Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Notice of Meeting and Meeting Agenda
Regional Water Supply Commission

Wednesday, October 21, 2020 | **11:30 AM** | **6th Floor Boardroom, 625 Fisgard St., Victoria, BC V8W 1R7**

Members:
R. Mersereau (Chair); G. Baird (Vice Chair); N. Chambers; L. Collins; 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. 20-653 Adoption of Minutes

Recommendation: That the minutes of the September 16, 2020 meeting be adopted.

Attachments: Draft Minutes: September 16, 2020

4. REPORT OF THE CHAIR

5. 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.

6. WATER ADVISORY COMMITTEE REPORT

6.1. Water Advisory Committee Chair's Report - Verbal

6.2. 20-656 Draft Water Advisory Committee Minutes September 24, 2020

Recommendation: That the Draft September 24, 2020 Water Advisory Committee Minutes be received for information.

Attachments: Draft Minutes - Water Advisory Committee, September 24, 2020

7. COMMISSION BUSINESS

7.1. 20-525 Regional Water Supply Strategic Plan - 2020 Progress Report

Recommendation: 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.

Attachments: Staff Report: Regional Water Supply Strategic Plan - 2020 Progress Report

Appendix A: Regional Water Supply Strategic Plan Progress Report Dashboard

7.2. 20-661 2019 - 2022 Service Planning - Water

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

Attachments: Staff Report: 2019 - 2021 Service Planning - Water

Appendix A: Community Need Summary - Water

Appendix B: Initiative Progress Report - Water

7.3. 20-651 Regional Water Supply Service - 2021 Operating and Capital Budget

Recommendation: 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.

Attachments: Staff Report: Regional Water Supply Service - 2021 Operating and Capital Budc

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

7.4. 20-663 Bylaw 4382: Regional Water Supply Water Works Facilities Loan Authorization Bylaw

Recommendation: 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.

Attachments: Staff Report: Bylaw 4382 Regional Water Supply Loan Authorization

Appendix A: Bylaw 4382 Regional Water Supply Loan Authorization

7.5. 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 202(

Appendix A: Water Quality Summary Report - Greater Vic - Dec 2019-May 202(

7.6. 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

7.7. 20-654 Water Watch Report

Recommendation: That the October 13, 2020 Water Watch report be received for information.

Attachments: Water Watch Report October 13, 2020

8. CORRESPONDENCE

8.1. 20-659 BC Wildfire Service

Recommendation: That the Correspondence be received for information.

Attachments: Correspondence: BC Wildfire Service

9. NEW BUSINESS

9.1. November Meeting Schedule Change

10. MOTION TO CLOSE THE MEETING

10.1. **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.

11. RISE AND REPORT

12. ADJOURNMENT

Next Meeting: November 25, 2020

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

Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Meeting Minutes

Regional Water Supply Commission

Wednesday, September 16, 2020 **11:30 AM** **6th Floor Boardroom**
625 Fisgard St.
Victoria, BC V8W 1R7

PRESENT:
R. Mersereau (Chair); G. Baird (Vice Chair); N. Chambers; C. Graham; M. Hicks; B. Isitt; K. Kahakauwila; J. Loveday; T. Morrison; C. Stock; L. Szpak; N. Taylor; G. Young

BY WebEx:
Z. de Vries; S. Duncan; K. Harper; G. Logan (12:38 pm); J. Rogers; T. St-Pierre; R. Wade (12:39 pm); E. Wood Zhelka (11:55 am)

STAFF:
T. Robbins, General Manager; A. Constabel, Senior Manager, Watershed Protection; I. Jesney, Senior Manager, Infrastructure Engineering; S. Irg, Senior Manager, Water Infrastructure Operations, G. Harris, Senior Manager, Environmental Protection; S. Scott, Senior Geoscientist, Watershed Protection; N. Burrows, Manager, Wildfire, Security & Emergency Response; T. Urquhart, Communications Coordinator; D. Dionne, Administrative Coordinator; S. Orr (Recorder)

The meeting was called to order at 11:31 a.m.

1. TERRITORIAL ACKNOWLEDGEMENT

Commissioner Kahakauwila provided the territorial acknowledgment.

2. APPROVAL OF THE AGENDA

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

3. ADOPTION OF MINUTES

3.1. 20-524 Adoption of the minutes of the July 15, 2020 Regional Water Supply Commission Meeting

Attachments: Minutes: July 15, 2020

MOVED by Commissioner Stock, and **SECONDED** by Commissioner Baird,
That the minutes of the July 15, 2020 Regional Water Supply Commission meeting be adopted.
CARRIED

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4. CHAIR'S REMARKS

Chair Mersereau provided the following remarks:

- She extended her gratitude to Integrated Water Service's (IWS) staff for their management of the wildfire event in August.
- She advised that a bylaw regarding rain water harvesting standards, Commissioner St-Pierre's notice of motion, was approved by the Electoral Areas Committee and the Capital Regional District Board.
- She stated that staff are working on a strategic plan update for the Commission to be presented in October.
- She advised that she will be meeting with staff to discuss the appointment process for the Water Advisory Committee.

5. GENERAL MANAGER'S REPORT

5.1. Water Supply Outlook

T. Robbins provided a verbal report of water supply demands and outlook.

Staff answered a question regarding the storage level.

5.2. October Meeting

T. Robbins advised that a progress report on the strategic plan for the Regional Water Supply service and draft 2021 budget will be presented to the Commission in October.

6. PRESENTATIONS/DELEGATIONS

There were no presentations or delegations.

7. WATER ADVISORY COMMITTEE REPORT

There was no report.

8. COMMISSION BUSINESS

8.1. 20-527 Remediation of Leech Water Supply Area Gravel Pit - Consideration of Certificate of Compliance

Attachments: Staff Report: Remediation of Leech Water Supply Area Gravel Pit - Consideration of Certificate of Compliance

G. Harris provided a summary of the report as presented.

MOVED by Commissioner Kahakauwila, and **SECONDED** by Commissioner Spzak,
That the Regional Water Supply Commission receive the report for information and that staff be directed not to pursue a Certificate of Compliance for the site.
CARRIED

DRAFT

8.2. 20-526 August 17, 2020 Lightning Strike Wildfires in the Greater Victoria Water Supply Area

Attachments: Staff Report: August 17, 2020 Lightning Strike Wildfires in the GVWSA
Appendix A: Details of Lightning Strike Wildfires in the GVWSA
Appendix B: Map 1 2020 Wildfire Locations - Horton Ridge
Appendix C: Map 2 Mount Healey Fire Perimeter
Appendix D: Map 3 Rithet Fire Perimeter
Appendix E: Map 4 GVWSA Risk Mitigation Features

A. Constabel provided a summary of the report and a PowerPoint presentation illustrating fire fighting initiatives.

The Commission commended staff on a job well done.

Staff answered questions from the Commission regarding:
- Costs associated with wildfire fighting.
- Fuel treatment and rehabilitation plan.
- Debriefing of events.
- Collaborative planning with stakeholders.

The Commission requested that staff bring back a report outlining post-fire events and financial impacts.

MOVED by Commissioner Spzak, and **SECONDED** by Commissioner Chambers,
That the Regional Water Supply Commission receive the report for information.
CARRIED

8.3. 20-528 Summary of Recommendations from Other Water Commissions

Attachments: Summary Of Recommendations from Other Water Commissions

MOVED by Commissioner Kahakauwila, and **SECONDED** by Commissioner Taylor,
That the Summary of Recommendations from Other Water Commissions be received for information.
CARRIED

8.4. 20-529 Water Watch Report

Attachments: Water Watch Report September 8, 2020

MOVED by Commissioner Szpak, and **SECONDED** by Commissioner Taylor,
That the September 8, 2020 Water Watch Report be received for information.
CARRIED

DRAFT

9. NEW BUSINESS

There was no new business.

10. ADJOURNMENT

MOVED by Commissioner Graham, and **SECONDED** by Commissioner Baird,
The meeting be adjourned at 12:47 pm.
CARRIED

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CHAIR

_____
SECRETARY

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MINUTES OF A MEETING OF THE WATER ADVISORY COMMITTEE
Held Thursday, September 24, 2020 at 1:30 p.m., 6th Floor Boardroom, 625 Fisgard Street, Victoria, BC

PRESENT: **Members:** G. Baird; M. Doehnel for R. Barnhart; J. Rogers; D. Timothy
Electronic: R. Hunsinger (Chair); J. Todd (Vice Chair); E. Cote; T. Krawczyk; K. Sander; S. Sinclair; M. Turner (3:10 p.m.)
Staff: T. Robbins, General Manager; A, Constabel, Senior Manager, Watershed Protection; T. Urquhart, Communications Coordinator; D. Dionne (Recorder)

REGRETS: P. Lennox; C. Nowakowski; H. Thompson

The meeting was called to order at 1:30 p.m.

Vice Chair Todd advised that she would be Chairing the meeting today.

1. APPROVAL OF AGENDA

MOVED by G. Baird and **SECONDED** by J. Rogers,
That the agenda for the September 24, 2020 meeting be approved.

CARRIED

2. ADOPTION OF MINUTES

MOVED by G. Baird and **SECONDED** by J. Rogers,
That the minutes of the June 25, 2020 meeting be adopted.

CARRIED

3. CHAIR'S REMARKS

Vice Chair Todd advised that Heather Thompson recently had a baby and will be rejoining Committee meetings as soon as she is able.

4. PRESENTATIONS / DELEGATIONS

There were no presentations or delegations.

5. REGIONAL WATER SUPPLY COMMISSION BUSINESS

5.1. Summary of Regional Water Supply Commission Recommendations

T. Robbins highlighted the following staff reports received at the September 16, 2020 Regional Water Supply Commission meeting:

1. Remediation of Leech Water Supply Gravel Pit – Consideration of Certificate of Compliance.

2. Wildfires in the Greater Victoria Water Supply Area – 2020.

A. Constabel provided a presentation on the wildfires.

MOVED by G. Baird and **SECONDED** by J. Rogers,
That the Summary of Recommendations be received for information.

CARRIED

5.2. Water Watch Report

T. Robbins provided an update on the water storage and demand over spring, summer and into the fall.

Discussion ensued and staff responded to questions about turbidity events and peak flow.

MOVED by G. Baird and **SECONDED** by J. Rogers,
That the September 14, 2020 Water Watch report be received for information.

CARRIED

6. WATER ADVISORY COMMITTEE BUSINESS

6.1. Working Group Discussion

T. Robbins provided background on previous working groups noting that the groups would meet on their own, without staff facilitation, to discuss or investigate specific topics of interest. The groups would report back to the Water Advisory Committee at its regular meetings. The list of working group topics below were areas of interest to the Regional Water Supply Commission and are provided to help guide the formation of the working groups.

Discussion ensued and staff responded to questions regarding, Regional Water Supply Strategic Plan and disaster preparedness.

6.2. Working Group Establishment and Procedures

1) Long Term Water Supply and Demand Management
2) Water Quality
3) Major Capital Projects
4) Water Rates
    - Agriculture
    - First Nations
5) Water Supply Area – Land Acquisition Strategy
6) Dam Safety

The Committee discussed the list of topics and established working groups in the following areas:

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- Long term water supply and demand management
    - Elise Cote
    - Jennifer Todd
- Water Quality
    - Ron Hunsinger
    - David Timothy
- Major Capital Projects (including dam safety)
    - Gord Baird
- Water Rates (including agriculture and First Nations)
    - Tayler Krawczyk
    - Karen Sander

The Committee agreed that members would work together via email to confirm who would be in each group and how and when they will meet. Staff will ensure there is a standing agenda item on future Water Advisory Committee agendas for working groups to report on progress and findings to the Committee.

MOVED by G. Baird and **SECONDED** by E. Cote,
That the Water Advisory Committee establish working groups, with three to four members each, in the following areas:

- Long term water supply and demand management
- Water Quality
- Major Capital Projects (including dam safety)
- Water Rates (including agriculture and First Nations)

And that each working group report back to the Committee, at its regular business meetings, its progress and findings.

CARRIED

6.3. Update on the pH and Corrosion Study

T. Robbins advised that:

- Staff continue to undertake a recommissioning of the new disinfection works to replace the chlorine and ammonia gas system with liquid sodium hypochlorite and ammonia systems at the disinfection facility, following completion of deficiency work.
- There was some delay in receiving supplies from the United States.
- Once this work is complete and the new system is operating stably, the second phase of the pH and Corrosion Study can begin, which is the tap sampling program.
- The second phase won't begin until the new system is operational, as the pH and corrosivity of the water changes when operating on the liquid sodium hypochlorite system versus the gas system.
- Recommissioning should be completed in the next month or so, and the tap sampling program could begin before the end of the year.

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- Staff continue to address the impacts of COVID-19 and confirm with potential participants of the tap sampling program that they are willing to work with the CRD.

Staff responded to questions regarding the tap sampling program and water pH conditions.

MOVED by T. Krawczyk and **SECONDED** by J. Rogers,
That the update be received for information.

CARRIED

7. WATER ADVISORY COMMITTEE – EXPIRING TERMS (DECEMBER 31, 2020)

- Sandy Sinclair
- Ron Hunsinger
- David Timothy
- Pat Lennox
- Tayler Krawczyk

T. Robbins advised that:

- The listed members' two-year term is expiring at the end of December.
- Each listed member is able to serve another two-year term.
- Staff will email each member individually to confirm if they wish to stand another term.
- Any vacancies, where a member does not wish to stand another term, would need to be advertised for.
- The names of those interested would be forwarded to the Regional Water Supply Commission to make a recommendation to the Board before year end.

8. NEW BUSINESS

There was no new business.

9. ADJOURNMENT

MOVED by D. Timothy and **SECONDED** by E. Cote,
That the Water Advisory Committee meeting be adjourned at 3:22 p.m.

CARRIED

CHAIR SECRETARY

DRAFT

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RWSC 20-07

REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, OCTOBER 21, 2020

SUBJECT **Regional Water Supply Strategic Plan – 2020 Progress Report**

ISSUE SUMMARY

This report is an assessment of progress made on the Regional Water Supply Strategic Plan.

BACKGROUND

The Strategic Plan (the Plan) for Regional Water Supply was renewed in 2017 following public and Water Advisory Committee engagement and approved by the Regional Water Supply Commission (Commission) and the Capital Regional District (CRD) Board in the Fall of 2017. The current plan sets out a 30 year planning horizon to 2050. The Plan centers around three overarching commitments, with strategic priorities and actions to ensure the commitments are upheld over the planning period.

The strategic priorities are based on the need to mitigate or adapt to changing factors affecting the service, while ensuring achievement of long term commitments remains the first priority. The actions focus on tactics including initiatives, projects or studies intended to inform or meet near term objectives and support the strategic priorities. It is expected that the strategic priorities would be reviewed and updated every 5 to 10 years and the actions would be planned, budgeted, and implemented (subject to Commission and Board approval) over the five years following approval of the plan (2018 – 2022).

This report provides a 'mid-term' progress report. Good progress is being made on the Plan's strategic priorities and associated actions, which are summarized in Appendix A. Staff continue to define scope and budget for upcoming actions and initiatives, which are reflected in the annual service plan and budget. Staff also regularly adjust CRD work effort and capacity to achieve progress on the Plan while balancing day-to-day system operations and service delivery and the CRD's water supply commitments. The Plan's direction and implementation continue to align with the CRD Board's Community Need Summary Report which is part of the overall corporate and financial planning process.

It is anticipated that a review of the 2023 – 2027 strategic priorities and actions will be conducted in the Fall of 2022.

ALTERNATIVES

Alternative 1
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.

Alternative 2
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 referred back to staff to be amended as directed by the Commission.

IMPLICATIONS

Any significant change in strategic direction will have to be addressed and reflected through the 2021-2025 service and financial planning process, but minor adjustments to actions and initiatives will be managed operationally within the delegated authority of staff, provided they do not have material impacts on service plans and are within the overall approved budget. Likewise, staff can modify the scope of and/or accelerate/decelerate effort on in-stream or planned actions in response to changing conditions, provided they are within the approved budget, as has been the case with the COVID-19 pandemic impacts.

CONCLUSION

In 2017, the CRD set out a 30 year plan of renewed commitments, strategic priorities and actions in a *Strategic Plan for Regional Water Supply*. After three years of working under this Plan, good progress has been made on many of the actions and strategic priorities. Staff continue to define scope and budget for upcoming actions and initiatives, which are for the most part, reflected in the annual and five year financial plans.

RECOMMENDATION

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.

Submitted by:	Ted Robbins, B. Sc., C. Tech., General Manager, Integrated Water Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Regional Water Supply Strategic Plan Progress Report Dashboard

Regional Water Supply Strategic Plan Progress Report

Update No. 1, September 2020

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APPENDIX A

On track | Future actions(s) planned | Delayed | No planned action(s)

Commitment	Strategic Priority	Actions	Annual Status (by year)	Progress Made	Progress Pending
Provide high quality, safe drinking water	**Manage and protect the Greater Victoria Water Supply Area (GVWSA).**	• Continue to actively protect the GVWSA and water supply infrastructure from unauthorized activities and seek opportunities to acquire ownership and control of the remaining catchment lands and critical adjacent lands to act as a buffer.	2018 2019 2020 2021 2022	• Development and adoption of land acquisition priorities for the GVWSA. • Remediation of the Weeks Lake gravel pit that was contaminated with lead and hydrocarbons. • Training and designation of additional watershed security officers.	
		• Reduce risk to water supply and ecosystems from contaminants and invasive plants, animals and pathogens by completing a biosecurity risk assessment and implementing biosecurity mitigation measures.	2018 2019 2020 2021 2022		• Completion of a GVWSA biosecurity strategy for the GVWSA.
		• Implement the GVWSA climate change adaptation initiatives to reduce the impact of the potential types, magnitude and rate of climate change on GVWSA ecosystems, water quality and infrastructure.	2018 2019 2020 2021 2022	• Implementation of climate change actions related to increasing the capacity of stream crossing structures (29 stream crossings upgraded) and upgrade of weather and hydrology monitoring in the GVWSA. • Precipitation and Flood studies completed relative to dam safety/infrastructure. • Initiation of a collaborative research project with the University of Victoria and Natural Resources Canada to model potential changes to the forests in the GVWSA with climate change and the implications of these changes for wildfire risk.	

