



Notice of Meeting and Meeting Agenda Regional Water Supply Commission

Wednesday, February 17, 2021

11:30 AM

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

Members:

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

1. TERRITORIAL ACKNOWLEDGEMENT

2. APPROVAL OF THE AGENDA

3. ADOPTION OF MINUTES

3.1. [21-117](#) Adoption of the Minutes of the January 20, 2021 Meeting

Recommendation: That the minutes of the January 20, 2021 meeting be adopted.

Attachments: [Draft Minutes: January 20, 2021](#)

4. REPORT OF THE CHAIR

5. GENERAL MANAGER'S REPORT

5.1. Water Supply Outlook

5.2. CRD Board Decision: Electoral Area Building Regulation Bylaw – Rain Harvesting Potable Water

6. PRESENTATIONS/DELEGATIONS

In keeping with directives from the Province of BC, this meeting will be held by Live Webcast without the public present.

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 REPORT

8. COMMISSION BUSINESS**8.1. [21-155](#) Demand Management Program Update**

Recommendation: That the Regional Water Supply Commission receive this report for information.

Attachments: [Staff Report: Demand Management Program Update](#)
 [Appendix A: Regional Water Demand Trends](#)
 [Appendix B: Demand Management Program - Key Priorities and Deliverables](#)

8.2. [21-103](#) Water Quality Summary Report for Greater Victoria Drinking Water System - June to November 2020

Recommendation: That the Regional Water Supply Commission receives the Water Quality Summary Report for the Greater Victoria Drinking Water System - June to November 2020 for information.

Attachments: [Staff Report: Water Quality Summary Report - GVDWS - June-Nov 2020](#)
 [Appendix A: Water Quality Summary Report - June to November 2020](#)

8.3. [21-118](#) 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. [21-119](#) Water Watch Report

Recommendation: That the February 8, 2021 Water Watch Report be received for information.

Attachments: [Report: Water Watch Report](#)

9. NEW BUSINESS**10. NOTICE(S) OF MOTION****11. ADJOURNMENT**

Next Meeting: March 17, 2021

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, January 20, 2021

11:30 AM

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

PRESENT:

G. Baird; N. Chambers; C. Graham; J. Loveday; R. Mersereau; T. Morrison;
C. Stock; L. Szpak; N. Taylor; G. Young

BY WEBEX:

Z. de Vries; S. Duncan; K. Harper; M. Hicks; B. Isitt; K. Kahakauwila; G. Logan;
J. Rogers; T. St-Pierre; R. Wade; E. Wood Zhelka

STAFF:

T. Robbins, General Manager, Integrated Water Services; A. Constabel, Senior Manager, Watershed Protection; I. Jesney, Senior Manager, Infrastructure Engineering; G. Gullekson, Senior Financial Advisor; G. Harris, Senior Manager, Environmental Protection; S. Irg, Senior Manager, Water Infrastructure Operations; T. Duthie, Manager, Administrative Services; D. Dionne, Administrative Coordinator; S. Orr (Recorder)

1. TERRITORIAL ACKNOWLEDGEMENT

T. Robbins provided the Territorial Acknowledgement.

2. CALL TO ORDER

T. Robbins called the meeting to order at 11:30 am.

3. ELECTION OF CHAIR

The General Manager called for nominations for the position of Chair of the Regional Water Supply Commission for 2021.

Commissioner Graham nominated Commissioner Szpak, Commissioner Szpak accepted the nomination.

The General Manager called for nominations a second time.

The General Manager called for nominations a third and final time.

Hearing no further nominations, the General Manager declared Commissioner Szpak Chair of the Regional Water Supply Commission for 2021 by acclamation.

4. ELECTION OF VICE CHAIR

Chair Szpak called for nominations for the position of Vice Chair of the Regional Water Supply Commission for 2021.

Commissioner Mersereau nominated Commissioner Baird, Commissioner Baird accepted the nomination.

Chair Szpak called for nominations a second time.

Chair Szpak called for nominations a third and final time.

Hearing no further nominations, Chair Szpak declared Commissioner Baird Vice Chair of the Regional Water Supply Commission for 2021 by acclamation.

5. APPROVAL OF THE AGENDA

MOVED by Commissioner Morrison, and **SECONDED** by Commissioner Graham,
That the Regional Water Supply Commission agenda be approved.
CARRIED

6. APPROVAL OF RESOLUTION FOR 2021

6.1 [20-809](#) Approval of Resolution For 2021

That this resolution applies to the Regional Water Supply Commission for the meetings being held between January 1, 2021 and December 31, 2021.

1. That the attendance of the public at the place of the meeting cannot be accommodated in accordance with the applicable requirements or recommendations under the *Public Health Act*, despite the best efforts of the Regional Water Supply Commission, because:
 - a. The available meeting facilities cannot accommodate more than (38) people in person, including members of the Regional Water Supply Commission and staff, and
 - b. There are no other facilities presently available that will allow physical attendance of the Regional Water Supply Commission and the public in sufficient numbers; and
2. That the Regional Water Supply Commission is ensuring openness, transparency, accessibility and accountability in respect of the open meeting by the following means:
 - a. By allowing the public to hear or participate via teleconference or electronic meeting software,
 - b. By providing notice of the meeting in newspaper or local notice Board, including the methods for providing written or electronic submissions,
 - c. By making the meeting agenda, as well as the other relevant documents, available on the CRD website, and directing interested persons to the website by means of the notices provided in respect of the meeting,
 - d. By strongly encouraging the provision of, and subsequently receiving and distributing to members, written correspondence from the public in advance of the meeting, and
 - e. By making the minutes of the meeting available on the CRD website following the meeting.

MOVED by Commissioner Graham, and **SECONDED** by Commissioner St.-Pierre,

That the Regional Water Supply Commission adopt the resolution as presented.

CARRIED

7. ADOPTION OF MINUTES**7.1** [20-808](#) Adoption of November 25, 2020 Minutes

Attachments: [Draft Minutes November 25, 2020](#)

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

That the minutes of the November 25, 2020 meeting be adopted.

CARRIED

8. REPORT OF THE CHAIR

The Chair thanked the Commission for their support and she stated she looks forward to working together.

9. GENERAL MANAGER'S REPORT

9.1 Water Supply Update

T. Robbins stated the Sooke Lake Reservoir was at full storage capacity on December 26, 2020. He stated that a water advisory was issued on December 29, 2020 due to a temporary chlorine taste and odour as a result of maintenance activities on the ammonia system.

10. PRESENTATIONS/DELEGATIONS

There were no Presentations or Delegations.

11. WATER ADVISORY COMMITTEE REPORT

There was no report.

12. APPOINTMENT OF COMMISSION REPRESENTATIVE TO THE WATER ADVISORY COMMITTEE FOR 2021

- 12.1 [21-088](#) Regional Water Supply Commission Representative on the Water Advisory Committee
- MOVED** by Commissioner Morrison, and **SECONDED** by Commissioner Mersereau ,
That the Vice Chair of the Regional Water Supply Commission represent the Commission on the Water Advisory Committee for 2021.

CARRIED

Commissioner Mersereau thanked Vice-Chair Baird for taking on the role on the Water Advisory Committee.

13. COMMISSION BUSINESS

13.1 [20-804](#) 2021 Greater Victoria Water Supply Area Mining Access Requests

Attachments: [Staff Report: 2021 GVWSA Mining Access Requests](#)
[Appendix A: Summary of 2021 Mining Access & Special Use Applications](#)
[Appendix B: Map of 2021 Mining Tenures Requesting Access](#)
[Appendix C: Template Access Agreement](#)

Note: *Appendix D of the staff report is on file at Integrated Water Services and is available upon request - file too large to post.*

A. Constabel introduced the report and stated that Commission approval is required for special use and access agreements for the Greater Victoria Water Supply Area.

Staff answered questions from the Commission regarding:

- Existing tenures
- Terms and conditions of access agreements
- Claims in the Leech Water Supply Area

The Commission requested that staff report back on the process for terminating existing tenures within the Leech Water Supply Area.

MOVED by Commissioner Baird, and **SECONDED** by Commissioner Stock,
That the Regional Water Supply Commission authorize Greater Victoria Water Supply Area access and special use to the mining tenure holders and their agents (where agency is confirmed) and workers (that hold valid free mining certificates) that meet Capital Regional District insurance requirements, as listed in Tables 1 and 2 of Appendix A, subject to the conditions of their Access Agreement, for the valid mining tenures they hold..

CARRIED

13.2 [20-806](#) Regional Water Supply Service 2021-2025 Capital Budget Amendment

Attachments: [Staff Report: RWS Service 2021-2025 Capital Budget Amendment](#)
[Appendix A: Project Segment Drawings](#)

T. Robbins introduced the report and stated Project 21-05 No. 4 Transmission Main was not selected for the federal grant Disaster Mitigation and Adaptation Fund program and the 2021-2025 capital plan and budget requires an amendment.

Staff answered questions from the Commission regarding:

- Disaster Mitigation and Adaptation Fund
- Project scope
- Future grant application
- Impacts to the water supply and future projects
- First Nation's relationships

MOVED by Commissioner Chambers, and **SECONDED** by Commissioner Morrison,
The Regional Water Supply Commission recommends to the Capital Regional District Board:
That the provisionally approved Regional Water Supply Service 2021-2025 capital plan and budget be amended in accordance with the revised plan and budget for Project No. 21-05 as presented.

CARRIED

13.3 [20-807](#) Water Watch Report

Attachments: [Report: Water Watch Report](#)

MOVED by Commissioner Mersereau, and **SECONDED** by Commissioner Stock,
That the January 11, 2021 Water Watch Report be received for information.

CARRIED

14. NEW BUSINESS

There was no new business.

15. MOTION FOR WHICH NOTICE HAS BEEN GIVEN

15.1 [21-060](#)**Climate Change Impacts on CRD Water Operations (Commissioner Taylor)**

Commissioner Taylor introduced the motion.

Staff answered questions from the Commission regarding:

- Water conservation
- Report frequency and framework
- Strategic plan
- Climate change data
- Population growth
- Water quality
- Water demand

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

That the Regional Water Supply Commission request staff to bring forward a report outlining the current impacts and potential future impacts that climate change is having on CRD Water operations and the CRD's ability to provide water to the region.

CARRIED

16. MOTION TO CLOSE THE MEETING**16.1** [20-805](#)**Motion to Close the Meeting**

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

That the meeting be closed in accordance with the Community Charter, Part 4, Division 3, 90(1)(a) personal information about an identifiable individual who holds or is being considered for a position as an officer, employee or agent of the municipality or another position appointed by the municipality.

CARRIED

At 12:52 pm the Commission moved into closed session.

Commissioner Graham left the meeting.

17. RISE AND REPORT

The Commission rose from its closed session at 1:08 pm without report.

18. ADJOURNMENT

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

That the meeting be adjourned at 1:08 pm.

CARRIED

CHAIR

SECRETARY

DRAFT

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, FEBRUARY 17, 2021**

SUBJECT Demand Management Program Update

ISSUE SUMMARY

To provide an update to the Demand Management Program.

BACKGROUND

The goal of the program is to define, understand and apply the regional demand for drinking water in support of the overall service. Staff provide data and research that informs strategic, financial, capital, operational and water conservation components of the regional drinking water service. The program aims to understand the "who, when and where" of drinking water use, as well as how much is or will be used (daily, seasonally, annually and long-term).

The Sooke Reservoir currently has ~ 92,800 million litres available for treatment due to the depth of the intake and distribution. The reservoir holds more volume but it is currently inaccessible in the north basin. The system can also access ~8,200 million litres in the Goldstream Reservoir system under emergency situations. The region consumes on average 52% of the available water in Sooke Reservoir each year, but the reservoir draw-down is typically only about 31% due to ongoing recharge from precipitation and inflow. The maximum draw-down in the last 10 years was 36%. The reservoir also typically spills excess water to the Sooke River during the winter months (i.e., December-April).

In 2019, the population serviced by the Greater Victoria Drinking Water System was approximately 387,400 and that population is expected to grow at a rate of 1.25% annually. That resulted in the sale of 48,200 million litres of water (Appendix A, Figure 1) across the service area. Although total water demand has remained fairly stable over the last 10 years, steady population increase, per capita consumption trends, unpredictable weather and long-term climate change increase the uncertainty in future predictions. The program seeks to understand the other factors also influencing demand projections (e.g., economic growth and residential housing stock/fixture replacement, tourism impacts, agricultural demand, consumer habits). Climate change will continue to influence demand upward and add to uncertainty with both short and long-term implications.

A conservative forecast of future demands by municipality shows that by 2050, regional demand will be almost 61,000 million litres per year, a 23% increase from 2019. The forecast indicates that, by 2050, the region will require 66% of the available water in Sooke Reservoir on an annual basis.

Based on land use type (Appendix A, Figure 2), current residential demand accounts for 65% of total regional water use, while industrial/commercial/institutional (ICI) demand accounts for 23%, agricultural demand is 3% and non-revenue water (i.e., losses and leaks) comprises approximately 9% of total demand in the region.

The total per capita demand across the region in 2019 was ~340 litres per capita per day (lcpd), which compares favourably to a jurisdiction survey completed last year for similar communities in the Pacific Northwest. Residential-only per capita demand is ~220 lcpd, compared to an optimal

high-efficiency home of ~140 lcpd. The average residential use is closer to ~190 lcpd across North America. Acknowledging the variability in the data, the trend in regional total per capita consumption indicates a ~17% decrease relative to 10 years ago (Appendix A, Figure 3). The declining trend in total per capita demand is likely attributed to new housing construction with efficient technology, but also from the ongoing replacement of low-efficiency appliances and high-flow fixtures in the existing residential housing stock. Greater awareness of water conservation over the past decade is also driving changes in behaviour related to water use.

