September 24, 2020

File: 0360-20 Regional Water Supply Commission

Clint Parker, Fire Centre Manager
BC Wildfire Service
665 Allsbrook Road
Parksville BC V9P 2T3

Dear Mr. Parker:

RE: BC WILDFIRE SERVICE SUPPORT FOR FIRES IN THE GREATER VICTORIA WATER SUPPLY AREA

On behalf of the Capital Regional District (CRD) Regional Water Supply Commission and the CRD Board, we want to express our gratitude and thanks for BC Wildfire Service's prompt and substantial support in combatting the recent wildfires (V61180, 86) in the Greater Victoria Water Supply Area (GVWSA). We appreciate the respect paid to water quality concerns and minimizing the use of chemical fire retardant without unduly reducing response effectiveness.

The protection of the GVWSA and the drinking water quality of Sooke Lake Reservoir is of great importance to the Commission and residents of Greater Victoria; and the ability of the BC Wildfire Service to place high priority on protection of these lands is truly appreciated.

We look forward to hearing from staff about how our organizations can work together even more closely in future in the areas of prevention, detection and fire suppression under the terms of our Wildfire Response and Wildfire Resource Agreements.

With great thanks,

Rebecca Mersereau, CRD Director
Chair, Regional Water Supply Commission

Colin Plant, Chair
Capital Regional District Board

cc: Dimitri Vaisius, Wildfire Officer, South Island Fire Zone, BC Wildfire Service
CRD Board
Robert Lapham, Chief Administrative Officer, CRD
Ted Robbins, General Manager, Integrated Water Services, CRD