		• Assess the need for more active forest management to protect and enhance forest health and resilience.	2018 2019 2020 2021 2022	• Aerial and airphoto mapping and ground investigation to monitor forest insect and diseases present in the GVWSA.	
		• Reduce risk of landscape level wildfire by designing and implementing forest fuel management treatments.	2018 2019 2020 2021 2022	• Completion of burn probability mapping for the GVWSA to guide forest fuel management. • Completion of forest fuel management treatments by thinning, pruning and removing, chipping or burning woody debris (2 major fuel treatment corridors completed).	• Planning for a prescribed burning trial in the Leech WSA.
	Maintain a multi-barrier approach to drinking water quality protection	• Continually evaluate the effectiveness of the water treatment processes.	2018 2019 2020 2021 2022	• The water quality monitoring program for the Greater Victoria Drinking Water System uses a combination of online analyzers and daily grab samples to ensure that water treatment is effective and all water quality parameters are in compliance with the regulatory requirements.	
		• Use the Regional Water Supply Service drinking water safety plan in operational and capital project decision making	2018 2019 2020 2021 2022	• The Greater Victoria Drinking Water Safety Plan, a comprehensive water quality risk registry, was completed in 2018, and is annually updated to inform operational and capital upgrades.	
		• Maintain multiple accreditations to ensure highest quality drinking water testing.	2018 2019 2020 2021 2022	• ISO 17025 accreditation (first certified 2017 to ISO 17025:2015, recertified in 2019 to new standard ISO 17025:2017). • Reassessed by Canadian Association for Laboratory Accreditation (CALA) every 2 years to maintain accreditation status. Requires	

				successful participation in a semi-annual proficiency testing program. • Certified by Provincial Health Officer (PHO) for water microbiology. Maintenance of approval contingent on thrice yearly successful participation in proficiency testing program and onsite audit every 3 years.	
		• Continue to develop and refine the Utility Operator Training Program and ensure adherence to Environmental Operator Certification Program requirements.	2018 2019 2020 2021 2022	• Environmental Operator Certification Program (EOCP) Corporate Recognition Award for IWS internal operator program • Continued Utility Operator exposure to all utility disciplines, for well-rounded development. • Ensure compliance and progression through EOCP certifications as a requirement of the Utility Operator Program.	
		• Identify and implement progressive and innovative training and development opportunities with respect to utility operations and management for departmental staff.	2018 2019 2020 2021 2022	• Utilize professional training consultants to expand knowledge of all working environments.	
	Maintain a risk register for the Regional Water Supply System that identifies potential risks to water quality, water supply and water transmission and provide mitigation and adaptation measures.	• Regularly review Regional Water System hazards, risks and vulnerabilities and update the risk register.	2018 2019 2020 2021 2022	• A Corporate Risk Register has been established by the CRD, managed by the Manager Risk and Insurance which includes Regional Water System risks. • A Drinking Water Safety Plan was developed that lists and categorizes risks to the Regional Water Supply and tracks actions to reduce or mitigate those risks. • A HRVA study was completed March 2017 and the recommendations are to be included in the RWS Risk Register	• The RWS Capital Plan includes a Risk and Resilience study and a Seismic Assessment of Critical Facilities.

				• Updated Cross Connection Control and water conservation bylaws to align with building and plumbing codes and operational requirements including the uni-directional flushing program. • Phase One of the of the PH and Corrosion study for the Regional Water Supply system complete.	• Phase Two of the study will involve tap sampling to determine lead concentrations and sources.
		• Continue the emphasis on wildfire prevention, early detection and suppression capability, preparedness, forest fuel management and post-fire rehabilitation planning to reduce and mitigate the risk of a large-scale wildfire affecting the water supply area and source water quality.	2018 2019 2020 2021 2022	• Wildfire prevention and suppression remains a priority for the GVWSA, an infrared camera to assist with monitoring for wildfire starts has been installed at a high point in the GVWSA, along with a new FTE request for wildfire/security to ensure patrols can be fully staffed.	• Completion of a study on post-wildfire hazards and mitigation options in the Sooke WSA.
		• Continue to monitor and evaluate the implications of the reliance on unfiltered source water and the absence of a filtration step in the water treatment process.	2018 2019 2020 2021 2022		• This will be considered in the context of the Water Supply Master Plan Update recommendations (2021) and consultation with Island Health.
		• Conduct specific seismic risk evaluations of critical assets.	2018 2019 2020 2021 2022	• A specific Dam Safety Risk Register has been created and includes recommendations from various Dam Safety studies and Dam Safety Reviews. • The Sooke, Saddle and Deception Dams Emergency Procedures document has been updated along with dam breech scenario inundation mapping.	

Provide an adequate, long-term supply of drinking water	**Plan and prepare for future water supply needs to meet demand considering impacts of climate change, population growth, and per-capita demand rates**	• Evaluate climate change impacts and risks on water supply and incorporate mitigation and adaptation recommendations in operating and capital plans.	2018 2019 2020 2021 2022	• Completion of planning and progress on the implementation of a hydrology monitoring system in the Leech WSA. • Upgrade of hydrology monitoring stations in the Sooke and Goldstream WSAs. • Study on the effects of climate change on Sooke Lake Reservoir completed. • Installation of long term forest monitoring plots completed. • Flood forecasting system to guide operating decisions regarding reservoir operating rules. • Consolidated and formalized the Fisheries Water Release Program for the Sooke, Charters and Goldstream Rivers.	• Goldstream Water Supply Area Capacity Study • Sooke Lake Reservoir – North Basin Water Quality Feasibility Study
		• Update service population and service population growth rate forecasts with current census data, considering municipal Official Community Plan land use and population directions, to estimate growth related water demand.	2018 2019 2020 2021 2022	• The Capital Plan includes the Master Plan Update that will address the current and future water demand issues.	
		• Establish long-term per capita demand rate projections and Demand Management Program objectives to achieve rates and determine annual water demand by sector.	2018 2019 2020 2021 2022	• Agricultural Water Demand Model and Land Use Inventory completed.	• A Comprehensive “By Sector” water demand report will be presented in 2021.
		• Undertake regular monitoring and assessment of the physical, chemical, and biological parameters of the Leech Water Supply Area (WSA) source water and determine a plan to address potential water quality, ecological and ecosystem implications at Sooke Lake Reservoir resulting from diversion of Leech WSA source water (Leech River water) to	2018 2019 2020 2021 2022	• Completion of planning and implementation of a hydrology monitoring system in the Leech WSA.	

		Sooke Lake Reservoir (ie. combining source waters).			
		• Develop a plan to undertake more 'intensive' monitoring of Leech River water quality to inform treatability recommendations and long term treatment strategy.	2018 2019 **2020** 2021 2022	• Water quality sampling and testing in the Leech WSA began in 2020 and will continue through 2022.	
		• Determine conceptual 'hard' capital infrastructure plan to design and construct the necessary infrastructure to divert Leech WSA flows to Sooke Lake Reservoir.	2018 2019 **2020** 2021 2022	• The Capital Plan includes the Master Plan Update that will address the concept of diverting the Leech watershed water to the system.	
		• Conduct a feasibility study to explore the design and construction of supply and transmission infrastructure at Sooke Lake Reservoir to provide increased resiliency, including consideration of a deep northern intake and a secondary transmission pipe between the reservoir and the treatment facilities.	2018 2019 **2020** 2021 2022	• The Capital Plan includes the Master Plan Update that will address the supply and transmission infrastructure resiliency and long term capacity and treatment requirements.	
		• Undertake biannual Supply System hydraulic modelling to confirm system capacity.	2018 2019 **2020** 2021 2022		• The Capital Plan includes the Hydraulic Capacity study of the transmission system.
	Develop a higher level of public understanding of the drinking water supply system and value of water through education and engagement	• Continue to improve Regional Water Supply service and system information available to the public through a variety of media streams, to raise awareness around specific topics including water supply and conservation, and supply infrastructure investment.	**2018** **2019** **2020** 2021 2022	• Increased use of CRD social media streams (Twitter and Facebook) • Continue to prepare the Daily, Weekly and Monthly Water Watch and include information on the CRD webpage.	
		• Continue to promote the value of the drinking water resource through Water Supply Area public and school tours and other outreach.	**2018** **2019** **2020** 2021 2022	• Expansion of public and school tours of the GVWSA facilitated by a 0.5 FTE approved in 2019 (exception: no tours in 2020 due to COVID-19). • The Water Advisory Committee (WAC) has formally considered and provided advice on:	

		• Continue to have two-way dialogue with the Water Advisory Committee regarding water supply matters.	2018 2019 2020 2021 2022	• Post Disaster Water Supply and Distribution Plan • Water Supply Area Land Acquisition Study • Impacts of Malahat Detour Route Proposal • Health Canada change in Lead Guidelines for Drinking Water and CRD Actions.	
		• Explore opportunities for mutually beneficial collaborative partnerships to carry out research and monitoring initiatives in the water supply area and across the system.	2018 2019 2020 2021 2022	• Successful research partnerships with University of Victoria, NSERC forWater network, Canadian Forest Service in the areas of: wildfire fuel and burn modelling; paleo-ecological record of large wildfires and forest changes; hydrology of the Leech WSA.	

Provide a reliable and efficient drinking water transmission system	**Maintain a capital planning process and appropriate investment in water supply infrastructure to ensure reliable system performance**	• Complete a short term (annual and 5-year), medium term (5-10 year), long term (10-20 year) and long range (20-50 year) asset management plan – informed by asset condition and remaining service life assessment, water operation and maintenance history, water audit, changing regulatory requirements, Hazard, Risk and Vulnerability Assessment (HRVA) recommendations, and system capacity requirements.	2018 2019 2020 2021 2022	• Completed Regional Water Supply Water Audit
				• The Capital Plan includes the Asset Management Planning, which will address many topics including Level-of-Service, asset inventory, valuation, condition assessment, utilization, failure modes analysis, asset life expectancy, actions to extend useful life, business risk exposure, consequences of failure, O&M strategies, utility protection, etc.
				• 2018-2020 Capital Investment value has been $15,000,000, focused on Infrastructure Renewal and Resiliency including:
				  • Goldstream Water Treatment Plant Upgrades
				  • Lubbe Dam No. 4 Replacement	

				• Sooke Lake Reservoir Intake Screen Replacement	
		• Explore Regional Water Development Cost Charges to fund future growth related supply system infrastructure improvements.	2018 2019 2020 2021 2022		• The Capital Plan includes the study of creating a Development Cost Charge Program.
		• In collaboration with municipal and First Nations water purveyors, establish water supply service agreements.	2018 2019 2020 2021 2022	• Draft Water Supply Service Agreements with some of the First Nations in the region and water rate discussion continue.	
	Continually review cost effectiveness of service respecting operations and maintenance and capital investment decisions.	• Continue to review reactive, preventive and predictive operations and maintenance history and confirm operation and maintenance service levels for the Regional Water Supply Service that consider best practices and reliability centered maintenance approach.	2018 2019 2020 2021 2022	• Completed a Water Operations Review project in 2018 with a focus of reviewing the operational and maintenance teams for cost effectiveness and efficiency in service delivery. Have completed several phases of implementation and optimization based on the outcomes of the 2018 Review project.	• Continual improvement in terms of operational and maintenance optimization is required with a focused review over the next 5 years and the development of a sustainable approach going forward.
		• Consider life cycle costs with new infrastructure design and asset replacement.	2018 2019 2020 2021 2022	• Ongoing as part of annual Capital Plan development.	
		• In asset replacement decisions, balance maximizing infrastructure service life with infrastructure reliability.	2018 2019 2020 2021 2022	• Ongoing as part of Capital Plan; Asset Management Planning and Master Planning.	
		• Optimize capital investment taking into consideration priority, annual and long term budget and water rate impacts and resource availability to deliver the projects.	2018 2019 2020 2021 2022	• Ongoing as part of Capital Plan and output of the Corporate and RWS Risk Registers.	• Agricultural water rate review and options study.
	Develop and manage emergency bulk drinking water supply systems for Greater Victoria	• Establish emergency and post-disaster water supply protocols and obtain necessary supplies, materials and equipment to implement protocols. Establish water purveyor support roles and responsibilities in emergency water supply and distribution.	2018 2019 2020 2021 2022	• Resilient Hydrants: For use as a water distribution point during an emergency. Currently five hydrants are in place throughout the region and an additional five more will be installed by the end of 2020. These hydrants are a point of connection	• Construction of a critical equipment storage building. This structure will be used to store critical equipment and spare parts required for an emergency response related to the water supply systems.

				for the emergency water distribution modules. • Two emergency water supply/ distribution modules are ready for deployment consisting of a trailer module and a stationary module. • The two modules are regularly monitored and exercised to ensure immediate deployment capability in the event of an emergency. A second round of operator training was completed in 2020 to expand the pool of operators familiar with the deployment of this emergency equipment. • The seismic resilient 'hardened water main grid' continues to expand as water mains are replaced through capital projects. • Purchase of adapters for the emergency repair of concrete supply mains. The adapters act as an emergency repair coupling and allow the flexibility to utilize either Steel or Ductile Iron pipe material. • Standard Operating Procedures were developed to isolated key sections of the Regional Supply System in the event of an emergency or supply main failure. This will allow sections to be isolated while the failure is located and repaired.	• Upon completion of the critical equipment storage building, the requirement for additional emergency water distribution modules will be reviewed. • Additional Resilient Hydrants will continue to be installed at critical locations throughout the region.
		• Outline how an emergency/post disaster drinking water supply can be supported by regional emergency management plans and available senior government supports under certain conditions.	2018 2019 2020 2021 2022		• Further integration with Regional Emergency Management Partnership and collaboration with Municipal water purveyors.

	Continue to focus on retaining and recruiting experienced and professional employees responsible for the Regional Water Supply System engineering, system operation and maintenance, and management of the water supply area.	• Develop a succession plan to ensure key positions are backfilled by experienced and knowledgeable employees, and that system knowledge is preserved.	2018 2019 2020 2021 2022	• Staff hiring is ongoing to replace experienced staff who retire. Cross over training is required for each departing staff member.	
		• In alignment with CRD organizational development initiatives, provide learning and development opportunities for employees.	2018 2019 2020 2021 2022	• Efforts continue to be made to ensure knowledge is carried forward in procedures and practices such as standard operating procedures, emergency response procedures and system drawings to reduce the risk when staff retire. • Staff are required and fully supported to obtain continuing education credits so as to maintain their professional status whether it be as an engineer, technician, operator or other.	

Making a difference...together

RWSC 20-10

REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, OCTOBER 21, 2020

SUBJECT 2019-2022 Water Service Planning

ISSUE SUMMARY

To provide the Regional Water Supply Commission with an overview of relevant initiatives undertaken by the Integrated Water Services department in 2020 and planned for 2021 to deliver on approved Board Priorities and the Corporate Plan.

BACKGROUND

The Capital Regional District (CRD) Board completed its strategic planning early in 2019 and approved the CRD Board Strategic Priorities 2019-2022.

The four priorities are:

1. Community Wellbeing – Transportation & Housing;
2. Climate Action & Environmental Stewardship;
3. First Nations Reconciliation; and
4. Advocacy, Governance & Accountability.

The priorities were confirmed at the annual check-in on May 13, 2020.

The 2019-2022 CRD Corporate Plan is aligned to the Board direction. It highlights the initiatives the CRD needs to deliver over the Board's four-year term to address the region's most important needs. The Corporate Plan identified six initiatives under Water, that fall under the mandate of the various water supply and distribution services.

Appendix A *Community Need Summary - Water 2021* is a summary of the planned activities for 2021. It contains details about core service levels, new initiatives proposed and performance metrics.

Appendix B *Water - Initiatives Progress Report* provides insights into what has been delivered through the initiatives related to the Water Community Need that included in the provisional budget last year, for delivery in 2020. Two of the initiatives (10a-7 Salt Spring Island and Southern Gulf Island Water Operations and 10d-4 SSI Watershed Protection) were approved through the Electoral Areas Community Need Summary as they directly addressed a local need.

The Service Planning process gathered information necessary to assemble a provisional budget for Committee and Board review. The purpose of this report is to explain how the Integrated Water Services divisional program of work connects to the Board Priorities, Corporate Plan and provisional budget.

ALTERNATIVES

Alternative 1

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.

Alternative 2

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

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

IMPLICATIONS

Financial Implications

Initiatives identified in the Corporate Plan (including Board Priorities) cannot be undertaken without resourcing. The Board determines resourcing through its annual review and approval of financial plans. To support the Board's decision-making, staff, through the service planning process, provide recommendations on funding, timing and service levels.

During this years' service planning process, staff have been mindful of the fiscal challenges facing the region in the month ahead. To that end, any budget increase or other impacts have been mitigated, as much as possible.

Service Delivery Implications

The Community Need Summary provides an overview of all work that needs to be undertaken in order to meet our regulatory requirements, satisfy Board direction and meet the needs of the communities we serve.

Alignment with Board & Corporate Priorities

Staff have identified three initiatives that will have budget implications for 2021 (Table 1).

Table 1: Community Needs Summary - Water, Delivery Initiatives

#	Initiative	Description	Year(s)	FTE impacts in 2021	Budget Impacts in 2021
10a-0.1	Watershed Security Position	Create new shift position to respond to security issues and wildfire risk.	2021	1.0 ongoing	Included in provisional budget
10a-2.1	Water Infrastructure Resilience	Review infrastructure redundancy & improvements, renew/replace infrastructure to avoid infrastructure deficits & ensure reliable, safe service delivery & resilience	2020 – 2021	1.0 ongoing	Included in provisional budget
10d-3	Watershed Hydrology Monitoring*	Expand and increase watershed hydrology monitoring in the Greater Victoria Water Supply Area	2020 – 2021		Included in provisional budget

* New – Initiatives not in the 2019-2022 Corporate Plan

Blue highlighted areas are initiatives that directly address a Board Priority.

Delivery Initiatives

10a-0.1 – Watershed Security Position

A core service of the Watershed Protection division is to conduct wildfire and security patrols. Historically, this function has been fulfilled by divisional staff volunteering for shifts and one regular position for which an alternative shift structure was negotiated in 2017 to include weekend patrols. However, year-on-year increases in trespassing and security incidents have made it challenging to ensure adequate watershed security and worker safety is maintained at all times. This initiative would address this challenge and ensure the core operational function of patrolling continues.

The initiative proposes to create one new ongoing position in the division with a focus on security and wildfire (including weekend patrols). This will help ensure an active field security presence seven days a week. The estimated cost of the position in 2021 will be partially offset by a reduction in auxiliary costs which will no longer be required. Recruitment is expected to be complete by Q2 2021.

10a-2.1 – Water Infrastructure Resilience

A combination of system expansion in the Juan de Fuca (JdF) Water Distribution System and aging water infrastructure in JdF and the Regional Water Supply (RWS) system are driving demand for an increase in resources.

The initiative proposes to create one new ongoing position in the Infrastructure Operations division to ensure the continued safe and effective delivery of potable water going forward and to

meet the regulatory requirements related to dam safety. Increasing capacity in the division will also help reduce the risk of higher capital costs in future by facilitating the completion of annual maintenance and inspections for the 14 dams in the RWS.

The cost of the position in 2021 is included in the provisional budgets and will be cost shared between all of the large water services. Recruitment is expected to be completed by Q1 2021.