Municipal retail data shows demand patterns for different ICI sectors. The five consistently highest demand ICI sectors in 2019 (% of total annual demand) were: retail/general sales (7%), schools and research facilities (4%), hotels (2.5%), parks (1.6%) and recreation centres/hall/arenas (1.5%).

IMPLICATIONS

Alignment with Existing Plans & Strategies

The forecasted regional demand informs the strategic planning process related to potential major supply infrastructure upgrades, the need for reliance on the Goldstream system and/or the need to advance more aggressive water conservation initiatives. Demand information (Appendix A, Figure 4) also informs and supports the negotiations regarding the CRD's service agreements with bulk water purchasers. For example, bulk water purchasers (i.e., municipal purveyors) need to understand how long their current supply can meet projected demand (Appendix A, Figure 5). Staff will be refining these forecasts and evaluating hydraulic capacity in the system to inform bulk water customers about any future constraints or concerns. Finally, demand management informs emergency planning efforts related to emergency response and system redundancy and vulnerability.

Demand projections inform the budget forecasts because revenue is based on water sales, which are driven by annual demand and longer-term demand trends. The development of a long-range forecasting tool is a key deliverable for the 2021 work plan, which will assist in reducing the uncertainty in the long-range budget demand forecasts. Financial planning intersects with strategic and capital planning, where adjustments in the water conservation strategy based on demand projections can also assist in deferring costly capital investments.

Service Delivery Implications

Daily demand curves (e.g., morning and evening peaks) across seasons inform the ability to treat and deliver safe potable water. Combined with water quality data, the results inform treatment requirements in real time, as well as flushing programs, reservoir maintenance and other operational projects and tasks over the course of each year.

Social Implications

Given the sufficient spread between current demand and supply, recent water conservation efforts are focused on education and awareness tactics rather than more severe restrictions and bylaw enforcement (Appendix A, Figure 6). The CRD is authorized to impose more severe restrictions, if necessary, but is using education and incentives at this time, along with the annual Stage 1 water restrictions that promote reasonable outdoor water use during the drier summer months.

For the residential sector, staff will focus on messages and campaigns around detecting household leaks, and reduced shower times (“Strive For Five”) for indoor use, and promotion of reduced lawn/garden watering (“Go Golden”), native plantings, and proper irrigation maintenance for outdoor use (Appendix A, Figure 6). Analysis of the municipal retail data informs the conservation and outreach programs by identifying high water users and key sectors or businesses for targeted outreach. Efforts for the ICI sector in 2021 will focus on promoting and providing water use assessments for large water users, promoting water conservation and energy cost savings through building owners, developing a landscape water use calculator, and promotion of a water aerator exchange program. Short write-ups for each initiative are found in Appendix B.

Environmental & Climate Implications

The CRD has developed region-specific climate projections research that indicate an increased probability of warmer temperatures, longer, drier summers and shorter, wetter, and likely more intense winters. This information was gathered to inform all relevant services provided by the regional and local governments. Together with broader climate research, staff use this information to inform the various components of the drinking water service (e.g., fire management, supply management, infrastructure design and demand management).

CONCLUSION

Research and data analysis show that regional demand has decreased by 17% in the last decade, but future projections indicate a modest, increasing trend over the coming decades. Higher demand from specific sectors, regional population growth and municipal demand patterns will exert varying pressures on the regional drinking water system in the future. Long-range forecasting and continued capital and strategic planning support from the demand management program will inform the CRD and municipalities’ planning needs to ensure a secure future water supply for residents. Ongoing studies and research will enhance our understanding of demand patterns, infrastructure needs, water quality impacts, improve the effectiveness of conservation programs, and ultimately ensure a long-term sustainable and affordable drinking water supply.

RECOMMENDATION

That the Regional Water Supply Commission receive this report 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
Concurrence:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services