10d-3 – Watershed Hydrology Monitoring*

There is hydrological and meteorological (hydromet) monitoring in place for the Sooke and Goldstream Water Supply Areas. We also have newly installed instrumentation at Leech Water Supply Area. This equipment is critical to monitor and respond to questions about current and future water quality and supply.

Hydromet monitoring supports the Climate Action & Environmental Stewardship Board Priority by monitoring the environment of the Greater Victoria Water Supply Area and detecting trends and events related to climate and environmental variables (e.g. climate change, forest change, wildfires).

This initiative is to procure the services of a specialist contractor to support the ongoing installation, modification and maintenance of hydromet instruments and collect, quality assure and analyse the data to support hydrological model development and upgrade. The cost for the service contract in 2021 is included in the provisional budget, and is to be renewed annually. The contract was funded through a new single supplementary budget request in 2020.

CONCLUSION

Staff have been progressing initiatives and actions identified in the Corporate Plan, including Board Priorities. The Board determines resourcing through its annual review and approval of financial plans. As per previous years, to support the Board's decision-making, staff are providing recommendations on funding, timing and service levels through the service and financial planning processes.

RECOMMENDATION

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.

Submitted by:	Ted Robbins, B. Sc., C. Tech., General Manager, Integrated Water Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Community Need Summary - Water
Appendix B: Initiatives Progress Report - Water

Community Need

2021 Summary

Water

Strategy

Target Outcome
We envisage a sustainable and resilient water supply

Strategic Context

Strategies

- Regional Water Supply Strategic Plan
- Regional Growth Strategy
- Special Task Force on First Nations Relations
- Statement of Reconciliation

Trends, risks and issues

- **Security and patrols**: there have been an increased number of security incursions/recreational pressure into the Greater Victoria Water Supply Area (GVWSA) from Sooke Hills Wilderness Regional Park and from the rapidly developing residential area around Langford and Goldstream. This is putting additional pressure on the Watershed team.
- **Climate Action**: the most significant risks for water services relate to climate and environmental changes. Predicted trends of drier, hotter summers will impact the water services in a number of ways:
  - Demand for water, including for local agricultural activities, will continue to increase which will in turn increase the risk of water shortages; addressing this challenge will require a continued focus on water conservation effort, watershed protection, ongoing monitoring and awareness of the need for good governance of the water service
  - Water quality may be affected due to increased biological growth in the source water and distribution system; expecting to see increasing pressure to include filtration as a step in the RWS treatment process
  - In the GVWSA, increasing periods of elevated wildfire risk, peak flows from winter storms, drought stress on trees which could lead to increased mortality and forest pests/diseases
  - Increased risk of power outages
- **Infrastructure Vulnerability, resiliency, and Emergency Preparedness**: we are seeing increases in operation and maintenance demand from a growing region combined with aging infrastructure. An

Community Need

2021 Summary

updated Water Management Plan for water supply will identify a strategy to address supply (quantity) and critical delivery infrastructure (redundancy) needs

Services

Core Services Levels	
Service	**Levels**
Regional Water Supply (RWS), Juan de Fuca (JdF) Water Distribution, Saanich Peninsula Water and Small Water Systems in the Electoral Areas Wholesale water supply to the 370,000 consumers in Greater Victoria and residents in three municipalities on the Saanich Peninsula, water distribution system within Langford, Sooke, View Royal, Colwood, East Sooke, Metchosin and Highlands and the small water systems in the Electoral Areas supported through following key service areas:	
Water Systems Operations and Maintenance Water treatment, supply and distribution system operation and monitoring. System and facility maintenance, consumables management and preventative maintenance	• Water treatment • Supply and distribution system operation • System monitoring • Customer service • System and facility maintenance • Consumables management • Component preventative maintenance
Emergency Response/System Failure Water main breaks	• 24/7 emergency response to water main breaks and other system emergencies
Infrastructure Planning Strategic asset management for all services/systems including modeling and capacity analysis,	• Asset management and capital planning • Adjust plans for 15 water services • System expansion and growth planning

Community Need

2021 Summary

vulnerability assessment, infrastructure renewal plans.	
Capital Project Delivery and Works Project design, procurement and delivery of capital projects annually on time/budget. Main installations, dam upgrades, equipment replacement and capital projects support	• Capital program delivery • Water main installations and equipment replacement • Dam maintenance and upgrade projects • Capital project support
Engineering Services Development referrals, survey and mapping, engineering support to utility operations, and dam safety inspections and administration.	• Engineering support of utility operations for the 15 water services.
Watershed Protection Forest land management of the 20,550 hectares of the Greater Victoria Water Supply Area to ensure high-quality source drinking water for the Regional Water Supply System through following service areas:	
Wildfire, Security & Emergency Response: Watershed security, and wildfire and spill preparedness, prevention and response	• 24/7 watershed emergency duty officer standby • Security/wildfire patrols (weekends and holidays; daily during elevated fire conditions) • Wildfire detection air patrol during high and extreme fire hazard
Watershed Operations Silviculture, forest health and forest fuel management; invasive plant management; vegetation management and road maintenance, upgrades and rehabilitation	• Winter/summer road maintenance • Culvert and bridge upgrades to accommodate higher peak flows to higher standards and changing climate • Fuel management treatment and fire smarting maintenance • Brushing around facilities, dams, for tree release • Danger tree assessment and removal along roads and powerlines • Invasive plant management
Resource Planning Wildlife management, ecological inventories and analyses, risk assessment and management, and GIS and data management	• Development of a comprehensive hydrology monitoring program • Annual forest health survey • Partnering in climate change and other research in the GVWSA

Community Need

2021 Summary

	• Management of beaver, Canada geese and bullfrogs • Public tours of the Water Supply Area and facilities
Environmental Protection Regulatory and non-regulatory services and a support role across the organization that focuses on enhanced integration of drinking water quality protection programs and integration of communication initiatives.	
Water Quality Monitoring, assessment, reporting and technical advice to meet water quality regulatory requirements	• Source water and distribution system monitoring, assessment and reporting • Physical, chemical and biological analytical services, assessment and reporting
Demand Management Research and data to inform capital planning, water conservation, and communications and education	• Accurate data • Per capita targets (residential and ICI)
Cross Connection Control Oversight, monitoring and reporting of potential sources of contamination that may flow in a reverse direction into the Regional Water Supply	• Contamination prevention through facility inspections, testing and education for backflow prevention devices • Monitor and track (>28,000) backflow prevention devices
Communications & Environmental Education Public education and engagement in the region to promote sustainable behavior through campaigns, initiatives and services	• Increased public awareness of CRD messages and subsequent behavior changes (declining trend in per capita and per sector water use)
Support Services	
Support Services The core services listed rely on the support of several corporate and support divisions to effectively operate on a daily basis. These services are reported on in the Accountability Community Need Summary.	• Services include Human Resources & Corporate Safety, Corporate Communications, Asset Management, Financial Services, Information Technology & GIS, Information Services, Legislative Services, Facility Management, Fleet Management, Legal Services, Risk & Insurance and Real Estate Services.

Community Need

2021 Summary

Initiatives					
Ref	Initiative	Description	Year(s)	Status	2021 impacts
10a-1	Post-Disaster Water Supply Plan	Implement approved Post-Disaster Water Supply Plan, including undertaking seismic resiliency study of critical water supply infrastructure	2020-2022	In progress (5 resilient supply hydrants installed by year end 2020; 5 hydrants installed and distribution trailers acquired in 2019)	
10a-3	RWSSP Update	Update Regional Water Supply Strategic Plan	2022-2023	In progress (progress report in Oct 2020)	
10d-1	Future Water Supply + Infrastructure	Conduct population & land use studies & estimate growth-related water demand & future water supply & infrastructure needs	2020-2022	In progress (50% complete)	
10a-4	Cross Connection Control (CCC) Inspector*	CCC Program: convert a current temporary CCC Inspector position to permanent to meet the requirements by Island Health and protect the public health	2021	Completed	1.0 Converted
10d-2	Leech River Water Quality Operations*	Water Quality Operations Program: This multi-year initiative is to collect and analyze water quality data from the Leech River Watershed, the future water supply for the Greater Victoria Drinking Water System	2021	In progress (Field sampling began in 2020 and will continue for approximately five years)	0.4 Ongoing

Community Need

2021 Summary

Initiatives					
Ref	Initiative	Description	Year(s)	Status	2021 impacts
10a-0.1	Watershed Security Position	Create new shift position to respond to security issues and wildfire.	2021	NEW	1.0 ongoing
10a-2.1	Water Infrastructure Resilience	Review infrastructure redundancy & improvements, renew/replace infrastructure to avoid infrastructure deficits & ensure reliable, safe service delivery & resilience	2020-2021	NEW additional request for 2021	1.0 ongoing
10d-3	Watershed Hydrology Monitoring*	Expand and increase watershed hydrology monitoring in the Greater Victoria Water Supply Area	2020-2021	NEW additional request for 2021	

*New – Initiatives not in the 2019-2022 Corporate Plan

Initiative approved in prior years which have now been delivered or absorbed in Core Services:

- 10a-5 – Water Billing
- 10a-7 – Salt Spring Island + Southern Gulf Islands Water Operations
- 10b-1 – Water Conservation through Demand Management
- 10c-1 – Agricultural Water Subsidy
- 10d-4 – SSI Watershed Protection

Community Need

2021 Summary

Business Model

Funding

Who contributes

Water Supply and Distribution:

- Regional Water Supply: All Municipalities, JDF EA, First Nations (via Distribution Systems)
- Saanich Peninsula Water Supply: Municipalities (Central Saanich, North Saanich, Sidney)
- JDF Water Distribution: Langford, Colwood, View Royal, Metchosin, Highlands, Sooke, JDF EA
- Local Water Service Areas in the Electoral Areas

Environmental Protection

- Water Quality Service: Allocation from Integrated Water Services and Local Service Areas (LSA) from municipalities of RWS area, JDF and various local service areas, Sidney, North Saanich, Central Saanich and Peninsula First Nations
- Demand Management, Cross Connection Control Services: water rate from all Municipalities and Electoral Areas
- Communications and Environmental Education: all Municipalities and Electoral Areas

Support Services

- Varies per service

Funding Sources

- **Regional Water Supply**: Bulk water sales revenue
- JdF Water Distribution System: Retail water sales revenue in West Shore Municipalities
- **Saanich Peninsula Water**: Wholesale water sales revenue
- **Environmental Protection services**: water rate and requisition

Reporting Structure

Regional Water Supply Commission – Water Advisory Committee – Saanich Peninsula Water Commission – JDF Water Distribution Commission

– Various LSA Commissions (Port Renfrew, Lyall Harbour/Boot Cove, Magic Lake Estates, Skana, Beddis, Cedar Lane, Cedars of Tuam, Fernwood, Fulford, Highland, Sticks Allison, Surfside Park, Wilderness Mountain)

Community Need

2021 Summary

Community Need Key Performance Indicator (KPI)

Discussion

Link to Target Outcome

The following KPIs link to the CRD's goals of safe, sustainable and resilient water resources for the Capital Region. These KPIs are being established with new performance targets that will be reported in future service plans.

- Compliance with Island Health, provincial and federal regulatory requirements and operational certificates
- Water quality samples analyzed from source reservoirs (raw water) and transmission/distribution systems (treated water)
- Peak day per capita water use and average day per capita water use
- Operating cost per megaliter of drinking water treated and supplied/distributed
- Energy use per megalitre of drinking water treated and supplied/distributed
- Delivery of annual capital program
- Volume of raw water released from RWS watersheds to rivers to support fish habitat
- Number of water quality complaints
- Number of leak repairs annually per kilometer of pipe (distribution systems)
- Number of water main failures annually per kilometer of pipe (distribution systems)

Community Need

Initiative Progress Report

Water

Initiatives approved in 2020 Budget		
Ref	**Initiative**	**Progress to date**
10a-1	Post-Disaster Water Supply Plan	Progressing – Continued implementation of resilient infrastructure including hardened hydrants and restrained pipe, as well as acquisition of emergency distribution supplies. Additional education and coordination with municipal distributors and emergency services planned for 2021
10a-2	Water Infrastructure Resilience	Progressing – Infrastructure renewal programs continue with appropriate funding levels; recruitment of new staffing approved in 2020 complete
10a-3	RWSSP Update	Progressing – making progress on strategic plan initiatives; progress report will be presented to RWSC in October 2020
10a-4	Cross Connection Control Inspector *	**Part of core service** – position converted from term to ongoing, continues to be part of day-to-day operations
10a-5	Water Billing *	Progressing – recruitment of new staff underway
10a-7	SSI + SGI Water Operations *	**On-going - Core service delivery**
10b-1	Water Conservation through Demand Management	**Part of core service** - updated Water Conservation Bylaw in 2020. Demand Management work progressing – per capita demand rates being developed for each sector.
10c-1	Agricultural Water Subsidy	Agricultural land use inventory and agricultural water demand model completed and presented to Commissions in 2020. Agricultural water rate review will be completed in 2021.
10d-1	Future Water Supply + Infrastructure	Regional Water Master Plan Update will be completed in 2021 with a focus on long term water supply and infrastructure.
10d-2	Leech River Water Quality Operations *	**Progressing** – sampling underway
10d-3	Watershed Monitoring*	**Progressing** – Hydromet station maintenance, upgrade and discharge measurement contracts have been executed, work is in progress.

Community Need

Initiative Progress Report

Initiatives approved in 2020 Budget		
Ref	**Initiative**	**Progress to date**
10d-4	SSI Watershed Protection *	**Progressing** – Subject to the recommendations from the water optimization study examining challenges in operating multiple water distribution and treatment systems on an unincorporated island electoral area.

* New - Initiatives not in the 2019-2022 Corporate Plan

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RWSC 20-09

REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, OCTOBER 21, 2020

SUBJECT **Regional Water Supply Service - 2021 Operating and Capital Budget**

ISSUE SUMMARY

To provide an overview of the draft 2021 Regional Water Supply Service budget, highlighting the changes from the 2020 budget and the proposed 2021 budget figures. The report generally follows the information provided in the attached draft budget document (Appendix A).

BACKGROUND

The draft 2021 Regional Water Supply Service budget has been prepared for the Regional Water Supply Commission's (Commission) consideration. The Commission will make budget recommendations to the Capital Regional District (CRD) Board in order to establish the wholesale water rate and approve the rate by year end through adopting a rate bylaw. As in previous years, the draft 2021 Regional Water Supply Service budget has been prepared considering the CRD Board's 2021 service planning and financial expectations, which include identifying opportunities to realign or reallocate resources and seek potential synergies or efficiencies between departments and services, reviewing service levels and adjustments related to regulatory compliance, undertaking infrastructure improvements and upgrades to maintain service levels within the region including incremental ongoing operational and maintenance requirements. The following sets out the key components of the budget.

2020 Year End Financial Projections

Year end revenue and expenditure projections have been established and estimated variances are summarized as follows:

Budget Item	Variance ($)	Variance (%)
Supply System operating expenditures	-$719,914	-4.9%
Agricultural water rate funding	$0	0%
Capital fund transfers	$130,239	1.4%
Debt servicing - principal and interest expenditures	$0	0%
Revenue	-$589,675	-1.7%

The lower than budgeted operating expenditures were primarily due to labour costs associated with delays/deferrals of filling new staff positions and backfilling vacant staff positions during the early phase of the pandemic. The revenue shortfall is explained later in the report.

2021 Budget

Rate Base

The rate base for 2021 has increased by $1,585,880 from 2020. This increase relates to physical plant additions, including the final capitalization of the Japan Gulch (Goldstream) Treatment Plant upgrades and the Lubbe Dam improvements. The changes in physical plant and work in progress are listed on page 4 of the budget document and are used to project the 2020 year end total physical plant value and determine the 2021 rate base.

Revenue Requirement

The revenue requirement for 2021 has increased by $862,755. This is resulting from an increase in operational expenses of $786,079, an increase in depreciation expenses of $450,776, net of expired depreciation on existing assets, offset by a decrease in the return on the rate base of $374,100. Although the asset base continues to grow, the decrease in the return on the rate base for 2021 occurs due to lower debt levels in the service.

Operating Budget

The 2021 operating budget reflects an inflationary increase in non-discretionary expenses such as negotiated wage/salary increases, departmental support service allocation increases, and other operating expense adjustments such as chemical and electricity costs. The net core 2021 operating budget increase is $122,083, plus additional budget requests for one-time and on-going expenditures in the amounts of $275,000 and $289,000 respectively. These requests are summarized as follows:

- $25,000 one-time funding (year four of five) to support the on-going National Science and Engineering Research Council (NSERC) watershed research
- $150,000 one-time funding for field sampling/consulting services to establish baseline water quality and hydrology data in the Leech River
- $100,000 one-time funding for the agricultural water rate review and options study
- $55,000 labour budget increase for 0.4 FTE (full time equivalent staff position) – water sampling technician to support Leech River and supplementary North Basin to establish baseline water quality data
- $190,000 labour budget increase for 1.0 FTE – water operator position, necessary to support increasing confined space entry and dam safety requirements
- $44,000 labour budget increase for 1.0 FTE – (net budget adjustment after a $81,000 decrease in auxiliary labour budget) watershed security position, necessary to provide regular scheduled wildfire and security patrols on alternate shift (including weekends and holidays), replacing auxiliary patrol shifts

The budgets for drinking water quality sampling, testing and reporting, as well as the cross connection control and demand management programs for the Regional Water Supply Service are included in the overall operating budget.

Operating budget forecasts for 2022-2025 have been presented for information.

Capital Budget

There are a number of capital projects planned for 2021 with a total value of $22,748,350, including $11,861,350 in carry forward projects, most of which are in-stream, multi-year projects such as the Butchart Dam No. 5 project with a $2,900,000 budget carried forward from 2020, which has been delayed due to the delay in the completion of the Lubbe Dam No. 4 project. Approximately $4,000,000 in dam safety related capital work is on-going including instrumentation integration and upgrades. There is also $1,570,000 in projects cost-shared with the Juan de Fuca Water Distribution Service (pages 10-54 of the budget document). The major projects in 2021 aside from the carry forward projects include replacing the gatehouse at the Goldstream entrance to the water supply area, bulk supply meter replacements at the Alderley, Holland and Maplewood chambers, and catchment land acquisition.

A five year capital plan has been presented for information. The value of the five-year (2021-2025) capital plan is currently $124,828,350, plus $3,860,000 in projects cost-shared with the Juan de Fuca Water Distribution Service. A significant portion of the capital plan budget is attributed to the project to replace vulnerable sections of the No. 4 Transmission Main. As the Commission is aware, an application has been submitted under Infrastructure Canada's Disaster Mitigation and Adaptation Fund, which if successful, would provide approximately $23,600,000 (Regional Water Supply Service share) in grant funding towards this project; the application also included Saanich Peninsula Water Service and First Nations funding components. If the project proceeds, financing will be required in order to fund the service's funding share and a new loan authorization would be required in 2021. If unsuccessful, staff will be seeking a capital plan amendment in 2021 and continue with a phased approach to the No. 4 Transmission Main replacement, beginning with the Goldstream Avenue segment.