ATTACHMENT

Appendix A: Regional Water Demand Trends

Appendix B: Demand Management Program – Key Priorities and Deliverables

REGIONAL WATER DEMAND TRENDS

February 2021

Figure 1. Total Regional Supply and Demand

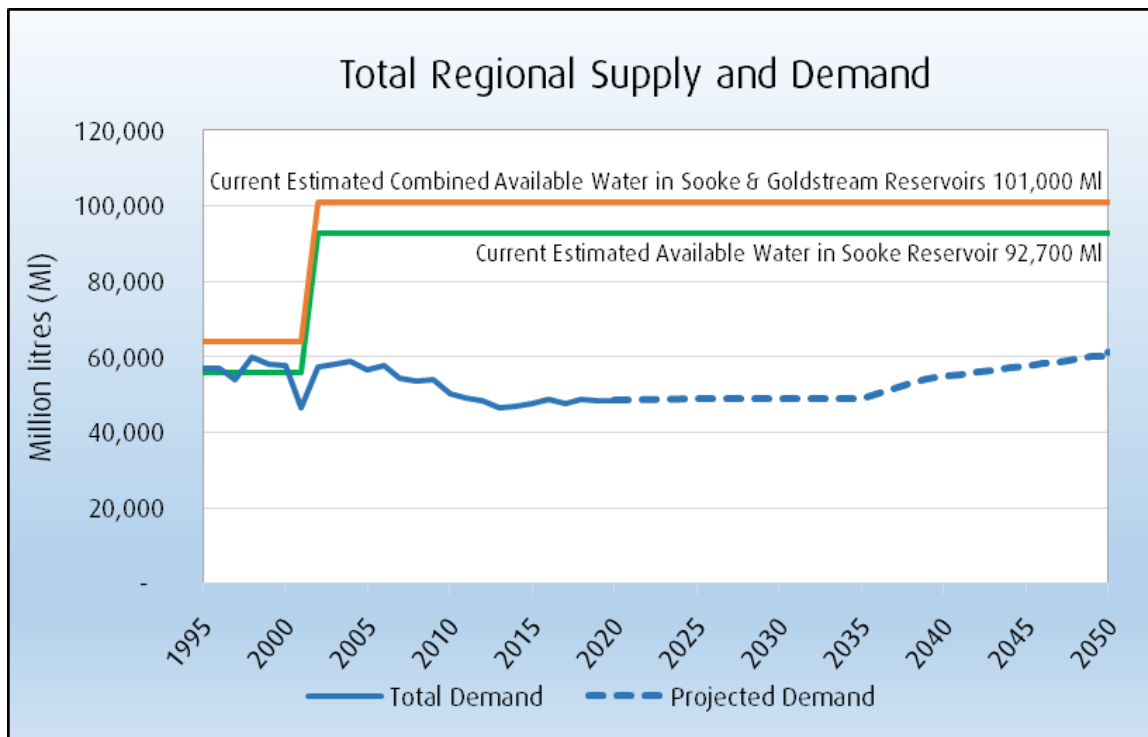


Figure 2. Water Use in the CRD

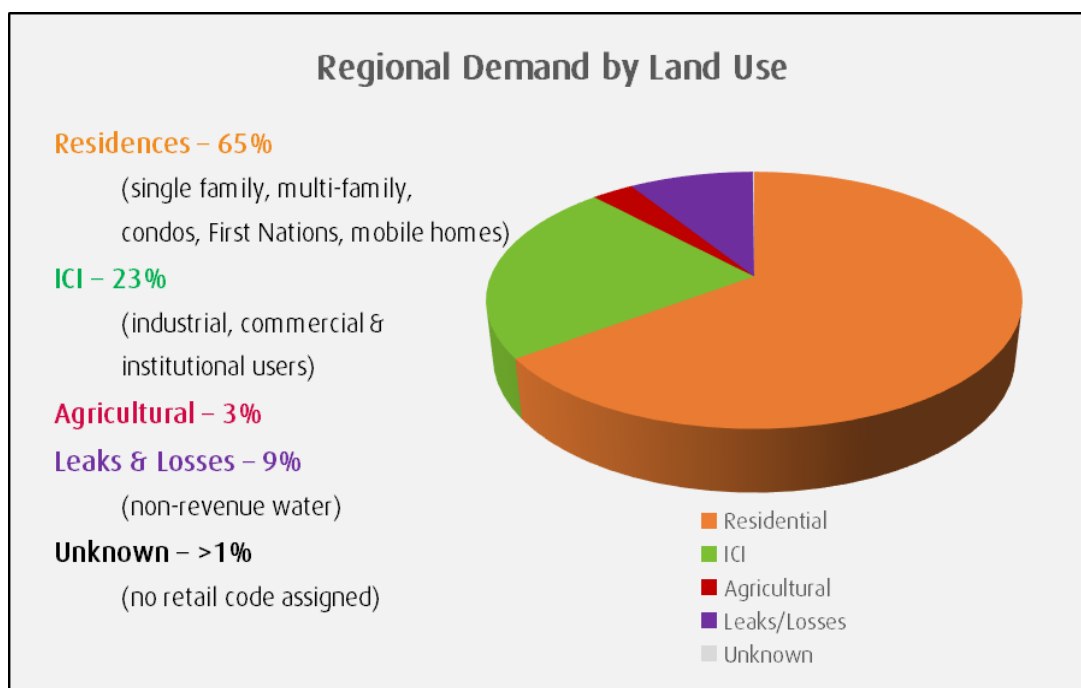


Figure 3. Regional Total Per Capita Trend and Population Growth

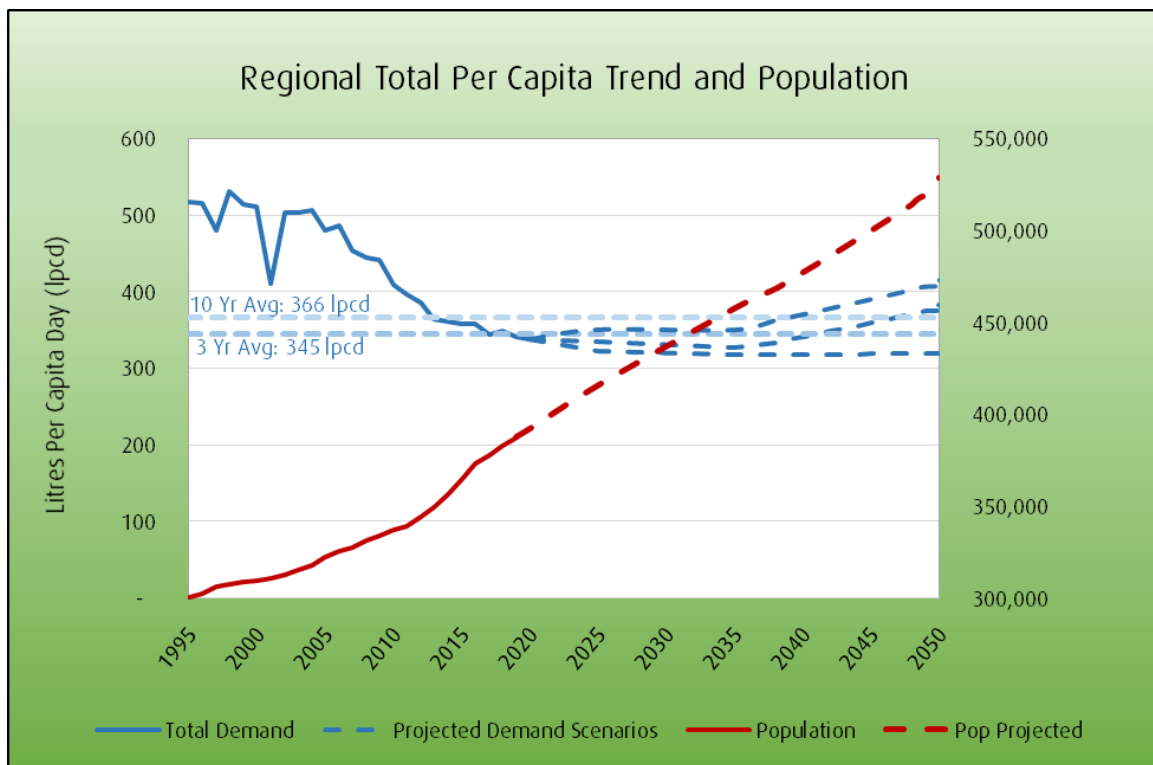


Figure 4. Total Demand by Municipality

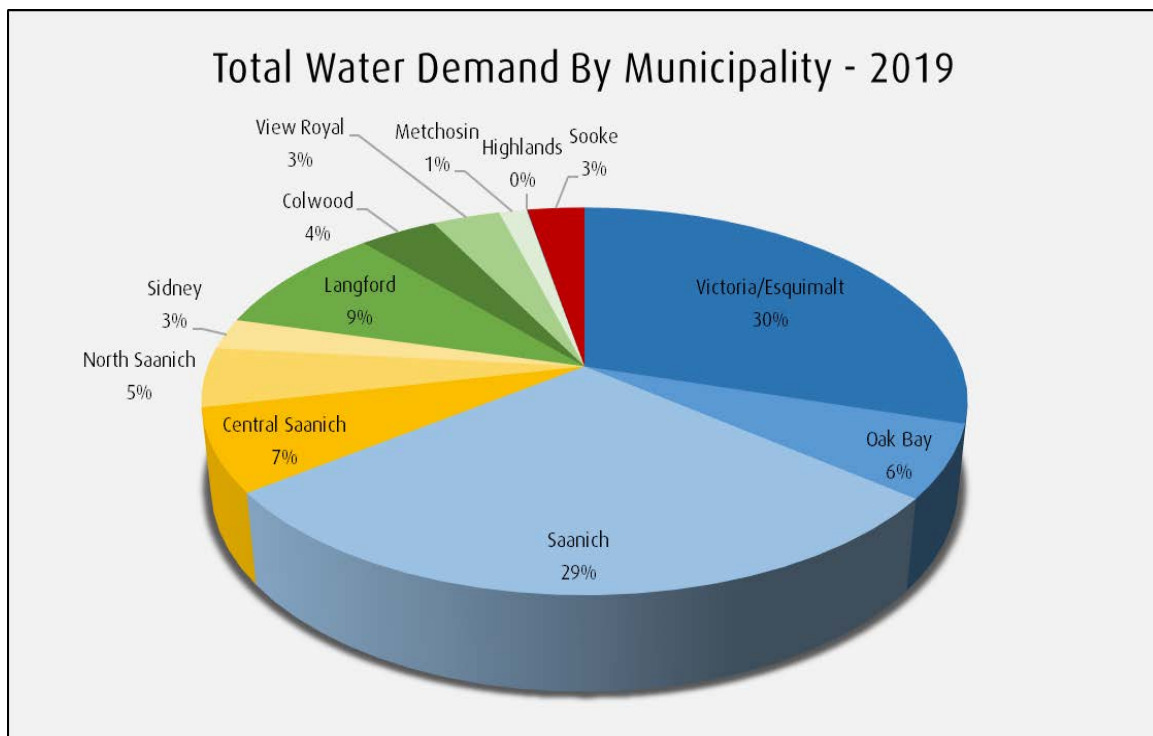


Figure 5. Projected Per Capita Demand by Municipality

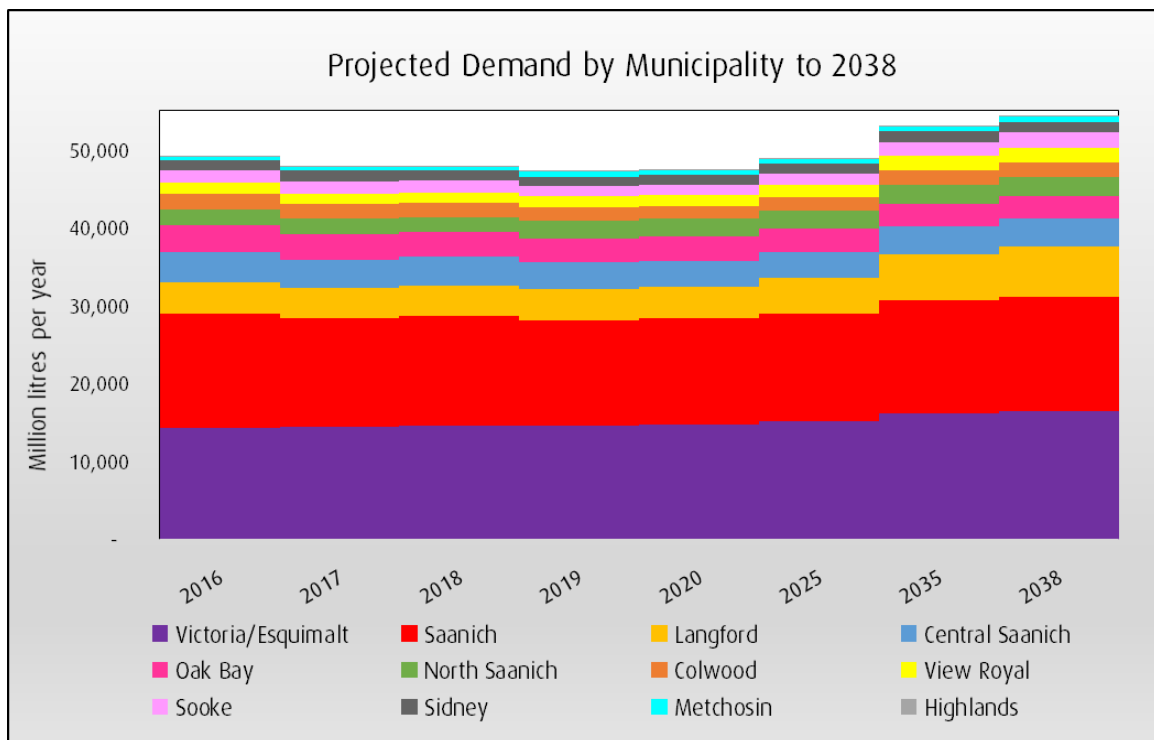


Figure 6. Indoor and Outdoor Residential Water Conservation Campaigns

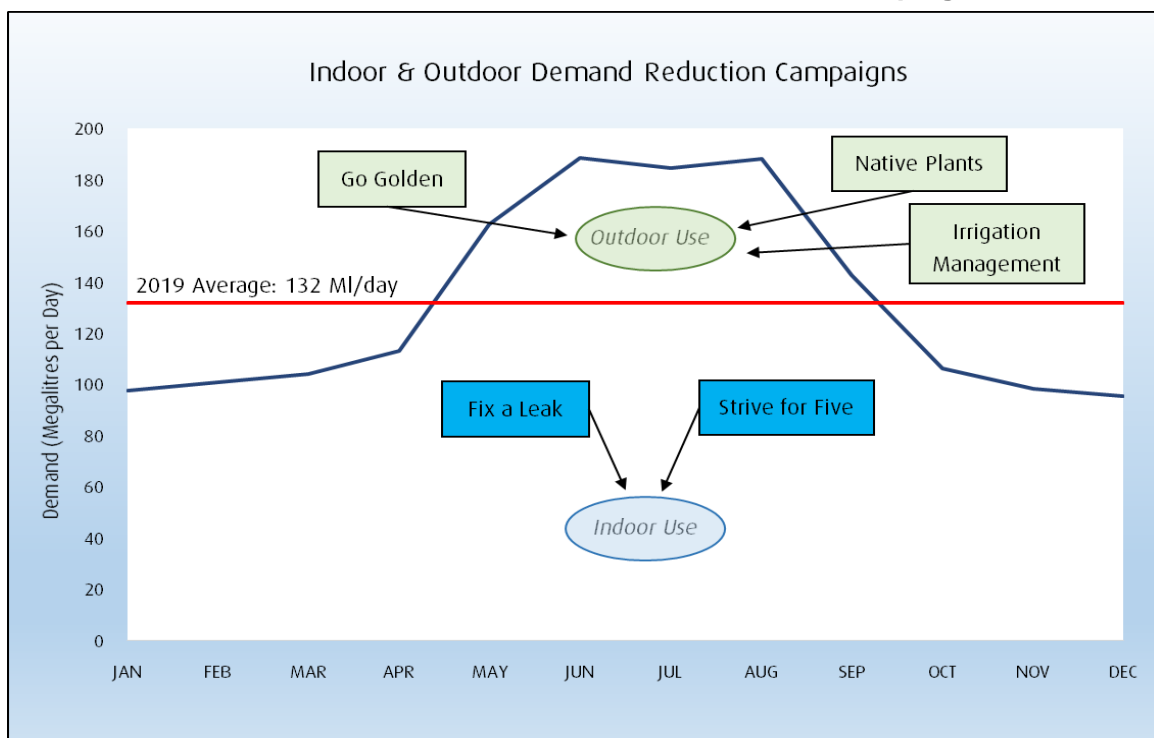


Figure 7. Annual Water Demand Profile

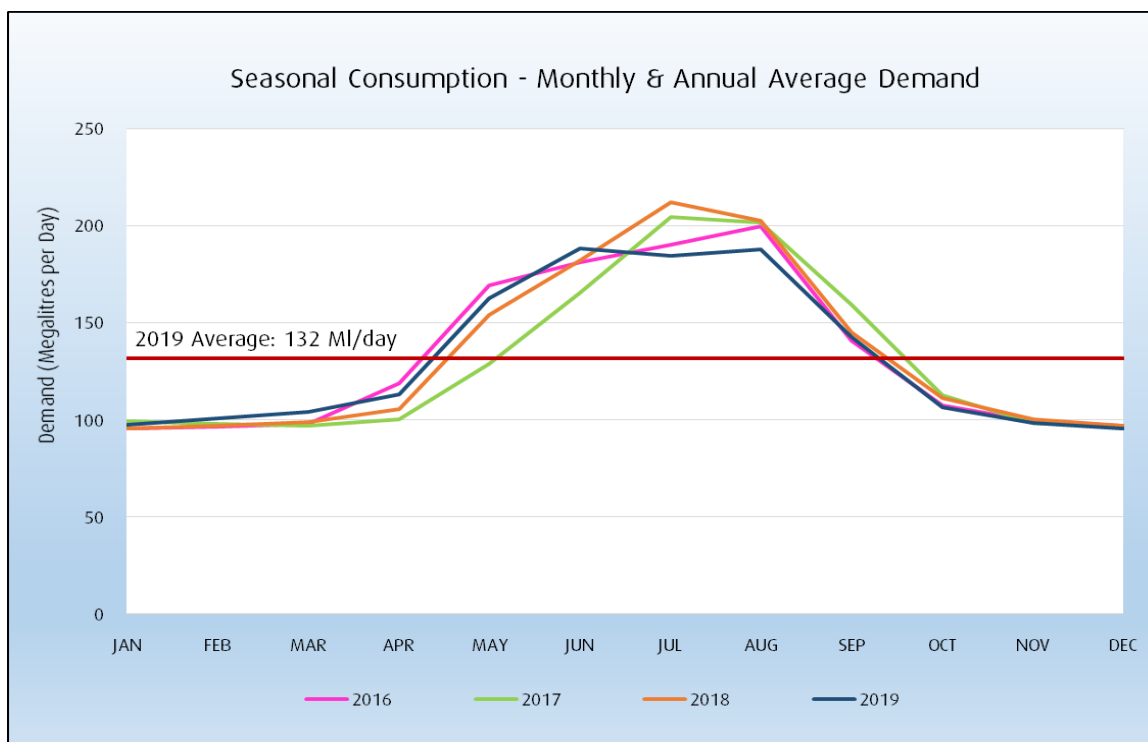
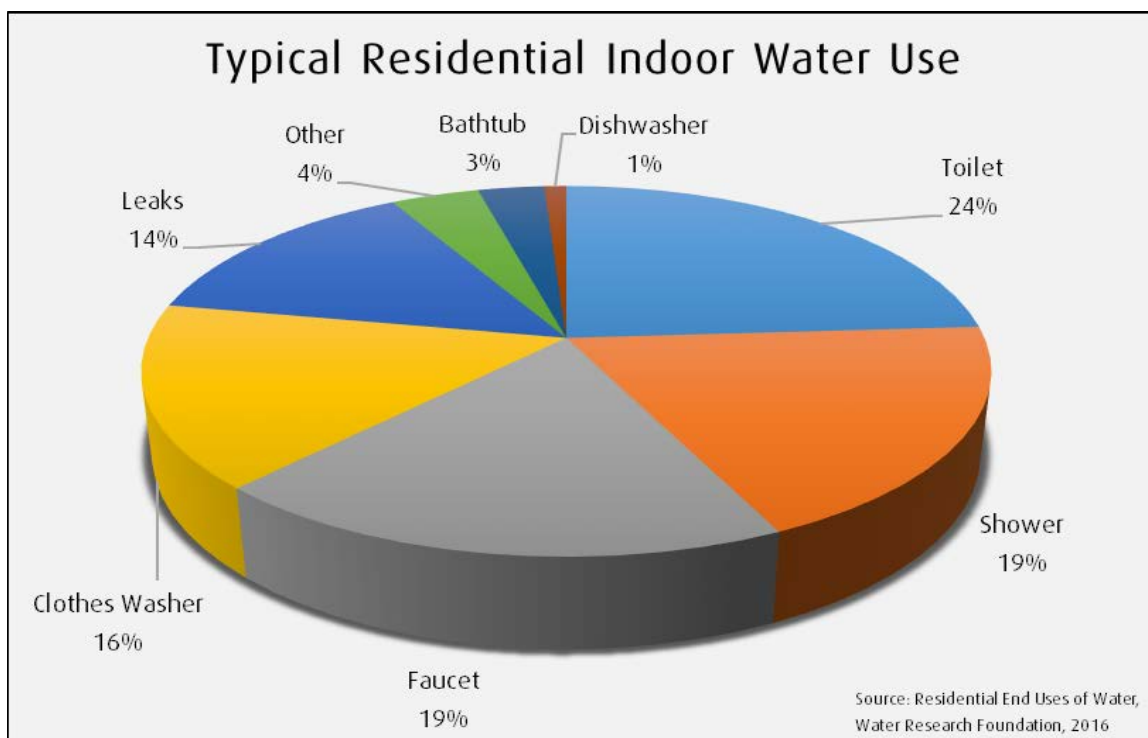


Figure 8. Indoor Residential Use



DEMAND MANAGEMENT PROGRAM KEY PRIORITIES AND DELIVERABLES

February 2021

RESEARCH AND PLANNING

Long-Range Forecasting Tool

A long-range water demand forecasting tool is being developed by a consultant that will enable staff to forecast current and future water demands, develop a Demand Management Plan, support the data needs from Capital Regional District (CRD) Planning and Protective Services, and inform Integrated Water Services so that they can plan for infrastructure upgrades and capital projects. Long-range water demand forecasting is critical for understanding and anticipating the water needs for municipalities and the region as a whole. The long-range forecasting tool will encompass demands from the Greater Victoria Drinking Water System service areas.

Seasonal Demand Analysis

Seasonal demands will be studied to gain a better understanding of what elements drive seasonal demand and to what degree. The evaluation will look at the effects on demand, including changes to per capita demand, from the influx of tourism, agricultural demands and the impact of municipal and greenspace irrigation. The results of the study will inform targeted outreach and education initiatives to reduce over-all water use in the region.