Other major projects over the next five years include replacement of segments of the No. 3 Transmission Main, construction of a new watershed field operations centre, replacement of the ultraviolet disinfection units at the Japan Gulch (Goldstream) facility, and the potential need for a pH adjustment facility.

Capital and Debt Expenditures

The 2021 capital expenditures will be partially funded through a transfer to the water capital fund budgeted at $9,297,180, with the balance funded existing cash reserves and borrowed funds and new debt. See pages 9-10 of the budget document for the funding source summary. 2021 debt expenditures for existing and new debt servicing are budgeted to be $8,333,667. Debt servicing expenditures will decrease by $129,537 over 2020.

The last loan that could be borrowed under the current loan authorization was undertaken in 2018; the loan authorization is now expired. The loan authorization was for $12,500,000, but only $9,500,000 was borrowed as the balance was funded through budgeted capital contributions and water sales revenue surpluses over the past five years. The upcoming debt retirements on existing borrowings are summarized as follows:

Loan Number	Retirement Date	Loan Amount
LA3419-103	April 2023	$7,000,000
LA3451-103	April 2023	$60,000,000
LA3419-104	November 2023	$8,000,000
LA3419-105	June 2024	$9,000,000
LA3419-106	October 2024	$1,000,000
LA3661-112	October 2025	$6,500,000
LA3661-116	April 2026	$1,500,000
LA3661-118	April 2027	$4,500,000
LA3661-124	April 2028	$1,700,000
LA3902-131	April 2030	$3,000,000
LA3902-137	April 2031	$1,500,000
LA3902-145	April 2033	$5,000,000

A new loan authorization in the amount of $46,000,000 is proposed to allow continued partial funding of the five year capital plan. The loan authorization bylaw and approval process is addressed under a separate staff report. The long term debt obligations are summarized on the attached graphs (Appendix B).

The recently incurred debt and proposed future debt will change the funding make-up of the capital plan. When assessing key financial health indicators, the service maintains an affordable level of debt over the next five years. The percentage of revenue dedicated to debt costs is forecast to be between 14-24%, which is less than an annual benchmark rate of 25%, albeit close to the upper recommended limit until the Leech Water Supply Area land acquisition debt is retired in 2023. The debt funding for capital investment is around 50% for two of the next five years. This allows the potential to leverage grant funding to address Transmission Main replacements as noted previously, while three other larger loans are retired between 2023-2025. A summary indicator table is provided below:

Year	% Revenue for Debt	Capital Funded by Debt
2021	23.9%	7.9%
2022	24.3%	52.5%
2023	24.2%	49.4%
2024	13.5%	34.5%
2025	15.4%	0.0%

A $297,540 transfer to the vehicle/equipment replacement fund is planned in 2021. The reserve fund balance is estimated at $2,049,161 at year end 2020 (See reserve schedule – Page 55 of the budget document).

Agricultural Water Rate Funding

The total budget for the agricultural water rate funding has been increased by $100,000 to $1,600,000. The 2021 agricultural water rate has been maintained at the 2020 rate of $0.2105

per cubic metre. The Regional Water Supply agricultural water rate budget funds the difference between the municipal retail water rate and the CRD agricultural water rate. As directed by the Commission, an agricultural water rate review and options study is planned for 2021. A summary of the agricultural water volumes and agricultural water rate payments for 2011 to 2019 is attached for information (Appendix C).

Water Demand

Although total water demand across the Region has generally continued to increase year over year recently due to the continued rate of development and growth, the total 2020 year end demand is projected to be 47,100,000 cubic metres which is 900,000 cubic metres under budget.

The cooler than normal temperatures and above average precipitation in June (140% of the monthly average precipitation), did significantly affect total daily demand in June which can often be a high demand month. In addition, staff have analyzed the impact of the COVID-19 pandemic on local water demand, particularly across the residential and business sectors. Overall, the Regional Water Supply System experienced a net reduction of 6% in total water demand over the March – August 2020 period compared to the previous three year average over the same period. This equates to a reduction in consumption of 624,000 cubic metres of water across the Region for these six months alone. At the Regional level, May demand was down 12.9% and June demand was down 17.7% compared to 2019 demand. These reductions are primarily tied to school, office, restaurant and hotel closures, and virtually no tourism. In summary, the pandemic health directives and public response have had a negative impact on water demand across all water service areas.

The recommended 2021 water rate has been calculated using a budget demand of 48,000,000 cubic metres (Page 6 of the budget document), which is the same volume used in the 2020 budget.

Proposed 2021 Wholesale Water Rate

The recommended wholesale water rate has taken into consideration the revenue required to meet operating and capital expenditures, including debt obligations and the budget demand volume established for 2021. The proposed 2021 wholesale rate is $0.7148 per cubic metre, a 2.58% increase over the 2020 rate. The increase in annual bulk water cost for the average household using 235 cubic metres per year would be $4.23 (Page 7 of the budget document).

Wholesale Water Rate History and Projection

The wholesale water rate history and projection is attached (Appendix D). The rates may be adjusted in the future to reflect actual revenue and expenditure circumstances and water demand volumes.

ALTERNATIVES

Alternative 1
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.

Alternative 2
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 as amended;
2. Approve the 2021 wholesale water rate as amended (amended rate);
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.

IMPLICATIONS

If the proposed budget is amended, the implications could vary depending on how the budget is amended and the impact on specific initiatives (i.e. new initiatives), on-going operations, or the capital work program. 'One-time' reductions in reserve fund contributions could be considered by the Commission to help mitigate the budget and rate increases, but additional capital financing could result in the longer term. Staff have not recommended amending the agricultural water rate based on previous Commission direction and the rate review planned for 2021. Any changes in the recommended wholesale water rate would have to be incorporated in the Juan de Fuca Water Distribution Service and Saanich Peninsula Water Service budgets and rates; both service Commissions have approved their proposed 2021 budgets and rates.

CONCLUSION

The draft 2021 Regional Water Supply Service budget has been prepared for the Regional Water Supply Commission's consideration. The budget has been prepared considering the Commission and CRD Board's 2021 service planning and financial expectations. A proposed increase in operating and capital funding combined with a conservative revenue budget, is resulting in a recommended wholesale water rate of $0.7148, a 2.58% increase over the 2020 rate.

RECOMMENDATION

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.

Submitted by:	Ted Robbins, B.Sc., C.Tech., General Manager, Integrated Water Services
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Nelson Chan, MBA, CPA, CMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

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

CAPITAL REGIONAL DISTRICT

2021 BUDGET

Regional Water Supply

COMMISSION REVIEW

OCTOBER 2020

Service: 2.670 Regional Water Supply **Commission: Regional Water Supply**

DEFINITION:

To finance, install, operate and maintain a water supply local service in the Capital Regional District, as per the Water Supply Local Service Establishment Bylaw No. 2537.

The establishment and operation of a Regional Water Supply Commission is done by Bylaw No. 2539.

SERVICE DESCRIPTION:

Regional Water Supply is responsible for the water supply, treatment and transmission system for the Greater Victoria region, providing wholesale water to municipalities that operate municipal distribution systems. The service administration and operation is provided by the Integrated Water Services Department.

PARTICIPATION:

City of Victoria	Town of Sidney	District of Metchosin
District of Oak Bay	District of North Saanich	District of Sooke
District of Saanich	Town of View Royal	Juan de Fuca Electoral Area
Township of Esquimalt	City of Colwood	District of Highlands
District of Central Saanich	City of Langford	

MAXIMUM LEVY:

No stated limit in establishment bylaw and no ability to requisition.

MAXIMUM CAPITAL DEBT:

Authorized:	$137,700,000	Pre - (Consolidated MFA Loan Authorizations - Regional Water Supply Water Works Facilities)
Borrowed:	$91,400,000	Pre - (Consolidated amounts borrowed - Regional Water Supply Water Works Facilities)
Expired:	$46,300,000	
Authorized:	$60,000,000	(MFA Bylaw No. 3451 - Regional Water Supply Land Acquisition)
Borrowed:	$60,000,000	(MFA Bylaw No. 3451 - Regional Water Supply Land Acquisition)
Authorized:	$12,500,000	2014 - (MFA Bylaw No. 3902 - Regional Water Supply Water Works Facilities)
Borrowed:	$9,500,000	
Expired:	$3,000,000	

FUNDING:

Costs are recovered through the sale of bulk water.

Rate Base for 2021 Revenue Year

	2019 Application	2020 Application	End of 2020 for '21 Applic.	Change	
Wholesale System					
Physical Plant	$ 232,755,867	$ 231,437,695	$ 231,156,835	$ (280,860)	Note 1
Construction Work In Progress	4,667,513	6,285,937	8,055,763	1,769,827	Note 1
Cash Working Capital	1,840,531	1,991,738	2,088,652	96,914	
Inventory	225,000	225,000	225,000	-	
Total Wholesale Rate Base	$ 239,488,911	$ 239,940,370	**$ 241,526,250**	$ 1,585,880	

Note 1: Refer to the Schedule of Change in Physical Plant & work in Progress for details.

Revenue Requirements for 2021 Year

	2019 Application	2020 Application	2021 Application	Change	
Wholesale					
Operations & maintenance	$ 14,928,749	$ 16,155,207	$ 16,941,286	$ 786,079	
Depreciation	6,207,713	6,243,311	6,694,087	$ 450,776	
Return on rate base	10,948,000	11,626,400	11,252,300	$ (374,100)	Note 1
Subtotal of above	$ 32,084,462	$ 34,024,918	$ 34,887,673	$ 862,755	
Non-rate revenue including unaccounted water revenue	(582,060)	(582,060)	(582,060)	$ -	
Total wholesale	$ 31,502,402	$ 33,442,858	$ 34,305,613	$ 862,755	

Note 1: Return on rate base is calculated with reference to the long term Canada bond rate & the average debt rate.

Schedule of Change in Physical Plant & Work In Progress

Wholesale

Projected Asset Additions	Projected Assets Capitalized
Japan Gulch Treatment Plant Upgrades	$ 3,135,023
Lubbe Dam Safety Improvements	2,952,346
Kapoor Tunnel Repairs	500,000
Dam Actuators	373,497
Goldream River Bridge Replacement	324,736
Watershed Culvert Replacement	315,000
Water Supply Eqpt Upgrades	270,000
Sooke Dam Safety Improvements	200,000
Gravel Crushing	200,000
Reservoir Log Boom Replacement	200,000
Post Disaster Emergency Water Supply	200,000
Dam Improvements	180,000
Major Main Repairs	170,000
Stelly's Pump Station Assessment	158,843
Sooke Spillway Gate Standby Power	150,000
Meter Replacement	109,432
Building Modification	101,799
SCDA Repairs and Equipment Replacement	100,000
Valve Chamber Uprgrades	100,000
Leech River Restoration	95,000
Computer upgrades	85,000
Parkdale Meter Decomissioning	80,000
Leech Tunnel Intake Stop Log Replacement	75,763
Generator for Pump Station	75,000
Forrest Fuel Management Roads	75,000
Leech Watershed Lake Assessment	75,000
Meter Station Backflow Installation	70,000
Transmission System Component Replacement	65,000
SRR Disinfection Facility component upgrades	64,163
Cathodic Protection Program	52,161
Humpback Overflow Channel Assessment	48,000
Other Projects (24 minor projects under $50k)	503,754
Total projected assets capitalized	$ 11,104,516
Less: current years depreciation	(6,162,783)
Less: change in prior year forecast addition estimates, & disposals.	(5,222,593)
Change in Physical Plant	$ (280,860)

Projected Construction Work In Progress (CWIP)

Sooke Intake Screens Condition Assessment/Replacement	$ 2,936,485
Meter Replacement	497,289
Butchart Dam #5 Remediation	479,963
Post Disaster Emergency Water Supply	466,609
Sooke Dam Safety Improvements	435,246
Weeks Lake Pit Assessment	302,858
SCDA Repairs and Equipment Replacement	280,112
Dam Safety Review	251,833
Lab Information Management System	200,000
Strategic Asset Management Plan	169,249
Wildlife Habitat Assessment	125,984
Water Quality Main Lab Renovation	117,469
Dam Decommissioning	107,839
Cathodic Protection Program	105,360
Critical Equip Storage Building	103,146
Hydraulic Capacity Assessment	100,058
High Level Output Valve Replacement	100,000
Large Equipment Storage	95,250
Leech River Restoration	95,000
Dam Emergency Plan & Manual Updates	83,541
Asset Reconciliation/Transfer agreement study	77,708
Transmission system component upgrades	76,191
Supply System Vulnerability Assessment	75,464
Goldstream Field Operations Centre	75,000
Watershed Facilities Upgrade	62,392
Leech River Hydromet	55,427
Main No.3 Replacement	53,765
Water Quality Database Upgrade	52,022
Other Projects (25 minor projects under $50k)	474,503
Projected CWIP	$ 8,055,763
Less Prior years projected CWIP	(6,285,937)
Change in CWIP	$ 1,769,827

Change in Budget 2020 to 2021 **Service: 2.670 Regional Water Supply**	**Total Expenditure**	**Comments**
2020 Budget	**34,055,398**	
Change in Salaries:		
Change in Labour	188,241	Labour charges (Salaries and overhead, including corporate allocations)
0.4 FTE Water Sampling Technician	55,000	IBC 10d-2 Leech River Water Quality Operations
1.0 FTE Water Utility Operator	190,000	IBC 10a-2.1 Water Infrastructure Resilience
1.0 FTE Watershed Operator	125,000	IBC 10a-0.1 Watershed Security Position
Auxiliary staff	(81,000)	Reduction in auxiliary budget to offset 1.0 FTE Watershed Operator IBC 10a-0.1
Total Change in Salaries	477,241	
Other Changes:		
Contract for Services	(25,000)	2020 NSERC funding
Contract for Services	25,000	2021 NSERC funding
Contract for Services	(150,000)	IBC 10d-3 2020 Watershed Hydrology Monitoring
Contract for Services	150,000	IBC 10d-3 2021 Watershed Hydrology Monitoring
Contract for Services	100,000	Agricultural Water Rate Review and Options Study
Chemical Supplies	145,257	
Transfer to Capital Fund	209,342	
Principal & Interest Payments	(129,537)	
Agriculture Water Rate Funding	100,000	
Other Costs	(36,418)	
Total Other Changes	388,644	
2021 Budget	**34,921,283**	
% expense increase from 2020:	***2.5%***	
% Requisition increase from 2020 (if applicable):	***n/a***	*Requisition funding is (x)% of service revenue*

SAP

Overall 2020 Budget Performance
(expected variance to budget and surplus treatment)

There is a one time favourable operating variance of $720,000 (4.9%) due to reduced staffing costs from vacant positions, reduced overtime, and reduced Demand Management allocation. Revenue has decreased by $590,000 (1.7%) from budget due to lower than budgeted water sales. The net surplus of $130,000 will be transferred to the services' Water Capital Fund.

2021 Demand Estimate

Wholesale Demand

Years	Actual Demand cu.metre	Budgeted Demand cu.metre
2016	47,602,170	43,152,000
2017	46,515,000	45,000,000
2018	48,300,036	45,000,000
2019	47,734,121	46,500,000
2020	47,100,000*	48,000,000

2021 Demand Estimate **48,000,000**

** Projected consumption for 2020*

Summary of Wholesale Water Rates

	2017	2018	2019	2020	2021	Change
Wholesale water rate						
Unit cost per cu.m.	$0.6375	$0.6644	$0.6775	$0.6968	$0.7148	$0.0180

Wholesale Water Rate Increase
Impact on Residential Water Bill

Average Annual Consumption : 235.0 cubic metres

Charge for Twelve Months Consumption		Annual Charge	2020 Annual Change $
Average Consumption	2020 Year	$ 163.75	
	2021	$ 167.98	$ 4.23
Half Average Consumption	2020 Year	$ 81.87	
	2021	$ 83.99	$ 2.12
Twice Average Consumption	2020 Year	$ 327.50	
	2021	$ 335.96	$ 8.46

CAPITAL REGIONAL DISTRICT

Program Group: CRD-Regional Water Supply

SUMMARY

1	2020 BOARD BUDGET 2	2020 ESTIMATED ACTUAL 3	2021 BUDGET REQUEST: 2021 CORE BUDGET 4	2021 ONGOING 5	2021 ONE-TIME 6	TOTAL (COL 4, 5 & 6) 7	FUTURE PROJECTIONS: 2022 8	2023 9	2024 10	2025 11
GENERAL PROGRAM EXPENDITURES:										
WATERSHED PROTECTION	5,458,878	5,179,839	5,349,054	44,000	175,000	5,568,054	5,500,915	5,610,933	5,723,152	5,837,615
WATER MANAGEMENT	5,223,517	5,075,428	5,420,530	190,000	-	5,610,530	5,711,860	5,827,345	5,944,992	6,054,070
WATER QUALITY	1,611,591	1,634,545	1,775,256	55,000	-	1,830,256	1,843,700	1,882,386	1,921,900	1,962,233
CROSS CONNECTION	744,787	740,854	737,690	-	-	737,690	752,465	767,519	782,865	798,503
DEMAND MANAGEMENT	813,710	673,034	686,034	-	-	686,034	694,708	708,581	722,745	737,187
INFRASTRUCTURE ENGINEERING	494,110	491,110	486,900	-	-	486,900	496,640	506,570	516,710	527,040
FLEET OPERATION & MAINTENANCE	(299,295)	(287,024)	(297,540)	-	-	(297,540)	(303,491)	(309,561)	(315,751)	(322,067)
CUSTOMER TECHNICAL SERVICES & GM SUPPORT *	607,905	427,503	619,362	-	100,000	719,362	624,871	637,936	651,275	656,063
TOTAL OPERATING EXPENDITURES	14,655,203	13,935,289	14,777,286	289,000	275,000	15,341,286	15,321,669	15,631,708	15,947,888	16,250,644
Percentage increase over prior year's board budget			0.83%			4.68%	-0.13%	2.02%	2.02%	1.90%
AGRICULTURAL WATER RATE FUNDING	1,500,000	1,500,000	1,600,000	-	-	1,600,000	1,650,000	1,700,000	1,750,000	1,800,000
			6.67%			6.67%	3.13%	3.03%	2.94%	2.86%
CAPITAL EXPENDITURES &TRANSFERS										
TRANSFER TO WATER CAPITAL FUND	9,107,214	9,237,453	9,297,180	-	-	9,297,180	9,500,000	10,200,000	14,652,000	15,873,204
TRANSFER TO EQUIPMENT REPLACEMENT FUND	299,294	299,294	297,540	-	-	297,540	303,491	309,561	315,751	322,066
TRANSFER TO DEBT RESERVE FUND	30,480	30,480	51,610	-	-	51,610	192,610	205,610	264,610	33,610
TOTAL CAPITAL EXPENDITURES & TRANSFERS	9,436,988	9,567,227	9,646,330	-	-	9,646,330	9,996,101	10,715,171	15,232,361	16,228,880
DEBT										
DEBT - INTEREST AND PRINCIPAL	8,463,204	8,463,204	8,333,667	-	-	8,333,667	8,658,848	8,944,560	5,152,302	5,196,255
TOTAL DEBT EXPENDITURES	8,463,204	8,463,204	8,333,667	-	-	8,333,667	8,658,848	8,944,560	5,152,302	5,196,255
DEFICIT TRANSFERRED TO FOLLOWING YR										
TRANSFER TO FOLLOWING YEAR DEFICIT CARRY FORWARD										
TOTAL EXPENDITURES	34,055,395	33,465,720	34,357,283	289,000	275,000	34,921,283	35,626,618	36,991,439	38,082,551	39,475,779
SOURCES OF FUNDING										
REVENUE - SALES	(33,442,855)	(32,819,280)	(33,741,613)	(289,000)	(275,000)	(34,305,613)	(35,010,948)	(36,375,769)	(37,466,881)	(38,860,109)
REVENUE - OTHER	(612,540)	(646,440)	(615,670)	-	-	(615,670)	(615,670)	(615,670)	(615,670)	(615,670)
TOTAL SOURCE OF FUNDING FROM OPERATIONS	(34,055,395)	(33,465,720)	(34,357,283)	(289,000)	(275,000)	(34,921,283)	(35,626,618)	(36,991,439)	(38,082,551)	(39,475,779)
TRANSFER FROM PRIOR YEAR	-	-	-	-	-	-	-	-	-	-
TRANSFER TO FOLLOWING YEAR SURPLUS CARRY FORWARD										
TOTAL SOURCES OF FUNDING	(34,055,395)	(33,465,720)	(34,357,283)	(289,000)	(275,000)	(34,921,283)	(35,626,618)	(36,991,439)	(38,082,551)	(39,475,779)
Percentage increase over prior year's board budget			0.89%			2.54%	2.02%	3.83%	2.95%	3.66%