Agricultural Trend Analysis

Agricultural water use trends will be studied to understand how agricultural demands are expected to change over time. Drivers of change to agricultural demands include climate change (longer/drier summers and shorter/wetter winters), population growth, types of crops, irrigation efficiencies and the amount of land farmed. The CRD is committed to supporting local food production so the impacts of future demands from agricultural uses are an important aspect for planning. The study will also highlight areas where water conservation can be achieved in the agricultural sector.

Local Government Supply and Demand Analysis

The available surplus hydraulic capacities of the CRD and municipal systems are expected to decline over time with increasing demands from regional growth and the limitations of existing transmission/distribution infrastructure (pipe size, flow rates) and the absence of balancing storage reservoirs in some areas. Staff will evaluate future demands against hydraulic capacity in the region to inform CRD Integrated Water Services and the municipal water customers about future constraints or concerns. Understanding constraints to future capacity allows water purveyors to plan and budget for necessary upgrades to meet future demands.

RESIDENTIAL WATER CONSERVATION

Go Golden

Summer water use almost doubles compared to winter water use, primarily due to outdoor lawn/garden watering when there is little to no rainfall to replenish the Sooke Lake Reservoir. The non-essential watering of residential lawns account for a large proportion of the outdoor watering. By letting lawns go golden, residents will significantly reduce their summer water use with no additional effort.

Strive for Five

The primary goal of this campaign is to reduce shower times to five minutes for the 18 to 34 year-old demographic. Showers represent the second-largest residential indoor water use with more room for behavioural change compared to the highest indoor water use of toilets, which relies more on appliance changes for greater water savings. A digital campaign and contest will target this audience through popular social media channels.

Water Videos

In keeping with the corporate direction to move outreach online, a series of water videos will be developed to reach a larger audience compared to many in-person outreach programs, such as workshops. This will allow relevant information to be available quickly and easily when residents are engaged in a topic. The water videos will cover three different topics, including short outdoor water use tips, irrigation system best practices, and the value of water and benefits of water conservation.

Irrigation Management

Summer water use almost doubles, primarily due to outdoor watering, when there is little to no rainfall to replenish the reservoir. For residents who choose to water their lawn and gardens, it is essential to use that water efficiently; however, many do not know how much water is required. This campaign promotes irrigation best practices to reduce water waste and promote healthier plants, as well as native plants that do not require additional watering once established. Online educational resources will be developed and used, such as best practices videos and a Landscape Water Calculator.

Fix a Leak

Undetected water leaks account for up to 14% of residential indoor water use. This excess demand can be prevented by regular leak checks by homeowners. The campaign will promote proactive leak detection habits by increasing awareness of undetected leaks and educate on leak detection best practices.

Industrial/Commercial/Institutional (ICI) Water Conservation

Water Use Assessments

High water users in the retail sector were identified by a consultant report finalized in 2020. Those users, primarily grocery stores, will be approached to participate in voluntary water and energy use assessments (also known as audits). Building off of the integrated initiative between the ICI Demand Management Program and the Climate Action Program completed in 2019 in the hotel sector, the assessments demonstrate the business case for conserving water to promote the adoption of water efficient fixtures and practices and provide greenhouse gas emission reduction planning.

Targeted Building Owner Outreach

Property managers, building owners and chambers of commerce have been identified as holding significant sway over water efficiency. Since the majority of smaller businesses rent and share a water bill based on square footage rather than usage, they are not motivated by the business case for water conservation. Property managers and building owners, however, determine the terms of the rental agreement and are poised to find considerable cost savings from adopting our program's recommendations. An outreach and education plan will be formulated to determine the best way to work with these key industry groups.

Landscape Water Calculator

The Partnership for Water Sustainability in BC has created a map-based Landscape Water Calculator for the Province, which uses local soils and climate data to calculate a water budget for a given property. Customization of the calculator for our region will allow users to determine the most efficient landscape design and encourages the use of native and drought resistant plants.

Aerator Replacement Program

Increased handwashing due to COVID-19 sanitation protocols can also mean an increase in water use and the associated costs for businesses and institutions during an already challenging time. CRD staff are going to any commercial facility that uses water supplied by the CRD and replacing any inefficient hand sink faucet aerators for free. For example, a restaurant that operates six days a week with five full-time staff who wash their hands once per hour could save approximately 60,000 litres and \$560 annually.

Once-Through Cooling (OTC) videos

In keeping with the direction to move from a regulatory to an educational approach to discouraging the use of OTC cooled equipment, two videos will be developed to help building and business owners identify and replace this heavy water use equipment.

REPORT TO REGIONAL WATER SUPPLY COMMISSION MEETING OF WEDNESDAY, FEBRUARY 17, 2021

SUBJECT **Water Quality Summary Report for Greater Victoria Drinking Water System – June to November 2020**

ISSUE SUMMARY

Staff provide regular updates on the monitoring results for water quality conditions observed in the Greater Victoria Drinking Water System in between annual reporting to the regulator.

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 summer/fall period from June to November 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 indicate 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 and will be completed once the new hypochlorite disinfection plant is in service again.

Unexpected events, such as the loss of the intake screen due to mechanical failure and two small wildfires in the Sooke Lake watershed, did not have any measurable impact on the water quality. An algal event in Sooke Lake Reservoir between May and June resulted in a Greater Victoria wide public notification for potential unpleasant taste and odour in the drinking water.

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 summer and fall 2020 indicate good water quality overall, and all parameters indicate stable general conditions.

RECOMMENDATION

That the Regional Water Supply Commission receives the Water Quality Summary Report for the Greater Victoria Drinking Water System – June to November 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 – June to November 2020

WATER QUALITY SUMMARY REPORT FOR THE GREATER VICTORIA DRINKING WATER SYSTEM JUNE TO NOVEMBER 2020

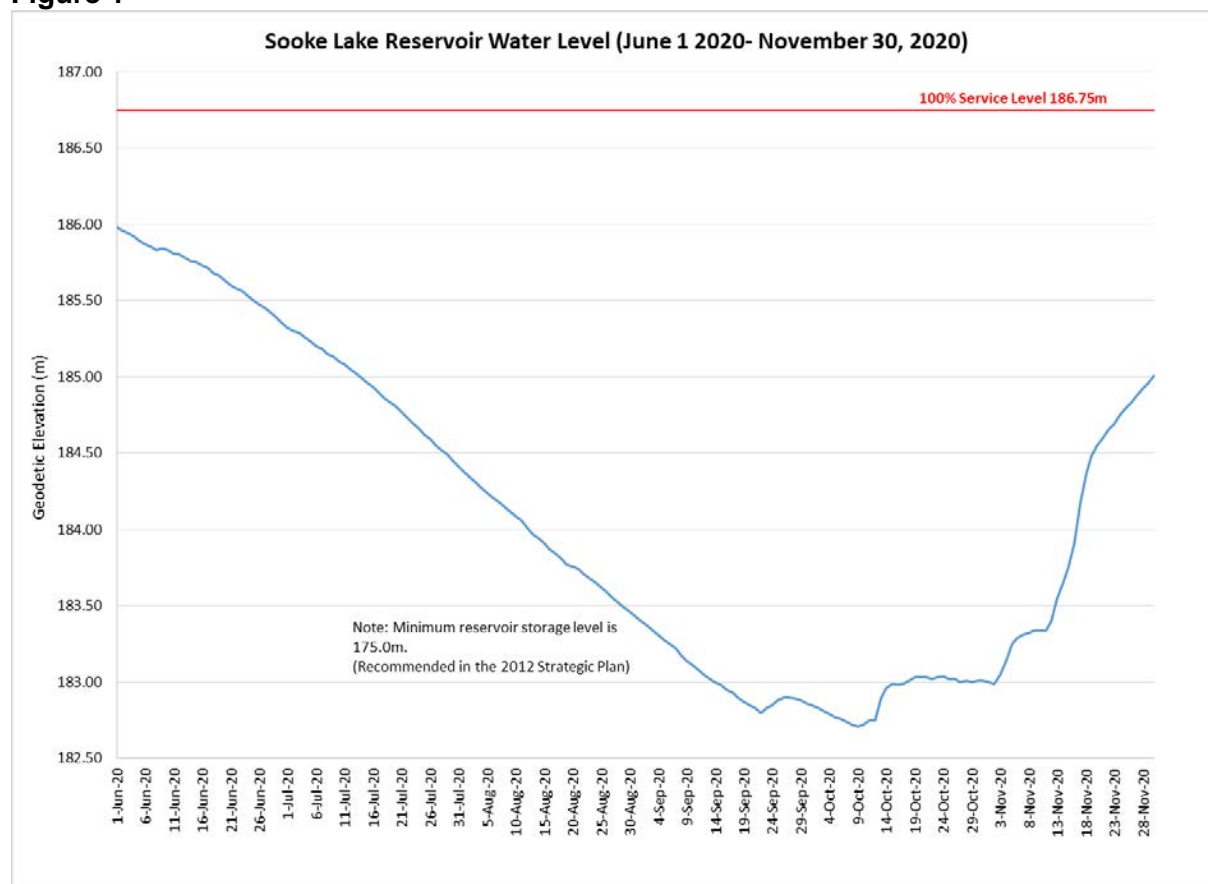
February 2021

SOURCE WATER – SOOKE LAKE RESERVOIR

Physical Parameters

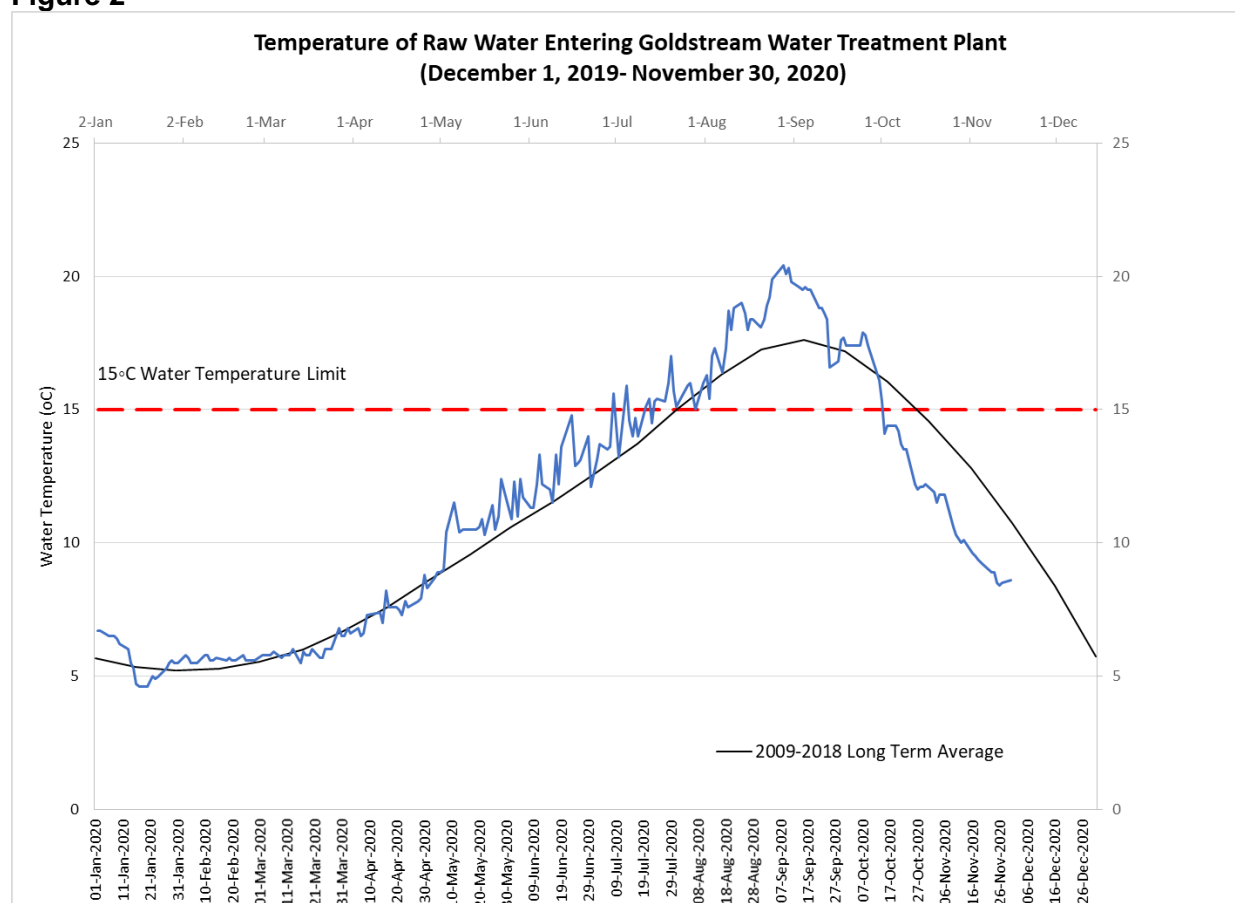
Water Levels. Sooke Lake Reservoir was at 94% of full capacity at the start of this reporting period on June 1, 2020 (Figure 1). This is in line with the historical reservoir levels at that time of year. Reservoir levels continued to fall until the middle of September when rainfalls resulted in the first pulses of recharge. On November 3, the reservoir began to fill consistently, which is comparable with historical recharge times but much earlier than the unusual late reservoir recharge in 2019.

Figure 1



Water Temperature. The raw water temperature measured at the Goldstream Water Treatment Plant remained slightly above the long-term average trend from the beginning of this reporting period to early October. The early breakdown of thermal stratification in the Sooke Lake South Basin in early to mid July facilitated the slightly higher water temperatures. Due to the earlier cooling in October, the duration of the aesthetic temperature exceedance was similar to previous years. Until the end of November, the raw water temperature remained well under the long-term average.

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 September through November 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	14	NTU	0.25	0.45	0.33

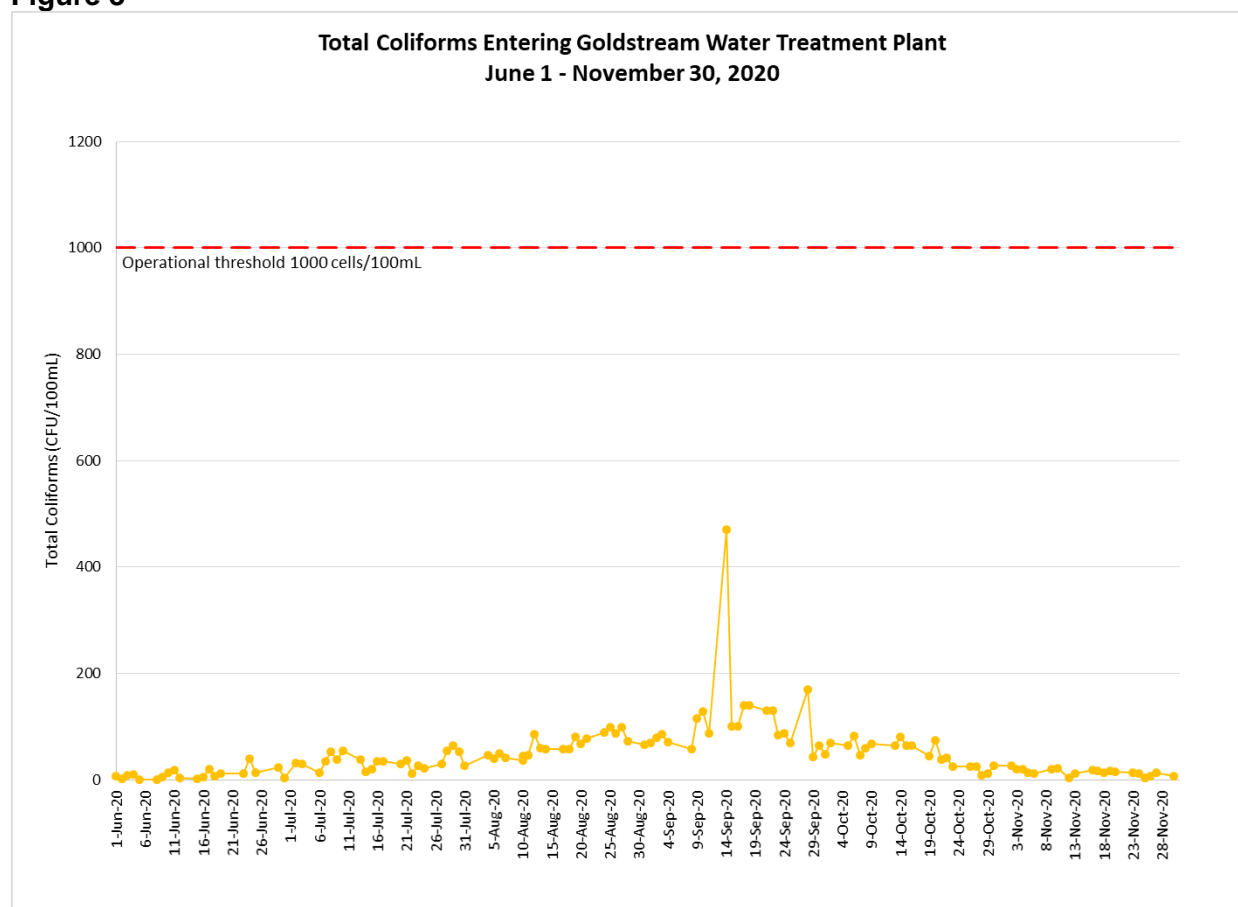
Water Transparency. The transparency of the lake water measured with the Secchi Disc in the lake was high (between 6 and 9 m) and consistent with the long-term average. Minor to moderate algal events throughout the summer and fall accounted for periods with slightly lower transparency but with no measurable impact on the treatability of the water.

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

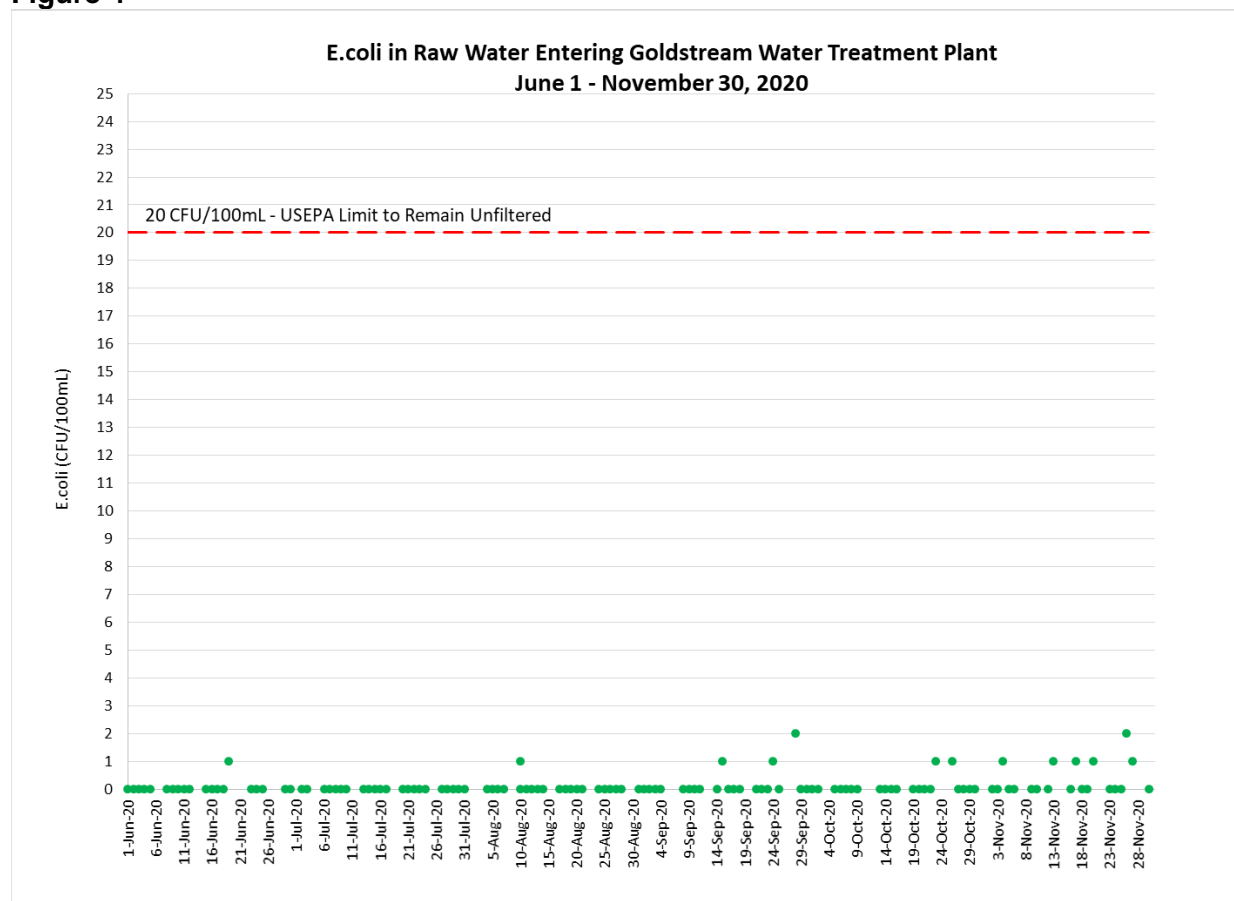
Total Coliform Bacteria and E. Coli. The total coliform concentrations in the raw source water entering the Goldstream Water Treatment Plant remained low throughout the entire reporting period (Figure 3), with the typical increase during the period with the warmest water from August to October. After the breakdown of the thermal stratification in the Sooke Lake South Basin in mid-July, warm water reached all the way to the benthic-bottom layer, stimulating growth and activity of decomposing bacteria groups, which include total coliform bacteria. Lake internal currents induced by wind events or seiches can then easily mobilize these bacteria throughout the water column and they may be picked up in temporary higher concentrations by the water intake. These effects explain total coliform spikes, such as the one in early September (Figure 3). The United States Environmental Protection Agency (USEPA) Surface Water Treatment Rule for avoiding filtration has a non-critical total coliform criteria of maximum 100 CFU/100 mL at the 90th percentile of a six-month sample set. The 90th percentile of total coliform concentrations in the raw water between June and November 2020 was 93.5 CFU/100 mL and was therefore compliant with USEPA filtration exemption criteria.

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 critical USEPA filtration exemption criteria for surface water used for drinking water supply (Figure 4). These results are very typical for Sooke Lake Reservoir during the summer and fall 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. Nutrient input to the reservoir is in general very low during the summer with minimal runoff and inflow. The majority of nutrient input occurs during rain-induced runoff events in the fall and winter. Especially the first flush event after the dry summer period typically introduces a significant portion of the annual nutrient input. These naturally-added nutrients are then quickly consumed by aquatic organisms, which is an indication of a healthy and functioning food chain in the lakes ecosystem (Tables 2 and 3).

Additional water quality monitoring in the wake of the August 16-21 wildfires in the Sooke Lake watershed did not find any indication of increased nutrient input to the tributaries or lake.

Table 2

Sooke Reservoir, South Basin (1m) - SOL-00-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Total Nitrogen	6	ug/L	81	112	98
Total Phosphorus	6	ug/L	<1	2.90	1.90

Table 3

Sooke Reservoir, North Basin (1m) - SOL-04-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Total Nitrogen	6	ug/L	102	126	110
Total Phosphorus	6	ug/L	<1	2.40	1.66

Protozoan Parasites

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

Algae

From June to November 2020, the algal fluctuations followed the well-established long-term trend but the Natural Unit count was higher than the average (Figure 5). Algae can grow quickly and become seasonally abundant under favorable weather conditions, e.g., high temperature, as occurred in 2020. We observed a hotter summer than in previous years with some warm weather records broken in BC. Two small wildfires in the Sooke Lake watershed in August could have potentially introduced additional nutrients to the ecosystem with potential effects on algae growth. The post-wildfire water quality assessment, however, did not find any indication of such impacts. Unusual rainfalls and runoff events in August and September introducing naturally occurring nutrients during the warm water and sunny season were likely the driver of the increased algal activity in late summer and early fall. Nevertheless, no significant algal blooms were observed in Sooke Lake Reservoir, nor were there any water-quality concerns related to algae activity during the reporting period.

Figure 5: Total algal concentration (natural units/mL) from June-November 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).