CAPITAL REGIONAL DISTRICT

FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2021 to 2025

Service No.	2.670 Regional Water Supply	Carry Forward from 2020	2021	2022	2023	2024	2025	TOTAL
EXPENDITURE								
Buildings		$410,000	$400,000	$2,155,000	$2,130,000	$0	$0	$4,685,000
Equipment		$2,360,000	$3,965,000	$5,295,000	$2,635,000	$895,000	$705,000	$13,495,000
Land		$275,350	$1,615,350	$845,000	$730,000	$500,000	$400,000	$4,090,350
Engineered Structures		$8,648,000	$16,248,000	$21,775,000	$29,025,000	$30,500,000	$3,450,000	$100,998,000
Vehicles		$168,000	$520,000	$215,000	$265,000	$280,000	$280,000	$1,560,000
		$11,861,350	**$22,748,350**	**$30,285,000**	**$34,785,000**	**$32,175,000**	**$4,835,000**	**$124,828,350**
SOURCE OF FUNDS								
Capital Funds on Hand		$11,773,350	$19,438,350	$8,970,000	$9,720,000	$11,795,000	$3,955,000	$53,878,350
Debenture Debt (New Debt Only)		$0	$1,800,000	$15,900,000	$17,200,000	$11,100,000	$0	$46,000,000
Equipment Replacement Fund		$88,000	$310,000	$215,000	$265,000	$280,000	$280,000	$1,350,000
Grants (Federal, Provincial)		$0	$1,200,000	$5,200,000	$7,600,000	$9,000,000	$600,000	$23,600,000
Donations / Third Party Funding		$0	$0	$0	$0	$0	$0	$0
Reserve Fund		$0	$0	$0	$0	$0	$0	$0
		$11,861,350	**$22,748,350**	**$30,285,000**	**$34,785,000**	**$32,175,000**	**$4,835,000**	**$124,828,350**

CAPITAL REGIONAL DISTRICT

FIVE YEAR CAPITAL EXPENDITURE PLAN SUMMARY - 2021 to 2025

Service No.	2.670/2.680 Regional Water Supply & JDF Water Distribution Combo	Carry Forward from 2020	2021	2022	2023	2024	2025	TOTAL
EXPENDITURE								
Buildings		$0	$80,000	$80,000	$80,000	$80,000	$80,000	$400,000
Equipment		$500,000	$1,490,000	$980,000	$330,000	$330,000	$330,000	$3,460,000
Land		$0	$0	$0	$0	$0	$0	$0
Engineered Structures		$0	$0	$0	$0	$0	$0	$0
Vehicles		$0	$0	$0	$0	$0	$0	$0
		$500,000	**$1,570,000**	**$1,060,000**	**$410,000**	**$410,000**	**$410,000**	**$3,860,000**
SOURCE OF FUNDS								
Capital Funds on Hand		$500,000	$1,570,000	$1,060,000	$410,000	$410,000	$410,000	$3,860,000
Debenture Debt (New Debt Only)		$0	$0	$0	$0	$0	$0	$0
Equipment Replacement Fund		$0	$0	$0	$0	$0	$0	$0
Grants (Federal, Provincial)		$0	$0	$0	$0	$0	$0	$0
Donations / Third Party Funding		$0	$0	$0	$0	$0	$0	$0
Reserve Fund		$0	$0	$0	$0	$0	$0	$0
		$500,000	**$1,570,000**	**$1,060,000**	**$410,000**	**$410,000**	**$410,000**	**$3,860,000**

CAPITAL REGIONAL DISTRICT CAPITAL PLAN

CAPITAL BUDGET FORM
2021 & Forecast 2022 to 2025

Service #: 2.670

Service Name: Regional Water Supply

Proj. No.
The first two digits represent first year the project was in the capital plan.

Capital Exp. Type
Study - Expenditure for feasibility and business case report.
New - Expenditure for new asset only
Renewal - Expenditure upgrades an existing asset and extends the service ability or enhances technology in delivering that service
Replacement - Expenditure replaces an existing asset

Funding Source Codes
Debt = Debenture Debt (new debt only)
ERF = Equipment Replacement Fund
Grant = Grants (Federal, Provincial)
Cap = Capital Funds on Hand
Other = Donations / Third Party Funding

Funding Source Codes (con't)
Res = Reserve Fund
STLoan = Short Term Loans
WU - Water Utility

Asset Class
L - Land
S - Engineering Structure
B - Buildings
V - Vehicles
E - Equipment

Capital Project Title
Input Title of Project. For example "Asset Name - Roof Replacement", "Main Water Pipe Replacement".

Capital Project Description
Briefly describe project scope and service benefits.
For example: *"Full Roof Replacement of a 40 year old roof above the swimming pool area; The new roofing system is built current energy standards, designed to minimize maintenance and have an expected service life of 35 years".*

Total Project Budget
This column represents the total project budget not only within the 5-year window.

FINANCIAL PLAN

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Proj Budget	Asset Class	Funding Source	C/F from 2020	2021	2022	2023	2024	2025	5 - Year Total
WATERSHED PROTECTION													
WATERSHED PROTECTION													
Planning													
17-01	Renewal	Repair of Historic Goldstream Powerhouse Building	Repairs of historic Goldstream Powerhouse building	$90,000	B	WU	$0	$0	$0	$50,000	$0	$0	$50,000
17-04	New	Water Supply Area - Fish Stream Assessments	Inventory and assessment of fish, fish habitat, and stream channel stability in priority streams in the GVWSA.	$325,000	L	WU	$93,350	$93,350	$0	$0	$0	$0	$93,350
18-01	New	Post-Wildfire Debris Flow Modelling	Site specific modelling of the potential impact to Sooke Lake Reservoir and infrastructure of a significant wildfire in the Sooke WSA.	$150,000	L	WU	$55,000	$55,000	$0	$0	$0	$0	$55,000
18-10	Study	Species-at-Risk Wildlife Habitat	An assessment (office and field) and plan for managing wildlife habitat, in particular species-at-risk habitat, in the GVWSA.	$135,000	L	WU	$0	$25,000	$0	$0	$0	$0	$25,000
19-30	Study	Leech WSA Lakes/Tributaries Assessment	An assessment of the physical, chemical and biological parameters of the lakes in the Leech WSA.	$75,000	L	WU	$20,000	$20,000	$0	$0	$0	$0	$20,000
20-05	Renewal	Leech WSA Terrestrial Ecosystem Mapping & Wetland Classification/Mapping	Classification and mapping of terrestrial ecosystems and wetlands and integration with Sooke and Goldstream data.	$180,000	L	WU	$0	**$0**	**$180,000**	$0	$0	$0	$180,000
20-06	Study	Addressing mining in Leech WSA (impacts, agreements)	Funding to support work to reduce the impact of mining claims in the Leech WSA	$30,000	L	WU	$15,000	$30,000	$0	$0	$0	$0	$30,000
20-27	Study	GVWSA Forest Resilience - wildfire/forest modelling and forest management field trials	Modelling forest and wildfire risk under climate change scenarios & forest/fuel management field trials.	$260,000	L	WU	$0	$85,000	$70,000	$50,000	$0	$0	$205,000
20-28	Study	GVWSA Forest Resilience - Assessments of forest health and resilience	Field assessments to better understand current forest health and resilience.	$230,000	L	WU	$75,000	$75,000	**$95,000**	**$60,000**	$0	$0	$230,000
21-19	**Study**	**Lakes Assessment Sooke and Goldstream WSAs**	**An assessment of the physical, chemical and biological parameters of the natural lakes in Sooke and Goldstream WSAs**	**$75,000**	**L**	WU	**$0**	**$75,000**	**$0**	**$0**	**$0**	**$0**	**$75,000**
21-20	**Study**	**West Leech Road**	**Plan for future construction of a road to access the western portion of the Leech WSA.**	**$20,000**	L	WU	**$0**	**$20,000**	**$0**	**$0**	**$0**	**$0**	**$20,000**
22-03	Study	GVWSA Land Exchange/Acquisition	Land surveys, appraisals to support decisions regarding land exchange to increase catchment area or buffer water supply areas.	$300,000	L	WU	$0	$0	$100,000	$100,000	$100,000	$0	$300,000

23-02	Renewal	GVWSA LiDAR Mapping	Detailed contour mapping of ground, vegetation and tree cover (3D scanning)	$120,000	L	WU	$0	$0	$0	$120,000	$0	$0	$120,000
Capital													
09-01	Renewal	Leech River Watershed Restoration	A 17 year project to restore the Leech WSA lands for water supply.	$5,756,000	L	WU	$0	$200,000	$200,000	$200,000	$200,000	**$200,000**	$1,000,000
16-01	Renewal	Replace Gatehouse at Goldstream Entrance	The GVWSA entry gatehouse at Goldstream is past end of life and is to be replaced with a purpose built structure with improved vehicle flow and security oversight.	**$600,000**	B	WU	$190,000	**$395,000**	**$200,000**	$0	$0	$0	$595,000
16-06	Renewal	Goldstream IWS Field Office	Renewal of Water Quality field office, lab and equipment and supplies storage and Watershed Protection office, training, emergency response, storage and interpretation space at Goldstream entrance, replacing temporary trailers.	$4,050,000	B	WU	$215,000	$0	**$1,915,000**	**$2,000,000**	$0	$0	$3,915,000
17-02	New	Leech River HydroMet System	Installation of a network of hydrometeorological stations to collect water quantity and quality information for the Leech WSA.	$480,000	E	WU	$100,000	$125,000	$0	$0	$0	$0	$125,000
17-06	New	Weeks Lake Area Environmental Assessment and Remediation	Assessment and remediation of the Weeks Lake gravel pit (lead from firearms) and Weeks Lake (metals and hydrocarbons from dumping).	$365,000	L	WU	$17,000	$67,000	$0	$0	$0	$0	$67,000
17-09	Renewal	Goldstream Gate Upgrade	The main entrance autogate in Goldstream is past end of life and requires replacement with lifting in/out gates along with project 16-01.	$75,000	S	WU	$68,000	$68,000	$0	$0	$0	$0	$68,000
18-05	New	GVWSA Forest Fuel Management/FireSmart Activities	Implementation of forest fuel management and FireSmart actions in strategic locations for wildfire risk management in the GVWSA.	$750,000	L	WU	$0	$100,000	$100,000	$100,000	$100,000	**$100,000**	$500,000
18-11	New	Large Equipment Storage (Field Operations Centre)	Two additional bays are to be added to the existing fire/spill equipment warehouse at the FOC to shelter large water supply infrastructure equipment.	$100,000	B	WU	$5,000	$5,000	$0	$0	$0	$0	$5,000
19-02	New	Whiskey Creek Bridge Replacement (Sooke WSA)	Replacement of the existing undersized bridge with a longer and higher concrete structure.	$300,000	S	WU	$0	$0	$0	**$300,000**	$0	$0	$300,000
19-19	New	Hydromet Upgrades Sooke and Goldstream	Install additional hydrology monitoring sites on Sooke Lake Reservoir inflow streams and increase instrumentation on meteorological stations in Sooke and Goldstream watersheds.	$170,000	E	WU	$140,000	$140,000	$0	$0	$0	$0	$140,000
20-01	Replacement	Kapoor Main Mile 1 Bridge and Asphalt Upgrade	Replacement of the existing undersized culvert with a large bridge as well as nearby asphalt repair or replacement.	$450,000	S	WU	$0	$0	**$450,000**	$0	$0	$0	$450,000
20-29	Renewal	Gravel crushing 14G and 10S quarry (Sooke and Goldstream WSA)	Production of gravel at existing quarries in Sooke and Goldstream WSAs.	**$350,000**	S	WU	$0	**$150,000**	$0	$0	$0	$0	$150,000
21-01	New	31N Bridge to Replace Undersized Culvert (Goldstream WSA)	Replacement of the existing undersized and failing culvert with a bridge structure.	**$325,000**	S	WU	$0	**$325,000**	$0	$0	$0	$0	$325,000
21-26	**New**	**Road Deactivation/Rehabilitation in the GVWSA**	**Deactivate or rehabilitate unneeded roads in the Sooke and Goldstream WSAs.**	**$420,000**	L	WU	**$0**	**$20,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$420,000**
21-27	**New**	**Autogate Installations on Primary Access Routes**	**Install autogates on the main access routes where the Sooke Hills Wilderness Trail and E&N rail line cross to improve security**	**$250,000**	S	WU	**$0**	**$250,000**	**$0**	**$0**	**$0**	**$0**	**$250,000**
21-28	**New**	**GVWSA Land Acquisition Priorities**	**Acquisition of priority GVWSA catchment and buffer lands.**	**$750,000**	L	WU	**$0**	**$750,000**	**$0**	**$0**	**$0**	**$0**	**$750,000**
22-02	New	Muckpile Bridge Supply and Install (Deception)	Replacement of undersized culverts with bridge which will allow for fish and western toad migration.	$325,000	S	WU	$0	$0	$0	$0	**$325,000**	$0	$325,000
23-03	New	Air curtain burner for fuel management	A transportable burner that provides more effective and rapid burning of woody debris with reduced smoke emissions.	**$40,000**	E	WU	$0	**$40,000**	$0	$0	$0	$0	$40,000
23-04	Renewal	17S/Sooke Main Bridge Replacement	Undersized bridge replacement	$300,000	S	WU	$0	$0	$0	$0	$0	**$300,000**	$300,000
24-01	Renewal	6M/Judge Creek Culvert Replacement (Sooke WSA)	Undersized culvert replacement	$200,000	S	WU	$0	$0	$0	$0	$200,000	$0	$200,000
WaterShed Protection Sub-Total				**$18,046,000**			**$993,350**	**$3,113,350**	**$3,410,000**	**$3,080,000**	**$1,025,000**	**$700,000**	**$11,328,350**