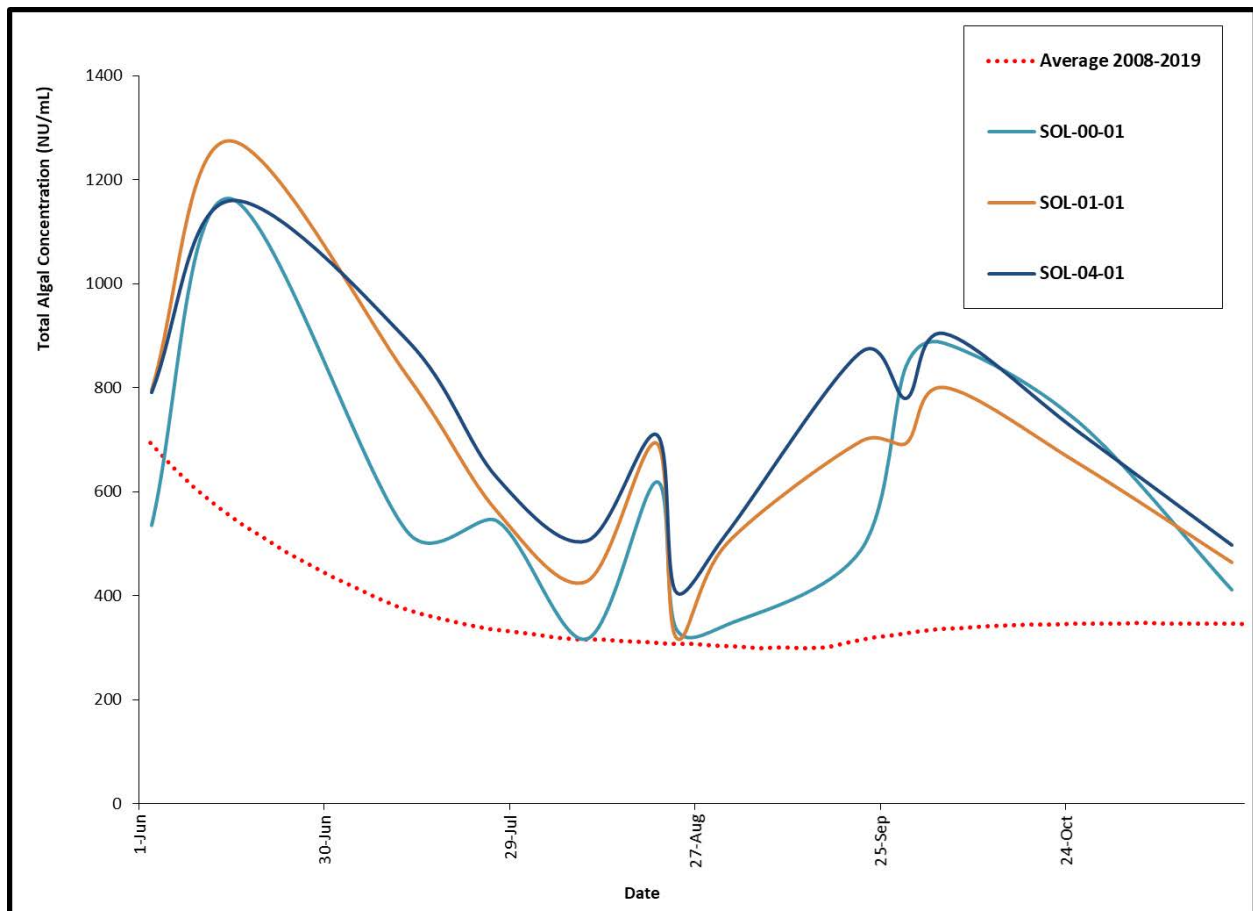
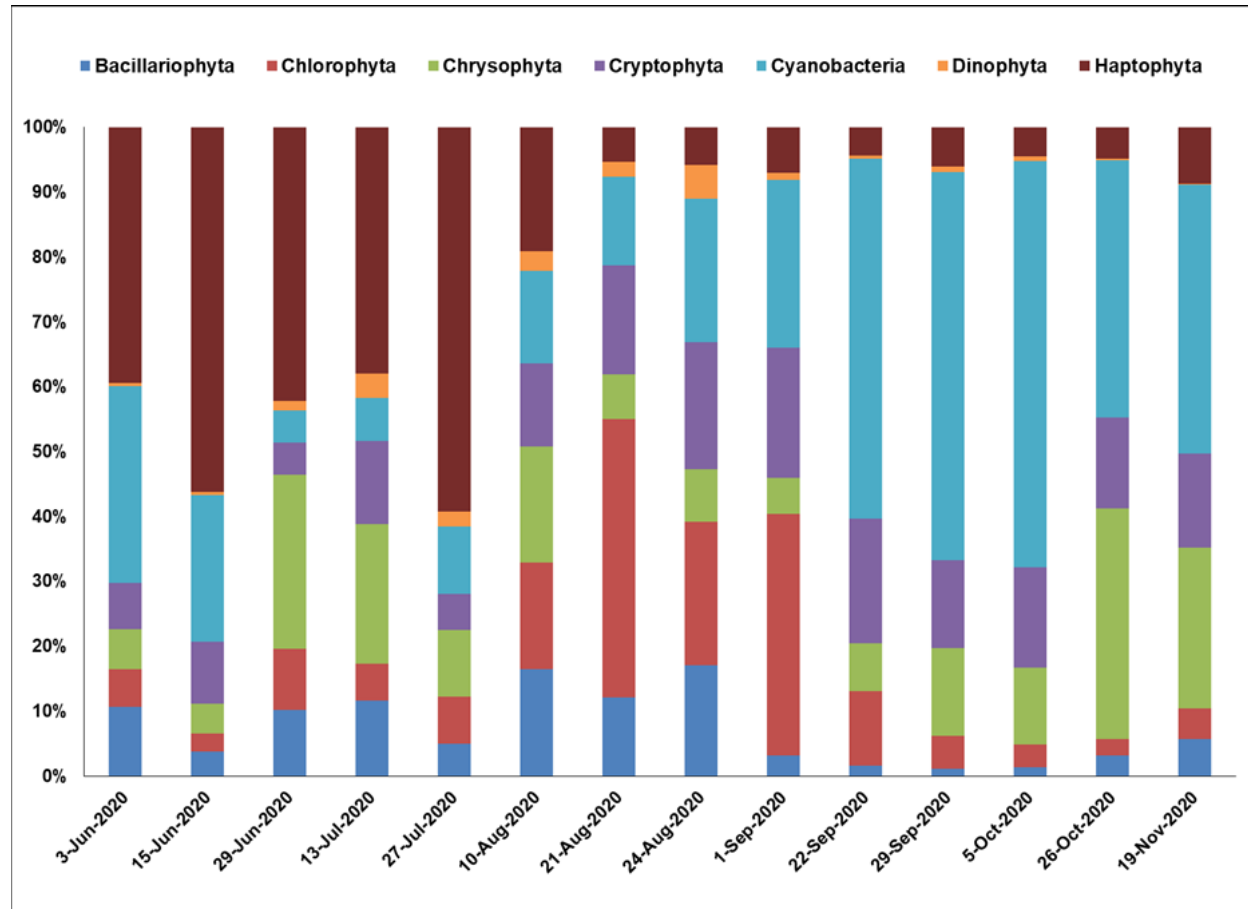


Figure 6: Percent Abundance of different algal groups from June-November 2020, Sooke Lake Reservoir



Staff recorded small flagellates (< 5 microns, possibly the green flagellates, *Pediononas* spp.) in the collected samples, which were quite abundant from the end of summer until the end of autumn but caused no water quality concerns. As these abundant but very small flagellates did not contribute significantly to total algal biomass, staff excluded them in the algal graphs to be consistent with previous years.

In summary, from June to November 2020, algal density was generally in line with the long-term trend in Sooke Lake Reservoir, even though the algal natural unit counts were higher than the multi-year average. Despite the higher algal activity, no blooms were observed during that period. A stronger than usual presence of the golden-brown species *Uroglona* spp. during May and into early June resulted in a public advisory from June 3-9, 2020 for potential fishy/metallic taste and odour in the drinking water.

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 June 16 and July 8, 2020, the turbidity exceeded 1 NTU for about 5 and 2 hours respectively, as a result of high watering demand and peak flows that mobilized pipe sediments in the mains just upstream of the treatment plant. The June 16 event likely reached a peak turbidity of > 5 NTU for a short period of time, however a malfunctioning of the online turbidity analyzer did not allow a proper recording of the event peak. A second turbidity analyzer was installed as a result of this occurrence. These early summer turbidity excursions are known to staff and regulator and are being addressed annually through springtime flushing of the responsible main sections. These measures have limited the number of excursions to 2-4 events per season. Indicator bacteria concentrations were very low during these excursions and parasite concentrations have been non-detect or extremely low throughout the entire reporting period. Therefore the risk to public health from these short-term turbidity excursions was low.

The intake screen (0.5 mm openings) malfunctioned in spring 2020 and was decommissioned until repairs can be completed after this reporting period. Operating the intake without any screening for large parts of this period allowed more suspended material into the drinking water system. While this required additional operational effort in cleaning and maintaining certain water infrastructure components, it did not have a measurable impact on the raw water turbidity results.

Table 4

Goldstream Water Treatment Plant Turbidity - Raw Water	
Samples Collected	143
Minimum	0.20 NTU
Maximum	3.10 NTU
Mean	0.38 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.

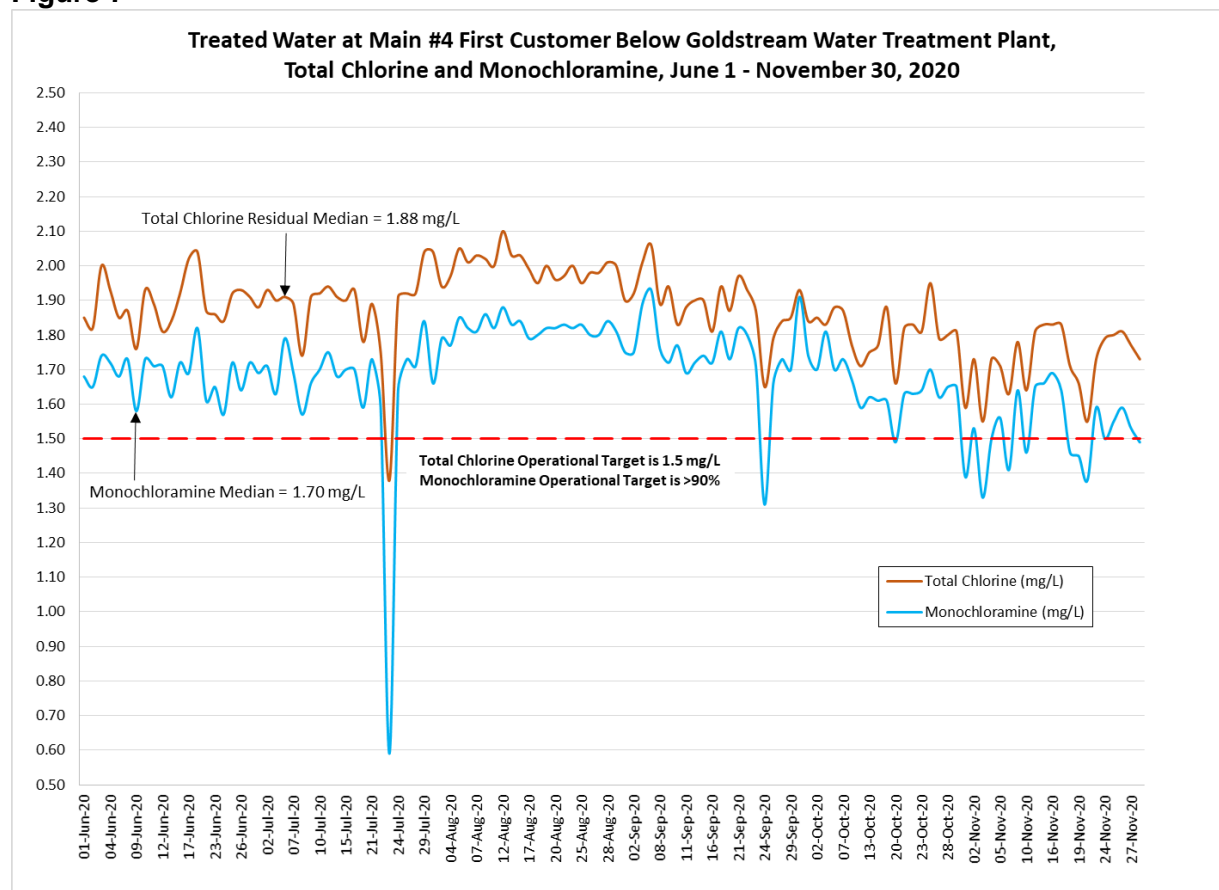
Main #5 First Customer Sampling Station Total Coliform Bacteria and E. Coli

At the Main #5 First Customer Sampling Station immediately downstream of the Goldstream Water Treatment Plant, two samples in October and November tested positive for total coliform bacteria. 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 except for July 23. SCADA (Supervisory Control And Data Acquisition Records) for that day confirm that the chlorination was not compromised that day. It is assumed that a momentary mismatch of chlorine and ammonia concentrations led to this short-term total chlorine residual decrease. 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

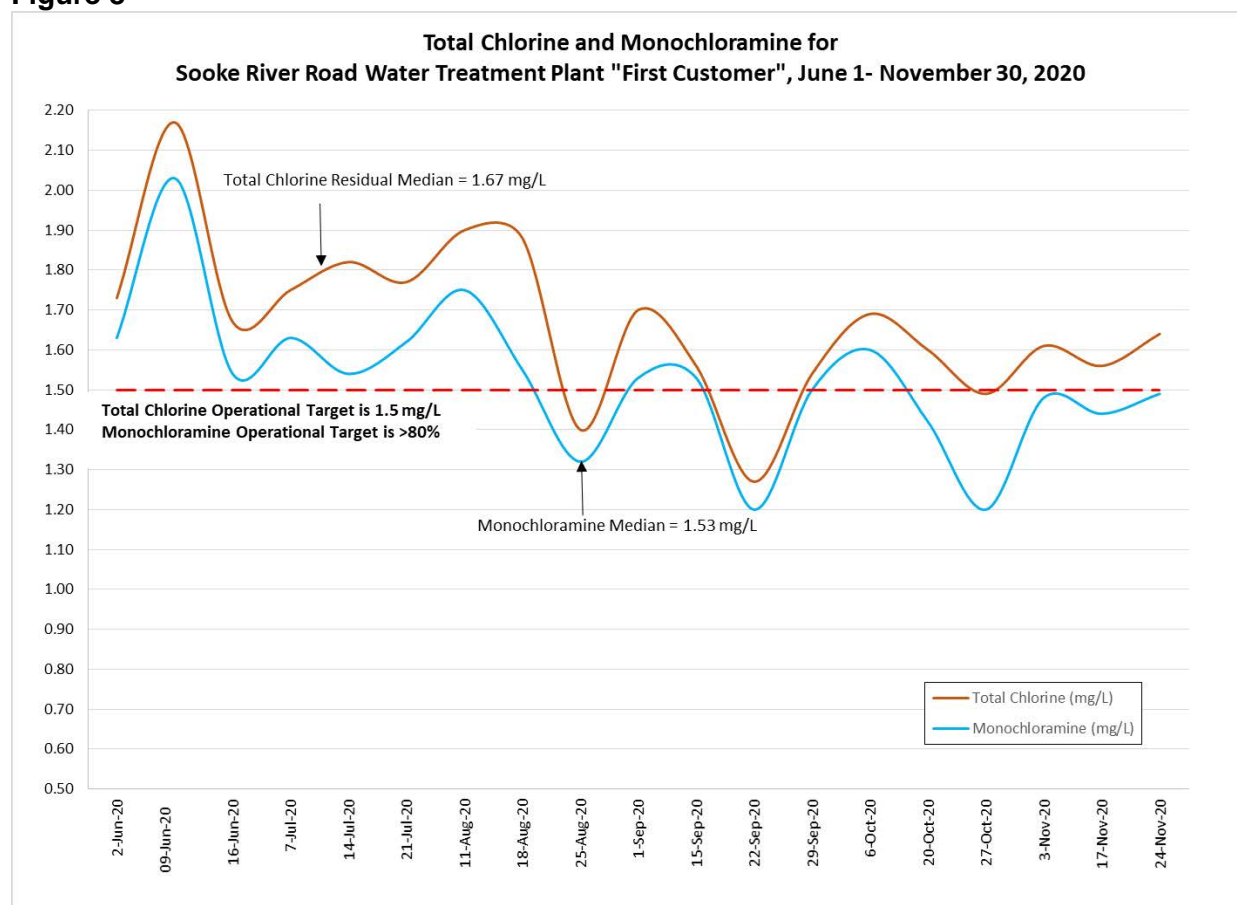
Sooke River Road Water Treatment Plant Turbidity - Raw Water	
Samples Collected	20
Minimum	0.2 NTU
Maximum	2.80 NTU
Mean	0.48 NTU

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 two short periods in August and September 2020. The slightly lower target ratio of 80% monochloramine for this facility was consistently achieved throughout the reporting period. 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

Goldstream Water Treatment Plant Service Area										
Month/Year	Samples Collected	Total Coliforms (CFU/mL)				E.coli (CFU/100mL)	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC > 0	Resamples TC > 0	Samples TC > 10	Samples > 0	Samples Collected	Adverse > 1 NTU	Median mg/L as CL2	Median °C
Jun-20	368	2	0.5	0	0	0	54	3	1.50	14.5
Jul-20	331	4	1.2	0	1	0	49	0	1.50	17.0
Aug-20	340	8	2.4	0	1	0	48	0	1.45	19.0
Sep-20	349	3	0.9	0	0	0	48	0	1.38	19.2
Oct-20	327	3	0.9	0	0	0	47	0	1.32	15.7
Nov-20	355	6	1.7	0	0	1	60	2	1.41	11.3
Total:	2070	26	1.3	0	2	1	306	5	1.46	12.8

Total Coliform Bacteria and E. Coli. Only 26 out of 2,070 distribution system samples, or 1.3% of all bacteriological samples during the reporting period, tested positive for total coliform bacteria. Two samples registered a total coliform concentration of > 10 CFU/100 mL. 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. Five of the 306 turbidity samples registered higher than 1 NTU (Table 6). Some of these adverse results in June were a result of the watering day turbidity excursions. Due to a higher biomass and organic load in the source water during the summer period, more material enters the water system with potential localized effects on turbidity during this time. Overall, these results are an indication of good drinking water quality.

Total Chlorine Residual. A median total chlorine residual concentration of 1.46 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 exceeded the aesthetic objective in the Canadian Drinking Water Quality Guidelines from July to October. While the duration of the exceedance was consistent with previous years, the onset was earlier and the end sooner.

Water Chemistry. The average pH of the drinking water in the Goldstream Service Area was 7.1 during the reporting period. The pH ranged from 6.6 to 7.8, which is typical when operating the chlorine-gas disinfection facility. The average alkalinity was 14.2 mg/L. During previous periods, when the new hypochlorite plant was in operation, higher pH and higher alkalinity values were recorded 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	5.1	23.0	15.1	80
Trihalomethanes (THMs)	12	ug/L	14.0	20.0	16.9	100
NDMA	12	ng/L	<2.0	<2.0	<2.0	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 (Table 8). 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.

Table 8

Metals - Greater Victoria Distribution System							
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	AO (Aesthetic Objective)	MAC (Maximum Acceptable Concentration)
Copper	12	ug/L	14.3	234.0	74.5	1000	2000
Iron	12	ug/L	22.1	38.5	30.2	300	
Lead	12	ug/L	<0.2	4.3	1.0		5
Manganese	12	ug/L	4.3	7.3	6.1	20	120

Sooke Service Area

Table 9

Sooke River Road Water Treatment Plant Service Area										
Month/Year	Samples Collected	Total Coliforms (CFU/mL)				E.coli (CFU/100mL) Samples > 0	Turbidity		Chlorine Residual Median mg/L as CL ₂	Water Temp. Median °C
		Samples TC > 0	Percent TC > 0	Resamples TC > 0	Samples TC > 10		Samples Collected	Adverse > 1 NTU		
Jun-20	30	0	0.0	0	0	0	5	0	1.04	14.2
Jul-20	28	0	0.0	0	0	0	4	0	0.67	16.1
Aug-20	39	0	0.0	0	0	0	6	0	0.47	17.9
Sep-20	32	0	0.0	0	0	0	5	0	0.55	17.4
Oct-20	30	0	0.0	0	0	0	7	0	0.8	14.5
Nov-20	30	0	0.0	0	0	0	5	0	0.69	10.2
Total:	189	0	0.0	0	0	0	32	0	0.92	12.5

Total Coliform Bacteria and E. Coli. In all 189 bacteriological samples during the reporting period, no sample tested positive for total coliform bacteria. No sample contained *E.coli* bacteria (Table 9).

Turbidity. All 32 turbidity samples registered below 1 NTU (Table 8). This is an indication of excellent drinking water quality.

Total Chlorine Residual. A median total chlorine residual concentration of 0.92 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 9).

Water Temperature. The temperature of the drinking water in the system during this reporting period exceeded the aesthetic objective in the Canadian Drinking Water Quality Guidelines from July to October. While the duration of the exceedance was consistent with previous years, the onset was earlier and the end sooner.

Water Chemistry. The average pH of the drinking water in the Sooke Service Area was 7.3 during the reporting period. The pH ranged from 6.9 to 8.1 and is typically very stable and consistent across this system. The average alkalinity was 16.6 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 10).

Table 10

Disinfection Byproducts - Sooke Distribution System						
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	MAC (Maximum Acceptable Concentration)
Haloacetic Acids (HAAs)	3	ug/L	22.0	28.0	25.0	80
Trihalomethanes (THMs)	3	ug/L	26.0	29.0	27.0	100
NDMA	3	ng/L	<2.0	<2.0	<2.0	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 (Table 11).

Table 11

Metals - Sooke Distribution System							
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	AO (Aesthetic Objective)	MAC (Maximum Acceptable Concentration)
Copper	6	ug/L	4.3	41.0	20.3	1000	2000
Iron	6	ug/L	25.4	44.6	33.7	300	
Lead	6	ug/L	<0.2	<0.2	<0.2		5
Manganese	6	ug/L	3.6	5.0	4.5	20	120

CONCLUSION

During this summer/fall reporting period (June-November 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. Unexpected events such as the loss of the intake screen or two small wildfires in the Sooke Lake watershed did not have any measurable impact on the water quality. The multi-barrier approach applied to the Greater Victoria Drinking Water System ensures the excellent drinking water quality achieved during the reporting period.



**CAPITAL REGIONAL DISTRICT
JUAN DE FUCA WATER DISTRIBUTION COMMISSION
Meeting held Tuesday, February 2, 2021**

**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. ELECTION OF CHAIR

Commissioner Logan was elected as Chair of the Juan de Fuca Water Distribution Commission for the two-year term ending December 31, 2022 by acclamation.

4. ELECTION OF VICE CHAIR

Commissioner Rogers was elected as Vice Chair of the Juan de Fuca Water Distribution Commission for the two-year term ending December 31, 2022 by acclamation.

6. APPROVAL OF RESOLUTION FOR 2021

That the Juan de Fuca Water Distribution Commission adopt the resolution as presented.

1. That this resolution applies to the Juan de Fuca Water Distribution Commission for the meetings being held between January 1, 2021 and December 31, 2021.
2. That the attendance of the public at the place of the meeting cannot be accommodated in accordance with the applicable requirements or recommendations under the Public Health Act, despite the best efforts of the Juan de Fuca Water Distribution Commission, because:
 - a. The available meeting facilities cannot accommodate more than (8) people in person, including members of the Juan de Fuca Water Distribution Commission and staff, and
 - b. There are no other facilities presently available that will allow physical attendance of the Juan de Fuca Water Distribution Commission and the public in sufficient numbers; and
3. That the Juan de Fuca Water Distribution Commission is ensuring openness, transparency, accessibility and accountability in respect of the open meeting by the following means:
 - a. By allowing the public to hear or participate via teleconference or electronic meeting software,
 - b. By providing notice of the meeting in newspaper or local notice Board, including the methods for providing written or electronic submissions,
 - c. By making the meeting agenda, as well as the other relevant documents, available on the CRD website, and directing interested persons to the website by means of the notices provided in respect of the meeting,

- d. By strongly encouraging the provision of, and subsequently receiving and distributing to members, written correspondence from the public in advance of the meeting, and
- e. By making the minutes of the meeting available on the CRD website following the meeting.

CARRIED

7. ADOPTION OF MINUTES

That the minutes of the October 6, 2020 meeting be adopted.

CARRIED

10. COMMISSION BUSINESS

10.1. Major Capital Projects Update

The Juan de Fuca Water Distribution Commission receives this report for information.

CARRIED

10.2. Appointment of Representative to the Water Advisory Committee for 2021

That the Vice Chair of the Juan de Fuca Water Distribution Commission be appointed as representative to the Water Advisory Committee for 2021.

CARRIED

10.3. Summary of Recommendations from Other Water Commissions

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

CARRIED

10.4. Water Watch Report

That the January 25, 2020 Water Watch report be received for information.

CARRIED

11. CORRESPONDENCE

11.1. Water Service on Finney Road (January 26, 2021)

Recommendation: That the correspondence be received for information.

CARRIED

MOTION ARISING:

The Juan de Fuca Water Distribution Commission directs staff to prepare a staff report providing an assessment of feasibility and costs to extend a water line along Finney Road.

CARRIED



Making a difference...together

**CAPITAL REGIONAL DISTRICT
SAANICH PENINSULA WATER COMMISSION
Thursday, January 21, 2021**

**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. ELECTION OF CHAIR

Commissioner Barnhart was elected as Chair of the Saanich Peninsula Water Commission for 2021 by acclamation.

4. ELECTION OF VICE CHAIR

Commissioner Doehnel was elected as Vice Chair of the Saanich Peninsula Water Commission for 2021 by acclamation.

6. APPROVAL OF RESOLUTION FOR 2021

That the Saanich Peninsula Water Commission adopt the resolution as presented.

1. That this resolution applies to the Saanich Peninsula Water Commission for the meetings being held between January 1, 2021 and December 31, 2021.
2. That the attendance of the public at the place of the meeting cannot be accommodated in accordance with the applicable requirements or recommendations under the Public Health Act, despite the best efforts of the Saanich Peninsula Water Commission, because:
 - a. The available meeting facilities cannot accommodate more than (8) people in person, including members of the Saanich Peninsula Water Commission and staff, and
 - b. There are no other facilities presently available that will allow physical attendance of the Saanich Peninsula Water Commission and the public in sufficient numbers; and
3. That the Saanich Peninsula Water Commission is ensuring openness, transparency, accessibility and accountability in respect of the open meeting by the following means:
 - a. By allowing the public to hear or participate via teleconference or electronic meeting software,
 - b. By providing notice of the meeting in newspaper or local notice Board, including the methods for providing written or electronic submissions,
 - c. By making the meeting agenda, as well as the other relevant documents, available on the CRD website, and directing interested persons to the website by means of the notices provided in respect of the meeting,
 - d. By strongly encouraging the provision of, and subsequently receiving and distributing to members, written correspondence from the public in advance of the meeting, and
 - e. By making the minutes of the meeting available on the CRD website following the meeting.

CARRIED

7. ADOPTION OF MINUTES

That the minutes of the October 15, 2020 meeting be adopted.

CARRIED

10. COMMISSION BUSINESS

10.1. Saanich Peninsula Water Service 2021 Budget Amendment

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

That the provisionally approved Saanich Peninsula Water Service 2021-2025 capital plan and budget be amended in accordance with the revised plan and budget for Project No. 21-05 as presented.

CARRIED

10.2. Appointment of Representative to the Water Advisory Committee for the 2021 term

That the Vice Chair of the Saanich Peninsula Water Commission represent the Commission on the Water Advisory Committee for 2021.

CARRIED

10.3. Summary of Recommendations from Other Water Commissions

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

CARRIED

10.4. Water Watch Report

That the January 11, 2021 Water Watch Report be received for information.