INFRASTRUCTURE ENGINEERING AND OPERATIONS												
Planning												
16-10	New	Post Disaster Emergency Water Supply	Identify and procure emergency systems for post disaster preparedness.	$1,300,000	S	WU	$0	$200,000	$200,000	$200,000	$200,000	**$200,000**	$1,000,000
17-13	New	Asset Management Plan	Development of a plan to inform future areas of study and highlight critical infrastructure improvements.	**$300,000**	S	WU	$100,000	**$200,000**	$0	$0	$0	$0	$200,000
19-04	New	Seismic Assessment of Critical Facilities	Identified as a priority from Strategic Plan, a seismic assessment of critical facilities and a supply system resilience feasibility study will be undertaken.	$255,000	S	WU	$55,000	$255,000	$0	$0	$0	$0	$255,000
19-15	New	Hydraulic Capacity Assessment and Transient Pressure Analysis	Determine the existing level-of-service for the RWSC transmission system and conduct a transient pressure analysis	$300,000	S	WU	$0	$150,000	$0	$0	$0	$0	$150,000
19-28	Study	Goldstream System Hydraulic Analysis	Analysis and documentation of hydraulics of the Goldstream system.	$50,000	S	WU	$50,000	$50,000	$0	$0	$0	$0	$50,000
20-02	New	Supply System Resilience Feasibility Study	Identified as a priority from the Strategic Plan, a study of water supply system's resilience and high level measures to make important assets resilient will be undertaken	$200,000	S	WU	$100,000	$100,000	$0	$0	$0	$0	$100,000
20-07	Study	Deep Northern Intake & Transmission Pipeline Study	A technical and business case analysis will be carried out with possible expansion and filtration study upstream of the head tank - this is to replace 2016-09	$250,000	S	WU	$200,000	$200,000	$0	$0	$0	$0	$200,000
20-08	Study	Regional Water DCC Program	Design of a Regional DCC Program	$200,000	S	WU	$150,000	$150,000	$0	$0	$0	$0	$150,000
20-10	Study	Condition & Vulnerability Assessment	Conduct a condition assessment of critical supply infrastructure and assess its possibility of risk.	$200,000	S	WU	$200,000	$200,000	$0	$0	$0	$0	$200,000
20-11	Study	Develop Master Plan	Develop a long term strategic plan to anticipate water demand, water treatment, and future siting of facilities.	$500,000	S	WU	$0	$400,000	$0	$0	$0	$0	$400,000
21-05	Study	Level of Service Agreement	From #19-15 & #20-11, develop level-of-service agreements for participating municipalities to address hydraulic capacity of infrastructure.	$150,000	S	WU	$0	$150,000	$0	$0	$0	$0	**$150,000**
Capital													
15-03	Renewal	Sooke Intake Screens Condition Assessment & Replacement	Renewal of the aging Sooke Intake Tower and equipment to maintain water supply.	**$2,205,000**	S	WU	$200,000	$200,000	$0	$0	$0	$0	$200,000
18-07	New	Replacement of UV System	Replacement of the UV system at the Goldstream Water Treatment Plant	$5,400,000	E	WU	$0	**$400,000**	**$3,000,000**	**$1,800,000**	$0	$0	$5,200,000
18-08	Replacement	Bulk Supply Meter Replacement Program	Planned replacement of aging bulk meter replacement based upon a condition assessment and water audit.	$2,200,000	E	WU	$450,000	$450,000	**$200,000**	**$200,000**	**$200,000**	**$150,000**	$1,200,000
18-15	Renewal	Corrosion Protection Program	Study deficiencies in the current material protection and implement recommendations.	**$750,000**	S	WU	$0	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	**$750,000**
18-18	Replacement	Main No.3 Segment Replacement	Replacement of segments of Main No. 3 based upon previous studies.	$15,090,000	S	WU	$100,000	$350,000	$4,900,000	$4,900,000	$4,900,000	$0	$15,050,000
19-05	Renewal	Repairs - Kapoor Shutdown	Repair items such as defects in the Kapoor tunnel, replacement of critical valves, intake exterior inspection and actuator replacement while the Kapoor tunnel is shutdown.	$500,000	S	WU	$100,000	$100,000	$0	$0	**$100,000**	$0	**$200,000**
19-23	New	Critical Spare Equipment Storage & Pipe Yard	Plan, design and construct a critical equipment storage building.	$400,000	S	WU	$300,000	$300,000	$0	$0	$0	$0	$300,000
20-13	New	Electrical Isolation Audit	Inspection audit of facilities to ensure that there is sufficient electrical separation and isolation for safety.	$50,000	S	WU	$20,000	$20,000	$0	$0	$0	$0	**$20,000**
20-16	Replacement	Cecelia Meter Replacement	Replacement of the Cecelia billing meter as well as its enclosure.	$1,000,000	S	WU	$0	**$100,000**	**$450,000**	**$450,000**	$0	$0	$1,000,000
20-17	Replacement	Decommission Smith Hill Site	Plan and decommission the abandoned Smith Hill reservoir site.	$650,000	S	WU	$0	$0	**$150,000**	$0	**$500,000**	$0	$650,000
20-18	Replacement	Goldstream Main #4 Replacement	Plan and replacement of the concrete pipe portion of Main #4.	$200,000	S	WU	$150,000	$150,000	$0	$0	$0	$0	$150,000
20-32	New	pH Adjustment Facility	Design and construct a pH adjustment facility based upon the results of the pH and corrosion study.	$2,500,000	S	WU	$0	$0	**$500,000**	**$2,000,000**	$0	$0	$2,500,000
20-33	**Replacement**	**Sooke Intake Screens Replacement**	Emergency replacement of the Sooke Intake screens.	**$1,800,000**	**E**	**WU**	**$800,000**	**$800,000**	$0	$0	$0	$0	$800,000
21-06	**Replacement**	**Sooke Lake Dam Spillway Hoist Replacement**	**Replacement of the sluice gate spillway hoist at Sooke Lake Dam.**	**$275,000**	**E**	**WU**	$0	**$75,000**	**$200,000**	$0	$0	$0	**$275,000**

21-07	**Replacement**	**Goldstream Water Treatment Plant Communications Upgrade**	**Increase reliability and resilience of data and voice communications between the UV Plant, Sodium Hypochlorite Building, Ammonia Building.**	**$250,000**	**S**	**WU**	$0	**$250,000**	$0	$0	$0	$0	**$250,000**
21-08	**New**	**Goldstream Water Treatment Plant Emergency Automation**	**Installation of automatic valves and controls to safeguard chemicals in the event of dosing line breaks**	**$145,000**	**E**	**WU**	$0	**$145,000**	$0	$0	$0	$0	**$145,000**
21-09	**New**	**Goldstream Water Treatment Plant Demolition**	**Plan and construct provisions demolition.**	**$200,000**	**S**	**WU**	$0	**$200,000**	$0	$0	$0	$0	**$200,000**
21-10	**Replacement**	**SCADA Upgrades**	**Update the SCADA Master Plan in conjunction with the Juan de Fuca Water Distribution, Saanich Peninsula Water and Wastewater, and Core Area Wastewater Services.**	**$650,000**	**E**	**WU**	$0	**$200,000**	**$450,000**	$0	$0	$0	**$650,000**
21-11	**Replacement**	**RWS Supply Main No. 4 Upgrade**	**Upgrade vulnerable sections of the RWS Supply Main No. 4 to a resilient system to better able to withstand a seismic event. Vulnerable sections are Concrete Cylinder pipe material which is susceptible to failure during a seismic event. This is part of partially grant funded project partnered with the Saanich Peninsula Water system.**	**$35,400,000**	**S**	**WU**	$0	**$1,800,000**	**$7,800,000**	**$11,400,000**	**$13,500,000**	**$900,000**	**$35,400,000**
21-11	**Replacement**	**RWS Supply Main No. 4 Upgrade**	**Upgrade vulnerable sections of the RWS Supply Main No. 4 to a resilient system to better able to withstand a seismic event. Vulnerable sections are Concrete Cylinder pipe material which is susceptible to failure during a seismic event. This is part of partially grant funded project partnered with the Saanich Peninsula Water system.**	**$23,600,000**	**S**	**Grant**	$0	**$1,200,000**	**$5,200,000**	**$7,600,000**	**$9,000,000**	**$600,000**	**$23,600,000**
21-12	**New**	**SRRDF Upgrade**	**Increased water flows in the Sooke region have resulted in an additional sodium hypochlorite dosing pump and automation for summer flows.**	**$75,000**	**E**	**WU**	$0	**$75,000**	$0	$0	$0	$0	**$75,000**
Sub-Total Infrastructure Engineering and Operations				**$97,045,000**			**$2,975,000**	**$9,020,000**	**$23,200,000**	**$28,700,000**	**$28,550,000**	**$2,000,000**	**$91,470,000**
DAM SAFETY PROGRAM			Database)										
16-16	Renewal	Implications from Goldstream Dam Safety Review	Conduct dam improvements at the Goldstream dams that resulted for the Dam Safety Review and routine inspections (refer to the Dam Safety Database).	$705,000	S	WU	$300,000	$300,000	$75,000	$75,000	$75,000	$0	$525,000
16-17	Renewal	Butchart Dam No. 5 Remediation	Phase 1 Rehabilitation (grouting) of Butchart Dam No. 5 and planning for Phase 2.	$3,550,000	S	WU	$2,900,000	**$2,900,000**	$0	$0	$0	$0	$2,900,000
17-25	Renewal	Implications from Sooke Lake Dam Safety Review	Conduct dam improvments at the Sookel Lake Dam that resulted from the Dam Safety Review and routine inspections (refer to the Dam Safety Database)	$1,350,000	S	WU	$900,000	$900,000	$0	$0	**$0**	**$0**	$900,000
18-19	New	Sooke Lake Dam - Instrumentation System Improvements	Complete dam performance instrumentation system/surveillance improvements for the Sooke Lake Dam.	$1,300,000	S	WU	$700,000	$900,000	$100,000	$100,000	$100,000	$0	$1,200,000
18-20	New	Sooke Lake Dam - Breach Risk Reduction Measures	Implement measures to reduce Sooke Lake Dam breach implications in the unlikely event of dam failure (refer to the NHC Consulting study).	$600,000	S	WU	$500,000	$500,000	$0	$0	$0	$0	$500,000
19-07	New	Integrate Dam Performance and Hydromet to SCADA	Integrate the dam safety instrumentation/surveillance (i.e. piezometers and weirs) and HydroMet stations to report to WIO through the existing SCADA system.	$1,100,000	E	WU	$500,000	$500,000	$500,000	$0	$0	$0	$1,000,000
19-08	New	Charters Dam Decommissioning	Charters Dam has been retired from drinking water service, no other interested owners, plan to decommission.	**$450,000**	S	WU	$100,000	$100,000	**$200,000**	$0	$0	$0	$300,000
19-09	New	Cabin Pond Dams Decommissioning	The Cabin Pond Dams (x2) have been retired from drinking water service, plan to decommission.	$600,000	S	WU	$600,000	$600,000	**$0**	$0	$0	$0	$600,000
19-12	New	Goldstream Dams Instrumentation Improvements	Conduct dam safety instrumentation/surveillance improvements (refer to report from Thurber Engineering).	$600,000	S	WU	$500,000	$500,000	$0	$0	$0	$0	$500,000

19-13	New	Dam Safety Instrumentation - Hydromet	The existing dam safety instrumentation/surveillance equipment is getting older and will need to be replaced/rehabilitated (does not include pending SCADA effort).	$250,000	E	WU	$50,000	$100,000	$50,000	$50,000	$50,000	$0	$250,000
20-19	Replacement	Goldstream System High Level Outlet Valve Replacements	The Goldstream and Butchart high level outlet valves have been identified as requiring replacement.	$200,000	S	WU	$100,000	$100,000	$0	$0	$0	$0	$100,000
20-20	Replacement	Saddle Dam Piezometer Installation	Dam safety instrumentation/surveillance installations (i.e. piezometers) are required to monitor the Saddle Dam to monitor the performance of Saddle Dam and for future stability assessments.	$250,000	S	WU	$0	**$125,000**	$0	$0	$0	$0	$125,000
21-03	New	Deception Dam - Dam Safety Review 2021 & Improvements	Conduct a Dam Safety Review and some improvements for the Deception Dam.	$300,000	S	WU	$100,000	$200,000	$100,000	$0	$0	$0	$300,000
21-04	New	Saddle Dam - Dam Safety Review 2021 & Improvements	Conduct a Dam Safety Review and some improvements for the Saddle Dam.	$200,000	S	WU	$100,000	$200,000	$0	$0	$0	$0	$200,000
21-21	**Replacement**	**Goldstream Dams - Gate Improvements**	**logistics planning in 2021, installation in 2022**	**$150,000**	**S**	**WU**	$0	**$50,000**	**$100,000**	$0	$0	$0	$150,000
21-22	**Study**	**Charters Dam - Dam Safety Review 2021**	**Legislated obligation to conduct Dam Safety Review, contingent on outcome of the Decommissioning plan and DSO expectations (relates to Item 19-08)**	**$250,000**	**S**	**WU**	$0	**$150,000**	**$100,000**	$0	$0	$0	$250,000
22-08	**New**	**Deception Dam Surveillance Improvements**	**Replace and supplement the Dam Safety Instrumentation at Deception Dam.**	**$450,000**	**S**	**WU**	$0	$0	**$150,000**	**$300,000**	$0	$0	$450,000
23-01	New	Sooke Lake Dam Update Seismic Assessment	Conduct a seismic assessment of the Sooke Lake Dam as per the previous Dam Safety Reiviews.	$150,000	E	WU	$0	$0	$150,000	**$0**	$0	$0	$150,000
23-07	**New**	**Sooke Lake Dam Seismic Retrofits**	**Detail and construct seismic retrofits for the existing structures initially focusing on the spillway and gates structures.**	**$450,000**	**S**	WU	$0	$0	$0	**$150,000**	**$300,000**	$0	$450,000
23-08	**Study**	**Regional Watershed Dams – Flood Forecasting System**	**Update the existing flood forecasting system (WD4Cast) to a modern version including Standard Operating Procedures and training for staff.**	**$300,000**	**S**	**WU**	$0	$0	$0	**$150,000**	**$150,000**	$0	$300,000
23-09	**Study**	**Sooke Lake Dam - Dam Safety Review 2023**	**Conduct a Dam Safety Review**	**$200,000**	**S**	**WU**	$0	$0	$0	**$200,000**	$0	$0	$200,000
25-01	**Study**	**Goldstream Dams - Dam Safety Review 2025**	**Conduct a Dam Safety Review**	**$150,000**	**S**	**WU**	$0	$0	$0	$0	$0	**$150,000**	$150,000
25-02	**Study**	**Probable Maximum Flood and Inflow Design Flood Updates**	**Update the previous edition from 2015 (recommended 10 year review cycle).**	**$150,000**	**S**	**WU**	$0	$0	$0	$0	$0	**$150,000**	$150,000
Sub-Total Dam Safety Program				**$13,705,000**			**$7,350,000**	**$8,125,000**	**$1,525,000**	**$1,025,000**	**$675,000**	**$300,000**	**$11,650,000**
WATER QUALITY													
19-29	Study	Leech River Water Quality Monitoring	Monitor water quality from the Leech River for 2 years	$100,000	S	WU	$15,000	$15,000	$0	$0	$0	$0	$15,000
20-03	Study	Leech River Watershed - Implications for Supply Management	Review data of Leech Monitoring Project and report on implications of adding Leech to water supply	$40,000	S	WU	$40,000	$40,000	$0	$0	$0	$0	$40,000
20-04	New	Sooke Lake HyDy Model Development	Critical data collection, model building+calibration, model utilization for 3 different scenarios	$340,000	E	WU	$320,000	$80,000	$180,000	$30,000	$30,000	$0	$320,000
21-13	**New**	**Flowcam Imaging System**	**Utilize semi-automated algal analysis to meet increased demands without increasing FTEs**	**$150,000**	**E**	**WU**	$0	**$140,000**	**$10,000**	$0	$0	$0	**$150,000**
21-14	**Renewal**	**Sooke Lake Sampling Boat Repair**	**Refurbishment of structural boat parts (floor)**	**$10,000**	**E**	**WU**	$0	**$10,000**	$0	$0	$0	$0	**$10,000**
21-29	**Renewal**	**Microbiological plate pourer**	**Automation of manual process to increase capacity/worker safety**	**$30,000**	**E**	**WU**	$0	**$30,000**	$0	$0	$0	$0	**$30,000**
22-05	**New**	**WQ Lab Capital Improvements**	**Building improvements in the lab**	**$40,000**	**B**	**WU**	$0	$0	**$40,000**	$0	$0	$0	**$40,000**
22-06	**Study**	**Sooke Lake Food Web Study**	**Assess the aquatic food web structure and create an inventory of fish and invertebrate species and distribution in Sooke Lake Reservoir - to be used as indicators of stream health**	**$100,000**	**S**	**WU**	$0	$0	**$100,000**	$0	$0	$0	**$100,000**
22-07	**Study**	**Bulk-Water Connection Backflow Protection Study**	**Investigate all bulk-water connections to CRD or municipal systems and identify the need for backflow protection**	**$50,000**	**S**	**WU**	$0	$0	**$50,000**	$0	$0	$0	**$50,000**
23-05	**Renewal**	**Renovation of Samplers Hut (2955 Sooke Lk Road)**	**Building exterior paint, roof, gutters, flooring, bathroom**	**$80,000**	**B**	**WU**	$0	$0	$0	**$80,000**	$0	$0	**$80,000**

23-06	**Study**	**GVDWS Nitrification Study**	**Investigate nitrification occurrence and potential impacts on drinking water quality**	**$50,000**	**S**	**WU**	$0	$0	$0	**$50,000**	$0	$0	**$50,000**
24-02	**Replacement**	**Boat Motor Replacement with Electric Outboards (Sooke and Goldstream Boats)**	**50hp and 15hp motor replacement due to age and water quality concerns, large electric outboards are already available from Torqeedo for instance**	**$60,000**	**E**	**WU**	$0	$0	$0	$0	**$60,000**	$0	**$60,000**
Water Quality Sub-Total				**$1,050,000**			**$375,000**	**$315,000**	**$380,000**	**$160,000**	**$90,000**	**$0**	**$945,000**
ANNUAL PROVISIONAL													
17-27	Replacement	Watershed Bridge and Culvert Replacement	Replacement of small culverts and bridges throughout the GVWSA.	$1,000,000	S	WU	$0	$200,000	$200,000	$200,000	$200,000	**$200,000**	$1,000,000
17-28	Replacement	Watershed Security Infrastructure Upgrade and Replacement	New, upgrade and replacement of security infrastructure in the GVWSA.	$425,000	E	WU	$0	**$85,000**	**$85,000**	**$85,000**	**$85,000**	**$85,000**	$425,000
17-29	Replacement	Water Supply Area Equipment Replacement	**Hydrometeorological, fireweather and wildfire suppression equipment replacement.**	$650,000	E	WU	**$0**	**$130,000**	**$130,000**	**$130,000**	**$130,000**	**$130,000**	$650,000
17-30	Replacement	Transmission Main Repairs	Emergency repairs to the transmission mains.	$1,000,000	S	WU	$0	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	$1,000,000
17-31	Replacement	Transmission System Components Replacement	Replacement and repair of transmission components.	$400,000	S	WU	$0	$80,000	$80,000	$80,000	$80,000	**$80,000**	$400,000
17-33	Replacement	Disinfection Equipment Parts Replacement	Replacement of incidental equipment and parts associated with the disinfection system.	$600,000	E	WU	$0	$120,000	$120,000	$120,000	$120,000	**$120,000**	$600,000
17-34	Renewal	Supply System Computer Model Update	Annual update of the regional hydraulic model.	$100,000	S	WU	$0	**$20,000**	**$20,000**	**$20,000**	**$20,000**	**$20,000**	$100,000
19-16	Replacement	Dam Improvements	Items not covered by Dam Safety Reviews, but brought up in Dam Safety Inspections and Dam Safety Reviews	$1,300,000	S	WU	$0	**$250,000**	**$250,000**	**$250,000**	**$250,000**	**$250,000**	$1,250,000
19-22	Replacement	SCADA Repairs & Equipment Replacement	Items not covered by the SCADA Replacement and SCADA Master Plan, but integral in maintaining the SCADA System and revenue meter system.	**$750,000**	E	WU	$0	**$250,000**	**$150,000**	**$150,000**	**$150,000**	**$150,000**	$850,000
21-15	**Replacement**	**Corrosion Protection**	**Replace corrosion protection assets, such as coatings, for the transmission system when identified.**	**$250,000**	**S**	**WU**	$0	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$250,000**
21-16	**Replacement**	**Valve Chamber Upgrades**	**Replace failing valves and appurtenances along the RWS supply system.**	**$1,000,000**	**S**	**WU**	$0	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$200,000**	**$1,000,000**
21-17	**Replacement**	**Water Quality Equipment Replacement**	**Replacement of water quality equipment for the water quality lab and water quality operations**	**$250,000**	**E**	**WU**	$0	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$50,000**	**$250,000**
21-18	**Renewal**	**LIMS support**	**Support for LIMS database**	**$100,000**	**E**	**WU**	$0	**$20,000**	**$20,000**	**$20,000**	**$20,000**	**$20,000**	**$100,000**
Annual Provisional Sub-Total				**$7,825,000**			**$0**	**$1,655,000**	**$1,555,000**	**$1,555,000**	**$1,555,000**	**$1,555,000**	**$7,875,000**
CUSTOMER AND TECHNICAL SERVICES													
17-35	Replacement	Vehicle & Equipment Replacement (Funding from Replacement Fund)	This is for replacement of vehicles and equipment used by CRD Water Services for the day-to-day operation and maintenance of the supply system.	$2,495,000	V	ERF	$88,000	$310,000	$215,000	$265,000	$280,000	$280,000	$1,350,000
20-22	New	Vehicle for the Dam Safety Program	New pick up	$35,000	V	WU	$35,000	**$35,000**	$0	$0	$0	$0	$35,000
20-23	New	Vehicle for the CSE Support Program	New Transit Van	$45,000	V	WU	$45,000	**$45,000**	$0	$0	$0	$0	$45,000
21-30	**New**	**Vehicle for Warehouse Operations**	**New pick up**	**$35,000**	**V**	**WU**		**$35,000**	**$0**	**$0**	**$0**	**$0**	**$35,000**
21-24	**Replacement**	**ATV with Tracks (replace Gator)**	**Vehicle to access weather stations during snow conditions**	**$20,000**	**V**	**WU**	**$0**	**$20,000**	$0	$0	$0	$0	**$20,000**
21-25	**Replacement**	**UV Plant Safety Audit and Equipment Replacement**	**Carry out an audit of the occupied office area of the UV Plant and carry out upgrades**	**$75,000**	**V**	**WU**	**$0**	**$75,000**	$0	$0	$0	$0	**$75,000**
Customer and Technical Services Sub-Total				**$2,705,000**			**$168,000**	**$520,000**	**$215,000**	**$265,000**	**$280,000**	**$280,000**	**$1,560,000**
			GRAND TOTAL	**$140,376,000**			**$11,861,350**	**$22,748,350**	**$30,285,000**	**$34,785,000**	**$32,175,000**	**$4,835,000**	**$124,828,350**

CAPITAL REGIONAL DISTRICT CAPITAL PLAN

CAPITAL BUDGET FORM
2021 & Forecast 2022 to 2025

Service #: 2.670/2.680
Service Name: Regional Water Supply & JDF Water Distribution Combo

Proj. No.
The first two digits represent first year the project was in the capital plan.