CARRIED

CAPITAL REGIONAL DISTRICT - INTEGRATED WATER SERVICES

Water Watch

Issued February 08, 2021

Water Supply System Summary:

1. Useable Volume in Storage:

Reservoir	February 28 5 Year Ave		February 28/20		February 7/21		% Existing Full Storage
	ML	MIG	ML	MIG	ML	MIG	
Sooke	92,688	20,391	92,727	20,400	92,727	20,400	100.0%
Goldstream	7,824	1,721	7,630	1,679	9,165	2,016	92.4%
Total	100,511	22,112	100,357	22,079	101,892	22,416	99.4%

2. Average Daily Demand:

For the month of February	105.3 MLD	23.17 MIGD
For week ending February 07, 2021	105.3 MLD	23.17 MIGD
Max. day February 2021, to date:	107.6 MLD	23.68 MIGD

3. Average 5 Year Daily Demand for February

Average (2016 - 2020)	98.5 MLD ¹	21.67 MIGD ²
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¹MLD = Million Litres Per Day ²MIGD = Million Imperial Gallons Per Day

4. Rainfall February:

Average (1914 - 2020):	190.6 mm
Actual Rainfall to Date	25.7 mm (13% of monthly average)

5. Rainfall: Sep 1- Feb 7

Average (1914 - 2020):	1,112.7 mm
2020/2021	1,249.8 mm (112% of average)

6. Water Conservation Action Required:

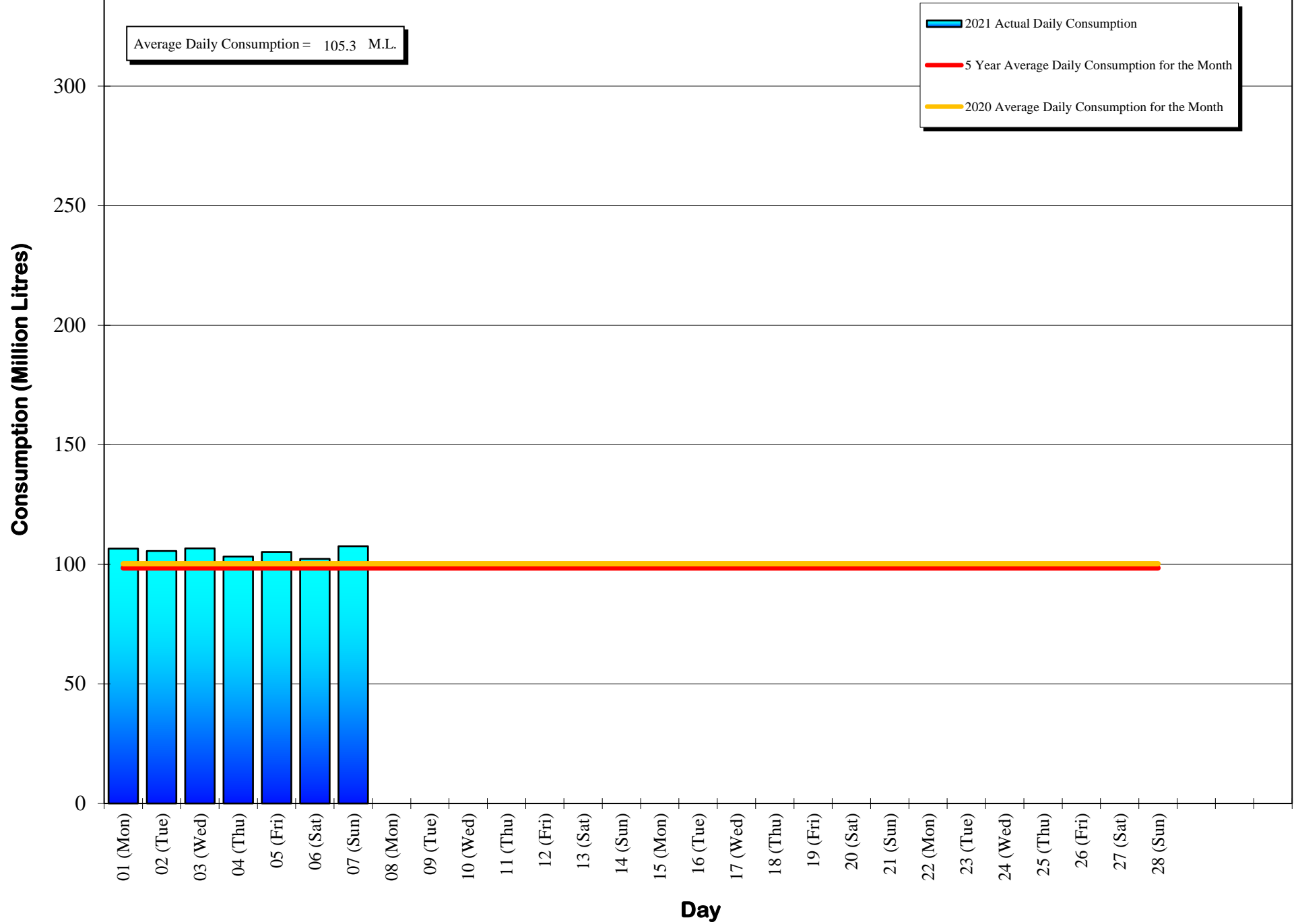
To avoid possible leaks this spring, now is the time to winterize your sprinkler system.
Visit www.crd.bc.ca/water for more information.

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
February 2021



Daily Consumptions: - February 2021

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 (Mon)	106.6		23.5	7	4	Cloudy / Showers	13.5	0.0	13.5
02 (Tue)	105.6		23.2	6	4	Cloudy / Showers	6.1	0.0	6.1
03 (Wed)	106.7		23.5	8	2	Sunny / P. Cloudy / Showers	2.8	0.0	2.8
04 (Thu)	103.3		22.7	8	4	Sunny / P. Cloudy / Showers	0.5	0.0	0.5
05 (Fri)	105.2		23.1	10	5	Sunny / P. Cloudy / Showers	0.8	0.0	0.8
06 (Sat)	102.3	<=Min	22.5	9	4	Sunny / P. Cloudy / Showers	2.0	0.0	2.0
07 (Sun)	107.6	<=Max	23.7	8	0	Sunny / P. Cloudy	0.0	0.0	0.0
08 (Mon)									
09 (Tue)									
10 (Wed)									
11 (Thu)									
12 (Fri)									
13 (Sat)									
14 (Sun)									
15 (Mon)									
16 (Tue)									
17 (Wed)									
18 (Thu)									
19 (Fri)									
20 (Sat)									
21 (Sun)									
22 (Mon)									
23 (Tue)									
24 (Wed)									
25 (Thu)									
26 (Fri)									
27 (Sat)									
28 (Sun)									
TOTAL	737.3 ML		162.22 MIG				25.7	0	25.7
MAX	107.6		23.68	10	5		13.5	0	13.5
AVG	105.3		23.17	8.0	3.3		3.7	0	3.7
MIN	102.3		22.50	6	0		0.0	0	0.0

2. MIG = Million Imperial Gallons

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

Average Rainfall for February (1914-2020)	190.6 mm
Actual Rainfall: February	25.7 mm
% of Average	13%
Average Rainfall (1914-2020): Sept 01 - Feb 07	1,112.7 mm
Actual Rainfall (2020/2021): Sept 01 - Feb 07	1,249.8 mm
% of Average	112%

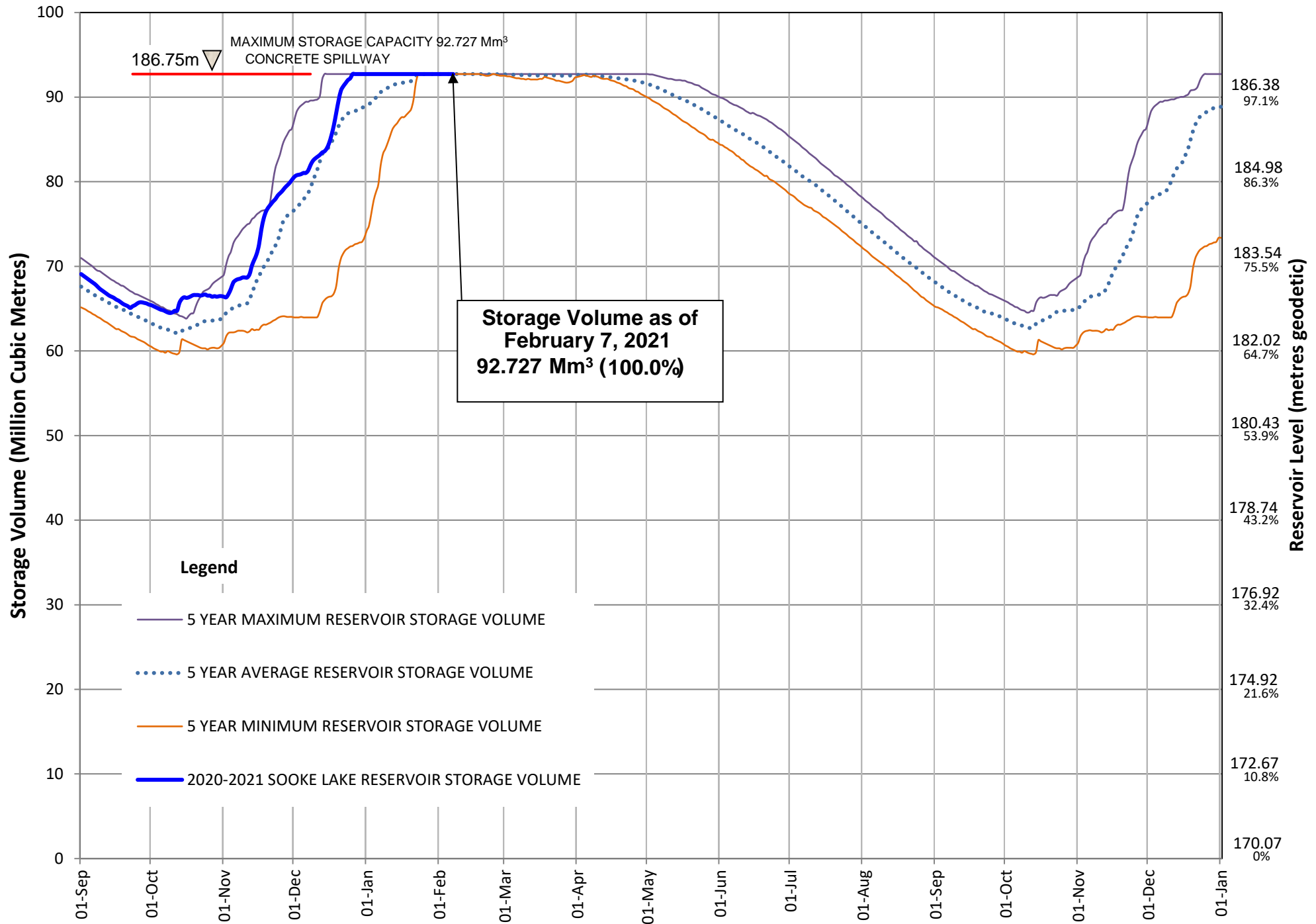
Number days with precip. 0.2 or more	6
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6.32 Billion Imperial Gallons

= 28.70 Billion Litres

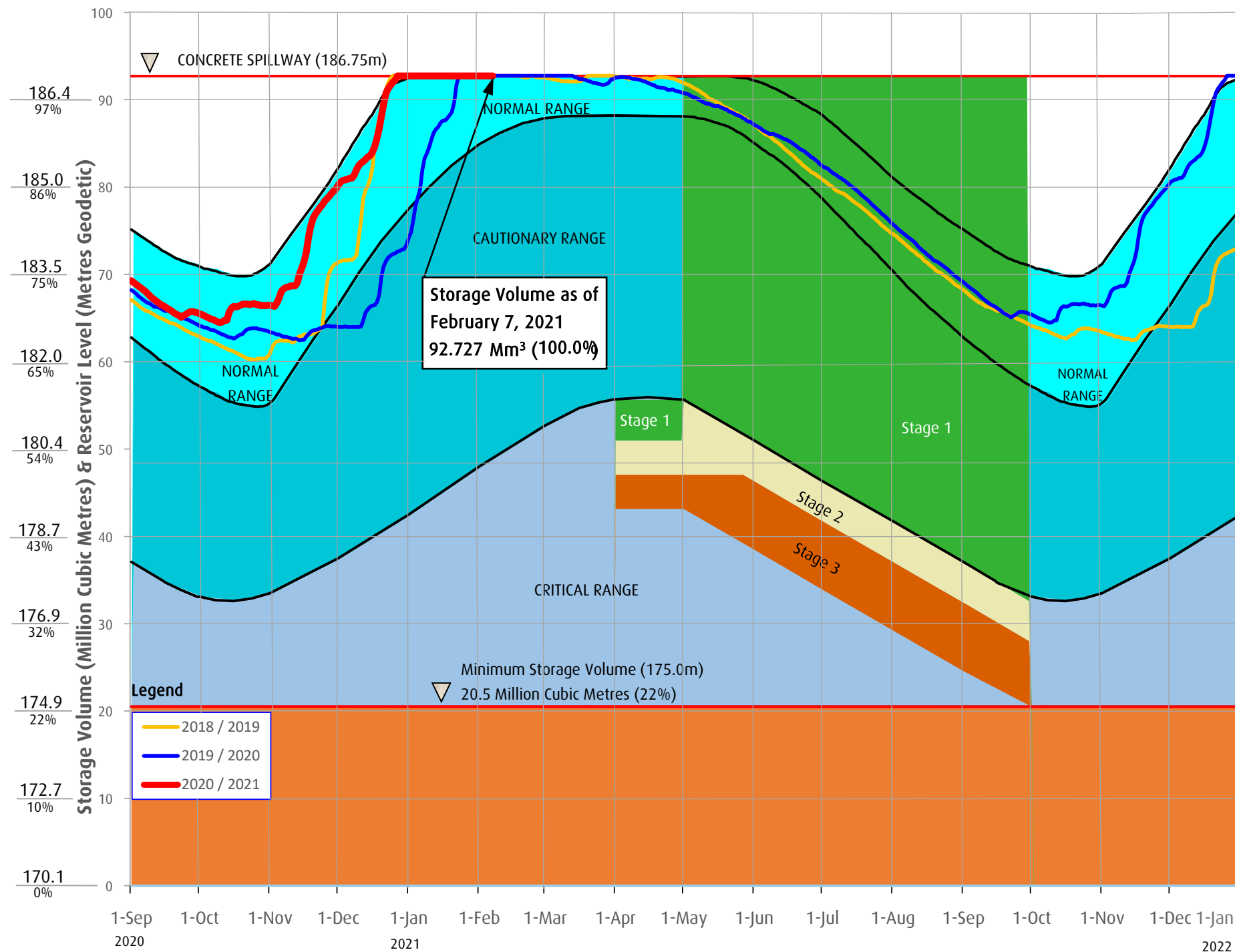
SOOKE LAKE RESERVOIR STORAGE SUMMARY

2020 / 2021



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

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Useable Reservoir Volumes in Storage for February 07, 2021