Capital Exp. Type
Study - Expenditure for feasibility and business case report.
New - Expenditure for new asset only
Renewal - Expenditure upgrades an existing asset and extends the service ability or enhances technology in delivering that service
Replacement - Expenditure replaces an existing asset

Funding Source Codes
Debt = Debenture Debt (new debt only)
ERF = Equipment Replacement Fund
Grant = Grants (Federal, Provincial)
Cap = Capital Funds on Hand
Other = Donations / Third Party Funding

Funding Source Codes (con't)
Res = Reserve Fund
STLoan = Short Term Loans
WU - Water Utility

Asset Class
L - Land
S - Engineering Structure
B - Buildings
V - Vehicles

Capital Project Title
Input Title of Project. For example "Asset Name - Roof Replacement", "Main Water Pipe Replacement".

Capital Project Description
Briefly describe project scope and service benefits.
For example: *"Full Roof Replacement of a 40 year old roof above the swimming pool area; The new roofing system is built current energy standards, designed to minimize maintenance and have an expected service life of 35 years".*

Total Project Budget
This column represents the total project budget not only within the 5-year window.

FIVE YEAR FINANCIAL PLAN

Proj. No.	Capital Exp.Type	Capital Project Title	Capital Project Description	Total Proj Budget	Asset Class	Funding Source	C/F from 2020	2021	2022	2023	2024	2025	5 - Year Total
SYSTEM REPLACEMENT AND UPGRADES THAT BENEFIT REGIONAL WATER SUPPLY AND JUAN DE FUCA DISTRIBUTION													$0
16-01	Renewal	Upgrades to Buildings at 479 Island Highway	Maintenance and changes to buildings and office layouts.	$400,000	B	WU	$0	$80,000	$80,000	$80,000	$80,000	**$80,000**	$400,000
17-01	Renewal	Voice Radio Upgrade	Replacement of end of life voice radio system repeaters, office, vehicle and handheld radios.	**$1,560,000**	E	WU	$0	**$640,000**	**$650,000**	$0	$0	$0	$1,290,000
20-01	New	Portable Pump Station	Portable pump station to provide backup when a pump station is offline, in construction or to bypass a section of pipe.	$500,000	E	WU	$500,000	$500,000	$0	$0	$0	$0	$500,000
21-01	**New**	**Storage Container for vehicle and equipment Tires**	**Tires removed from vehicles are stored on site outside of the Fleet office. They need to be stored in a more safe and secured area.**	**$20,000**	**E**	**WU**	**$0**	**$20,000**	**$0**	**$0**	**$0**	**$0**	**$20,000**
Sub-Total System Replacement and Upgrades That Benefit Regional Water Supply and Juan de Fuca Distribution				$2,480,000			$500,000	$1,240,000	$730,000	$80,000	$80,000	$80,000	$2,210,000
ANNUAL PROVISIONAL CAPITAL ITEMS													
17-03	Replacement	Office Equipment, Upgrades and Replacements	Upgrade and replacement of office equipment as required.	$225,000	E	WU	$0	$45,000	$45,000	$45,000	$45,000	**$45,000**	$225,000
17-04	Replacement	Computer Upgrades	Annual upgrade and replacement program for computers, copiers, printers, network equipment as required.	$850,000	E	WU	$0	$170,000	$170,000	$170,000	$170,000	**$170,000**	$850,000
17-05	New	Development of the Maintenance Management Systems	Develop maintenance management system.	$100,000	E	WU	$0	$20,000	$20,000	$20,000	$20,000	**$20,000**	$100,000
17-06	Replacement	Small Equipment & Tool Replacement (Water Operations)	Replacement of tools and small equipment for Water Operations as required.	$400,000	E	WU	$0	$80,000	$80,000	$80,000	$80,000	**$80,000**	$400,000
17-07	Replacement	Small Equipment & Tool Replacement (Corporate Fleet)	Replacement of tools and small equipment for Fleet as required.	$75,000	E	WU	$0	$15,000	$15,000	$15,000	$15,000	**$15,000**	$75,000
Sub-Total for Annual Provisional Capital Items				$ 1,650,000			$ -	$ 330,000	$ 330,000	$ 330,000	$ 330,000	$ 330,000	$1,650,000
			GRAND TOTAL	**$4,130,000**			**$500,000**	**$1,570,000**	**$1,060,000**	**$410,000**	**$410,000**	**$410,000**	**$3,860,000**

Service: 2.670 Regional Water Supply

Proj. No.	17-01	**Capital Project Title**	Repair of Historic Goldstream Powerhouse Building	**Capital Project Description**	Repairs of historic Goldstream Powerhouse building
Asset Class	B	**Board Priority Area**	No Alignment	**Corporate Priority Area**	No Alignment

Project Rationale *Located near the Japan Gulch Treatment Plant and the Great Trail (Trans Canada Trail), is an 1897 brick hydroelectric powerplant that served Victoria (notably the streetcars) for approx. 60 years. The Powerhouse has its own Wikipedia entry: http://en.wikipedia.org/wiki/Lubbe_Powerhouse and has captured public interest as a unique structure in BC history. An engineering condition assessment including engineered drawings, site plan and approximate cost of repairs was conducted in 2017. A major repair in the masonry on the north side of the building was completed in 2018. Funds are required in 2019 ($10,000) to repair a smaller hole in the masonry on the south side. Funds to repair the roof envelope ($50,000) are planned for 2023. Grant funding opportunities to conserve the building and its history will continue to be sought.*

Proj. No.	17-04	**Capital Project Title**	Water Supply Area - Fish Stream Assessments	**Capital Project Description**	Inventory and assessment of fish, fish habitat, and stream channel stability in priority streams in the GVWSA.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Presence or absence of fish as well as fish habitat information has only been collected in the Water Supply Areas on an as-needed basis related to specific road projects. In order to adequately plan and manage for fish habitat and water quality a systematic inventory and assessment of fish habitat, stream channel stability, and the hydrological condition of stream corridors will be conducted over three field seasons. The funding for 2019 is insufficient to conduct fish stream assessments in the entire Leech Water Supply Area. An additional $100,000 in 2020 will allow for fish stream surveys to be carried out in the western and northern portions of the Leech which cannot be completed in 2019.*

Proj. No.	18-01	**Capital Project Title**	Post-Wildfire Debris Flow Modelling	**Capital Project Description**	Site specific modelling of the potential impact to Sooke Lake Reservoir and infrastructure of a significant wildfire in the Sooke WSA.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Erosion and debris flows from areas burned by wildfire in the Greater Victoria Water Supply Area could pose a major threat to the quality of water in source reservoirs. A pilot project was completed in 2014-15 to model post-wildfire erosion and debris flow for two drainages close to the intake of Sooke Lake Reservoir. The results were then used to develop an emergency rehabilitation plan for these two drainages. A larger modelling project for all areas draining directly into Sooke Lake Reservoir is proposed for 2019 in order to develop further site specific emergency rehabilitation plans.*

Service: 2.670 Regional Water Supply

Proj. No.	18-10	**Capital Project Title**	Species-at-Risk Wildlife Habitat	**Capital Project Description**	An assessment (office and field) and plan for managing wildlife habitat, in particular species-at-risk habitat, in the GVWSA.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *An assessment (office and field) and conservation plan for managing wildlife habitat, in particular species-at-risk habitat, in the GVWSA. Funds in 2018 ($35,000) will be used for compilation of existing knowledge of species, distribution, habitat, research. Funds in 2019 and 2020 ($50,000 each) will be used to field verify species, critical habitat and movement corridors. Funds added in 2021 ($25,000) are to develop a GVWSA specific conservation plan based on the office and field investigations.*

Proj. No.	19-30	**Capital Project Title**	Leech WSA Lakes/Tributaries Assessment	**Capital Project Description**	An assessment of the physical, chemical and biological parameters of the lakes in the Leech WSA.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *To assess restoration of the Leech Water Supply Area and prepare for use of Leech River water to supplement Sooke Lake Reservoir, baseline monitoring of the hydrological, physical, chemical and biological parameters of the main Leech WSA source waterbodies will be conducted. The work will be undertaken in conjunction with the Water Quality division. (Action from the 2017 Strategic Plan for Regional Water Supply). The funding for this project has been moved forward to balance staff resources.*

Proj. No.	20-05	**Capital Project Title**	Leech WSA Terrestrial Ecosystem Mapping & Wetland Classification/Mapping	**Capital Project Description**	Classification and mapping of terrestrial ecosystems and wetlands and integration with Sooke and Goldstream data.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The existing Leech WSA terrestrial ecosystem mapping received from the previous landowner is not consistent with that of Sooke and Goldstream WSAs. The project is to renew the ecosystem mapping to a standard that matches Sooke and Goldstream for consistent data and analysis. There has been no detailed mapping of Leech WSA wetlands. The project is to conduct detailed wetland mapping in the Leech WSA to a standard that matches Sooke and Goldstream for consistent data and analysis. The projects have been combined (ecosystem mapping (20-05) and wetland mapping (20-06) and moved forward from 2020 to 2021.* ***The project has been further moved forward from 2021 to 2022.***

Service: 2.670 Regional Water Supply

Proj. No.	20-06	**Capital Project Title**	Addressing mining in Leech WSA (impacts, agreements)	**Capital Project Description**	Funding to support work to reduce the impact of mining claims in the Leech WSA
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water
Project Rationale	*Assessment and/or studies to determine and mitigate impacts from mining activities in the Leech Water Supply Area.*				

Proj. No.	20-27	**Capital Project Title**	GVWSA Forest Resilience - wildfire/forest modelling and forest management field trials	**Capital Project Description**	Modelling forest and wildfire risk under climate change scenarios & forest/fuel management field trials.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water
Project Rationale	*Projects to: a). model impact of climate change on forests, forest fuel types, and associated wildfire behavior and probability and potential effects of management options; and b). trial forest and fuel management treatments that reduce wildfire risk, such as prescribed fire and stand diversification, in the Leech WSA prior to considering those treatment options in Sooke or Goldstream WSAs.*				

Proj. No.	20-28	**Capital Project Title**	GVWSA Forest Resilience - Assessments of forest health and resilience	**Capital Project Description**	Field assessments to better understand current forest health and resilience.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water
Project Rationale	*Field assessments to better understand current forest health and resilience including: increasing pine mortality, increase in bark beetle killed trees, existing advance regeneration in the understory, sedimentation sources from roads.* ***The project funding for 2021 and 2022 is moved forward by one year to 2022 and 2023.***				

Proj. No.	21-19	**Capital Project Title**	Lakes Assessment Sooke and Goldstream WSAs	**Capital Project Description**	An assessment of the physical, chemical and biological parameters of the natural lakes in Sooke and Goldstream WSAs
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water
Project Rationale	***Small lakes in the Sooke and Goldstream WSAs influence both watershed hydrology and water quality in downstream creeks and supply reservoirs. While basic water quality sampling has been undertaken in some of these water bodies, there is a need to map the bathymetry, calculate water volumes, and conduct more comprehensive sampling of the chemical and biological parameters and aquatic vegetation of these lakes. This will facilitate comparisons of these parameters with lakes in the Leech WSA and water quality in existing and future water supply lands.***				

Service: **2.670** **Regional Water Supply**

Proj. No.	21-20	**Capital Project Title**	West Leech Road	**Capital Project Description**	Plan for future construction of a road to access the western portion of the Leech WSA.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale ***A large portion of the western Leech WSA currently has overgrown unassessed roads. Brushing, upgrade, re-surfacing and some new road construction is required to provide access to this area for wildfire response, security patrols and forest management.***

Proj. No.	22-03	**Capital Project Title**	GVWSA Land Exchange/Acquisition	**Capital Project Description**	Land surveys, appraisals to support decisions regarding land exchange to increase catchment area or buffer water supply areas
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *There are opportunities to increase the catchment area of Sooke, Goldstream and the Leech WSA by purchase or land exchange with surrounding land owners. Funds would be used to undertake appraisals, legal surveys, and legal fees for work to develop agreements to purchase or exchange lands.*

Proj. No.	23-02	**Capital Project Title**	GVWSA LiDAR Mapping	**Capital Project Description**	Detailed contour mapping of ground, vegetation and tree cover (3D scanning)
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *LiDAR (which stands for Light Detection and Ranging) uses light in the form of a pulsed laser to measure ranges (distances). LiDAR can be acquired when orthophotography or other data is collected from the air. LiDAR provides three-dimensional information about the forest stand structure which can be used by GIS (Geographic Information Systems).*

Service: 2.670 Regional Water Supply

Proj. No.	09-01	**Capital Project Title**	Leech River Watershed Restoration	**Capital Project Description**	A 17 year project to restore the Leech WSA lands for water supply.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *A 17 year project to 2025 to restore the Leech WSA lands for water supply. An update of projects completed and planned was provided in June 2019 (RWSC Report #19-13). Annual funding has been increased during this 5 year plan from $150,000 to $200,000 per year in order to match the overall project budget of $5,756,000 in the last 7 years of the project.* ***The proposed final year of funding in 2025 has been added to the plan.***

Proj. No.	16-01	**Capital Project Title**	Replace Gatehouse at Goldstream Entrance	**Capital Project Description**	The GVWSA entry gatehouse at Goldstream is past end of life and is to be replaced with a purpose built structure with improved vehicle flow and security
Asset Class	B	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Enhanced security is required at the Goldstream entrance to the Water Supply Area. The existing gatehouse/first aid trailer has reached end of life and is unsuitable and located inside the secured area.* ***A site design and purpose built facility with in/out roads, fencing and upgraded autogates (17-09) is planned requiring funding consistent with the project. The scope and scale of this project has increased since the current location is no longer considered feasible/advantageous for the upgrade.***

Proj. No.	16-06	**Capital Project Title**	Goldstream IWS Field Office	**Capital Project Description**	Renewal of Water Quality field office, lab and equipment and supplies storage and Watershed Protection office, training, emergency response, storage and interpretation space at Goldstream entrance, replacing temporary trailers.
Asset Class	B	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Watershed Protection staff (26 FTE and 6 seasonal auxiliaries) are currently located in 2 trailers and a house at the Goldstream Gate entrance to the water supply area, and in office space at the Integrated Water Services office in View Royal. The ATCO trailers were considered temporary office space since their implementation over 10 years ago. The trailers are old, prone to leaks and a concern for mold. Water Quality field staff are located in another converted facility in the Goldstream area. The separation of staff between various Goldstream facilities and the View Royal location causes inefficiencies and organizational difficulties. In addition, there are insufficient facilities for training, equipment storage, emergency management and public education. An initial investment in 2016 was used to develop a needs assessment for the building and surrounding Goldstream entrance area. Funds in 2020 will be used to develop a design with building and site construction planned for 2021 and 2022.* ***Funding has been moved forward by one year.***

Service: 2.670 Regional Water Supply

Proj. No.	17-02	**Capital Project Title**	Leech River HydroMet System	**Capital Project Description**	Installation of a network of hydrometeorological stations to collect water quantity and quality information for the Leech WSA.
Asset Class	E	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *A 17 year $ 5.756 M capital plan is being carried out to restore the Leech Water Supply Area (Project #09-01) to prepare for future water needs. Currently only one hydrological measuring station is capturing flow and turbidity measurements 3.8 km downstream of the future water intake on the Leech River. In order to understand and predict the effect of precipitation, storm events and various restoration management measures on Leech River water quality and quantity, a network of hydrological measuring stations is needed further upstream in the Leech River watershed. This capital project first funded a design study of the most effective and efficient monitoring system that could be implemented ($10,000) prior to funding implementation beginning in 2018 ($80,000). Additional funding requests of $30,000 in 2020 (new total $100,000) and $10,000 in 2021 (new total $25,000) to provide assistance in accessing and addressing safety issues at new weather and hydrology monitoring sites and installing the equipment. Funding requests reflect difficult terrain and access to reach monitoring locations.*

Proj. No.	17-06	**Capital Project Title**	Weeks Lake Area Environmental Assessment and Remediation	**Capital Project Description**	Assessment and remediation of the Weeks Lake gravel pit (lead from firearms) and Weeks Lake (metals and hydrocarbons from dumping).
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Weeks Lake and the surrounding area are suspected to be contaminated by historic use of the area for unregulated public activities. An assessment for lead contamination in the Weeks Lake gravel pit from firearms use began in 2017 with remediation works planned for 2019. The assessment completed in 2018 found surficial soil contamination in the top 15 cm throughout most of the northern half of the gravel pit. A remediation plan (2019) estimated a cost of $250,000 to remove and dispose of the contaminated soil (classed as hazardous waste). Additional funding of $145,000 has been added to the original 2020 request to adequately fund the gravel pit remediation work. Funds in 2021 are estimated for further sampling and possible remediation of Weeks Lake which was found to have minor contamination in the lake sediment.*

Proj. No.	17-09	**Capital Project Title**	Goldstream Gate Upgrade	**Capital Project Description**	The main entrance autogate in Goldstream is past end of life and requires replacement with lifting in/out gates along with project 16-01.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The security autogates are past end of life and are to be replaced with more effective security infrastructure. This project has been delayed in order to coordinate with construction of a replacement Gatehouse at the Goldstream entrance (16-01).*

Service: 2.670 Regional Water Supply

Proj. No.	18-05	**Capital Project Title**	GVWSA Forest Fuel Management/FireSmart Activities	**Capital Project Description**	Implementation of forest fuel management and FireSmart actions in strategic locations for wildfire risk management in the GVWSA.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Wildfire is the greatest threat to water quality in the GVWSA. In 2014 - 2018 CRD staff completed two new fuel reduction corridor projects. Funding to tender contract projects is required in order to complete priority fuel management projects over and above existing staff effort which will be focused on maintenance of existing fuel managed sites. A requested increase from $75,000 to $100,000 annually reflects costs experienced in the first year of tendering fuel management work. The need for fuel management to address priority areas will be ongoing and funding is required annually for the 5 year period.* ***An additional year of funding is added in 2025.***

Proj. No.	18-11	**Capital Project Title**	Large Equipment Storage (Field Operations Centre)	**Capital Project Description**	Two additional bays are to be added to the existing fire/spill equipment warehouse at the FOC to shelter large water supply infrastructure equipment.
Asset Class	B	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Increased protected storage is required for IWS equipment at the Field Operations Centre in Goldstream. The existing Fire and Spill Equipment Warehouse and adjacent covered storage is sound and fully utilised. Funds are for additional covered storage bays to accommodate additional large IWS equipment. The upgrade was recommended in the Building Needs Assessment for the Watershed Protection Operations Centre (16-06).*

Proj. No.	19-02	**Capital Project Title**	Whiskey Creek Bridge Replacement (Sooke WSA)	**Capital Project Description**	Replacement of the existing undersized bridge with a longer and higher concrete structure.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Whiskey Creek bridge is located on the Leechtown Main Road, one of the main access routes to Sooke Lake Dam and other critical IWS infrastructure. Whiskey Creek requires a larger bridge as it has been overtopped by storm events in the past and this poses water quality, environmental and safety risks.* ***The project has been moved forward from 2022 to 2023 to allow higher priorities to be addressed first.***

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Proj. No.	19-19	**Capital Project Title**	Hydromet Upgrades Sooke and Goldstream	**Capital Project Description**	Install additional hydrology monitoring sites on Sooke Lake Reservoir inflow streams and increase instrumentation on meteorological stations in Sooke and Goldstream watersheds.
Asset Class	E	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Only the main tributary inflows into Sooke Lake Reservoir are monitored. To better understand the hydrology of the Sooke watershed, additional hydrology monitoring sites are required. The existing meteorological stations in Sooke and Goldstream watersheds have only basic instrumentation and would benefit from additional sensors and upgrades to improve the quality of the meteorological data. The proposed funds for 2020 have been increased by $20,000 to cover the costs associated with site preparation, addressing site safety issues and assistance with station installation.*

Proj. No.	20-01	**Capital Project Title**	Kapoor Main Mile 1 Bridge and Asphalt Upgrade	**Capital Project Description**	Replacement of the existing undersized culvert with a large bridge as well as nearby asphalt repair or replacement.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The existing culvert at Mile 1 on Kapoor Main is undersized, has evidence of buried organics in the fill material and has oversteepend, unstable banks. The culvert will be removed and a bridge installed to improve water carrying capacity at peak flows, fish passage and bank stability. The asphalt section uphill of the bridge will also be repaired or replaced as a component of the project.* ***The project has been moved forward from 2021 to 2022 to allow higher priorities to be addressed first.***

Proj. No.	20-29	**Capital Project Title**	Gravel crushing 14G and 10S quarry (Sooke and Goldstream WSA)	**Capital Project Description**	Production of gravel at existing quarries in Sooke and Goldstream WSAs.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The current supply of 19 mm road surfacing gravel needs to be replenished.* ***A tender was let in 2020 to further develop both quarries. Based on the bids received, funds were only sufficient to proceed with one quarry and the 10S quarry was priorized for gravel production. The additional funds requested in 2021 will allow gravel to be produced at 14G.***

Proj. No.	21-01	**Capital Project Title**	31N Bridge to Replace Undersized Culvert (Goldstream WSA)	**Capital Project Description**	Replacement of the existing undersized and failing culvert with a bridge structure.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The undersized and failing culvert on the 31N Road in the Goldstream Water Supply Area requires replacement with a bridge structure in 2021.* ***Funding has been increased to reflect an estimated cost for bridge supply and install of $325,000.***

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Proj. No.	21-26	**Capital Project Title**	Road Deactivation/Rehabilitation in the GVWSA	**Capital Project Description**	Deactivate or rehabilitate unneeded roads in the Sooke and Goldstream WSAs.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale ***A review was undertaken to identify roads in the Sooke and Goldstream WSAs that could be rehabilitated and removed from the road network without undue impact to operations, wildfire response and security. Funding is required over the 5 year period to make progress on the roads identified to be deactivated/rehabilitated.***

Proj. No.	21-27	**Capital Project Title**	Autogate Installations on Primary Access Routes	**Capital Project Description**	Install autogates on the main access routes where the Sooke Hills Wilderness Trail and E&N rail line cross to improve
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale ***Continued residential growth and corresponding increasing recreational pressure bring the public close to critical works (Goldstream Treatment Plant, and Ammonia Injection building). Recreational use of the Sooke Hills Wilderness Trail and Park also generate tresspass into the GVWSA, and Drinking Water Protection Zone. The proposed autogates improve security by 24 hour recorded keycard access operation and improved location to increase security where the Sooke Hills Wilderness Trail crosses the primary GVWSA access road.***

Proj. No.	21-28	**Capital Project Title**	GVWSA Land Acquisition Priorities	**Capital Project Description**	Acquisition of priority GVWSA catchment and buffer lands.
Asset Class	L	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale ***Funding to support acquisition of priority GVWSA catchment and buffer lands to meet Regional Water Supply Strategic Plan goals.***

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Proj. No.	22-02	**Capital Project Title**	Muckpile Bridge Supply and Install (Deception)	**Capital Project Description**	Replacement of undersized culverts with bridge which will allow for fish and western toad migration.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *Replacement of undersized culverts with a concrete deck L100 bridge which will alo improve fish passage and western toad migration.*

Proj. No.	23-03	**Capital Project Title**	Air curtain burner for fuel management	**Capital Project Description**	A transportable burner that provides more effective and rapid burning of woody debris with reduced smoke emissions.
Asset Class	E	**Board Priority Area**	Climate Action & Environmental	**Corporate Priority Area**	Climate Action & Adaptation

Project Rationale *In order to prevent forest fuels from accumulating from clearing and forest fuel management projects, the woody debris is chipped and dispersed as possible, and the remainder is piled and burned. Opening burning of woody debris is restricted by the Open Burning Smoke Control Regulation, which restricts the days and conditions under which woody debris can be burned in order to reduce the amount and dispersion of smoke generated, especially near urban areas. This limits the timing of burning in the GVWSA to few opportunities and may not allow all required burning to be completed in a given year. An air curtain burner can be transported to a site, fed with woody debris, and very little if any smoke is generated as the fuel is burned quickly by feeding it with air and an "air curtain" contains the smoke within the burner.* ***The project budget has been moved ahead to 2021 and reduced due to shared funding with CRD Regional Parks and Environmental Protection programs.***

Proj. No.	23-04	**Capital Project Title**	17S/Sooke Main Bridge Replacement	**Capital Project Description**	Undersized bridge replacement
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The current structure (3 concrete culverts side-by-side with a concrete deck) does not allow adequate room to pass potential storm debris. The most recent engineering inspection stated this recycled structure is in fair shape, with spalling of the concrete. The structure is planned to be replaced with a free span concrete bridge.* ***The project has been moved forward from 2023 to 2025 to allow higher priorities to be addressed first.***

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Proj. No.	24-01	**Capital Project Title**	6M/Judge Creek Culvert Replacement (Sooke WSA)	**Capital Project Description**	Undersized culvert replacement
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water
Project Rationale	*This culvert is very undersized on a slow moving section of creek, which seasonally can be overtopped and unpassable for vehicles. This culvert with be replaced with a larger, fish-friendly structure.*				

Proj. No.	16-10	**Capital Project Title**	Post Disaster Emergency Water Supply	**Capital Project Description**	Identify and procure emergency systems for post disaster preparedness.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*In the event of a disaster, it is proposed to have in place the ability to source, treat (if required) and distribute drinking water during the initial and sustained response and recovery phases to the public. This item will see the study of the issue in 2016 and 2017 with the anticipated purchase of one or more emergency distribution systems in 2017.Initial investigation has highlighted areas, such as having hardened hydrants/standpipes that the CRD should be investing in. Additional funds are required to start implementing these additional works.*				

Proj. No.	17-13	**Capital Project Title**	Asset Management Plan	**Capital Project Description**	Development of a plan to inform future areas of study and highlight critical infrastructure improvements.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This plan will bring various components together from items 14-01, 16-07, 16-08, 16-09, 16-10 and 16-11 and form a strategic plan that will identify future study and construction requirements with capital replacement budgets and schedules.Additional funds are required to complete additional investigations highlighted in the 2017 study.*				

Proj. No.	19-04	**Capital Project Title**	Seismic Assessment of Critical Facilities	**Capital Project Description**	Identified as a priority from Strategic Plan, a seismic assessment of critical facilities and a supply system resilience feasibility study will be undertaken.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*A Water Supply System Strategic Plan update occurred in 2017. Seismically assessing critical facilities and ensuring water supply is resilient has been highlighted as a priority to ensure a functioning water supply system after a seismic event. With the exception of dams, all critical facilities including the Japan Gulch and Sooke River Road Disinfection facility will be seismically assessed in a desktop study and confirmed through field inspections to determine if they meet current post-disaster requirements. Additionally, a feasibility study of critical infrastructure will identify and assess whether plans, procedures and necessary infrastructure are in place in the event key infrastructure fails. The results of the assessment will inform future investigation and capital improvements if required. Funds are required to retain a consulant to seismically asses critical facilities within the water supply system.*				

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Proj. No.	19-15	**Capital Project Title**	Hydraulic Capacity Assessment and Transient Pressure Analysis	**Capital Project Description**	Determine the existing level-of-service for the RWSC transmission system and conduct a transient pressure analysis
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWSC transmission is complex with all the connection points to it. Funding is required to determine the available pressures and flows throughout the transmission system and whether it is susceptible to transient pressure waves.*				

Proj. No.	19-28	**Capital Project Title**	Goldstream System Hydraulic Analysis	**Capital Project Description**	Analysis and documentation of hydraulics of the Goldstream system.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*A study to quantify the volume and available flow rate from the Goldstream system is required to qualify the operational conditions in the event it is used as an emergency backup for the Sooke Lake system.*				

Proj. No.	20-02	**Capital Project Title**	Supply System Resilience Feasibility Study	**Capital Project Description**	Identified as a priority from the Strategic Plan, a study of water supply system's resilience and high level measures to
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWSC currently has one primary water supply and one backup water supply with single feeds from each system. Funding is required to assess the water supply system's resilience and outline high level measures to make important assets resilient.*				

Proj. No.	20-07	**Capital Project Title**	Deep Northern Intake & Transmission Pipeline Study	**Capital Project Description**	A technical and business case analysis will be carried out with possible expansion and filtration study upstream of the head tank - this is to replace 2016-09
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*A technical and business case analysis will be carried out on an additional intake from the deeper, northern area of the Sooke Lake Reservoir. Additionally, a filtration siting study will be undertaken due to the inconnectedness of the two works.*				

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Proj. No.	20-08	**Capital Project Title**	Regional Water DCC Program	**Capital Project Description**	Design of a Regional DCC Program
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The municipalities are developing and growing and may result in upgrades to maintain the level of service due to development. Funds are required to design a Regional Water Development Cost Charge program.*				

Proj. No.	20-10	**Capital Project Title**	Condition & Vulnerability Assessment	**Capital Project Description**	Conduct a condition assessment of critical supply infrastructure and assess its possibility of risk.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWSC is a large system with infrastructure of various ages and condition. Funding is required to conduct a condition assessment of critical infrastructure, such as Humpback PRV, and assess their risk of failure and provide a high level timeline for replacement/renewal.*				

Proj. No.	20-11	**Capital Project Title**	Develop Master Plan	**Capital Project Description**	Develop a long term strategic plan to anticipate water demand, water treatment, and future siting of facilities.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWSC is providing water to an increasing population in the CRD. Due to the size and complexity of the supply system, improvements to increase capacity has to be identified and planned out well in advance of the need for the additional water. Funding is required to assess water demand vs available*				

Proj. No.	21-05	**Capital Project Title**	Level of Service Agreement	**Capital Project Description**	From #19-15 & #20-11, develop level-of-service agreements for participating municipalities to address hydraulic capacity of infrastructure.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWSC supplies water directly and indirectly to 12 municipalities. Based upon Capital Projects #19-15 and #20-11, level-of-service agreements for participating municipalities will be developed to address hydraulic capacity of infrastructure.*				

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Proj. No.	15-03	**Capital Project Title**	Sooke Intake Screens Condition Assessment & Replacement	**Capital Project Description**	Renewal of the aging Sooke Intake Tower and equipment to maintain water supply.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The Intake Tower is an integral part of the Regional Water System and is the primary raw water feed to Japan Gulch and Sooke River Road Water Treatment Plants. Currently there is no redundancy within the structure in the event of mechanical failure. In 2016 Stantec Consulting Ltd. completed an assessment of the overall structure including major components consisting of: Travelling Screen, Sluice Gates/Actuators, and Electrical System. The assessment identified required remedial works to the major components that will be carried out over 2017 and 2018. In 2016 a Seismic Structural Analysis will be completed to assess the vulnerability of this structure and identify options of upgrades or replacement of the structure to meet current seismic codes. In 2017 Stantec had provided renewal and replacement options for the Intake Tower, additional funds are required to renew the Intake Tower to ensure proper functioning screens, sluice gates/actuators and electrical system.*

Proj. No.	18-07	**Capital Project Title**	Replacement of UV System	**Capital Project Description**	Replacement of the UV system at the Goldstream Water Treatment Plant
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Two 24" UV disinfection units that were decommissioned from the old Charters Creek plant are required to be installed at the JG plant along with electrical and control connections. Inlet and outlet valves are in place, but require 24" stainless steel piping to insert units into place. Funding is required to relocate existing UV disinfection units to the JG plant and provide electrical & control and piping connections.* ***Construction has been spread over two years to correspond with construction over the winter period.***

Proj. No.	18-08	**Capital Project Title**	Bulk Supply Meter Replacement Program	**Capital Project Description**	Planned replacement of aging bulk meter replacement based upon a condition assessment and water audit.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *This item is to replace, upgrade and install new bulk water meters and related equipment that measure flow and volumes of water delivered to the wholesale customers. Many of the meter stations are in need of upgrading. Funding is required to replace the flow meter and appurtenances.* ***Funding is required for Blue Ridge, Alderly, Holland and Maplewood replacements.***

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Proj. No.	18-15	**Capital Project Title**	Corrosion Protection Program	**Capital Project Description**	Study deficiencies in the current material protection and implement recommendations.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *This item is to assess, design and implement cathodic protection for the various infrastructure, including steel pipes, that are susceptible to corrosion. The supply system has various implementations of cathodic protection ranging from interior/exterior coatings for pipe and passive anodes to impressed current systems with variable results and condition. Funding is required to retain a specialist to conduct a high level assessment of existing infrastructure with recommendations for additional investigation or areas that require immediate attention.*

Proj. No.	18-18	**Capital Project Title**	Main No.3 Segment Replacement	**Capital Project Description**	Replacement of segments of Main No. 3 based upon previous studies.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The existing Main No. 3 is approximately 70 years old. Some section of the 22 km main are steel pipe in known potentially corrosive soils. It is proposed to eventually replace a segment or Main #3 on Wale Road, Island Hwy. and Adams Place in Colwood and View Royal. Conceptual design and options analysis will be undertaken in 2018 with detailed design and construction commencing in 2019 to 2022. Funding is required to retain a consultant to undertake design and to construct a replacement to Main No. 3.*

Proj. No.	19-05	**Capital Project Title**	Repairs - Kapoor Shutdown	**Capital Project Description**	Repair items such as defects in the Kapoor tunnel, replacement of critical valves, intake exterior inspection and actuator replacement while the Kapoor tunnel is shutdown.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *During the 2016 Kapoor Tunnel inspection numerous deficiencies were noted. Some of the repairs were made and inspected in 2017. Funds are required to complete remaining identified repairs as well as conduct other works, such as head tank valve maintenance, dive inspection of the Intake Tower, hydraulic actuator line replacement, that can only be conducted when the Kapoor Tunnel is offline.*

Proj. No.	19-23	**Capital Project Title**	Critical Spare Equipment Storage & Pipe Yard	**Capital Project Description**	Plan, design and construct a critical equipment storage building.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Additional and accessible storage is required at the pipe yard for critical spare equipment such as repair bands and clamps. Funds are required to pland, design and construct an equipment storage building accessible by loading vehicles.*

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Proj. No.	20-13	**Capital Project Title**	Electrical Isolation Audit	**Capital Project Description**	Inspection audit of facilities to ensure that there is sufficient electrical separation and isolation for safety.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWSC has numerous facilities with electrical and mechanical equipment within the same room. Funds are required to conduct and inspection of the facilities and ensure there is sufficient separation to reduce the risk of failure and for safety.*				

Proj. No.	20-16	**Capital Project Title**	Cecelia Meter Replacement	**Capital Project Description**	Replacement of the Cecelia billing meter as well as its enclosure.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The St Giles and Cecelia meters are aging and in hard to maintain locations. Funding is required to construct new meter sites and decommission and demolition the old sites.*				

Proj. No.	20-17	**Capital Project Title**	Decommission Smith Hill Site	**Capital Project Description**	Plan and decommission the abandoned Smith Hill reservoir site.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The Smith Hill reservoir has not been in operation for many years. Funds are required to plan for decommission the site in 2020 and then carry out decommissioning in 2023.*				

Proj. No.	20-18	**Capital Project Title**	Goldstream Main #4 Replacement	**Capital Project Description**	Plan and replacement of the concrete pipe portion of Main #4.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The Main #4 transmission main going through Goldstream Ave in Langford is concrete pipe and should be replaced. Funds are required to plan a new alignment and logistics of replacement in 2020 with actual replacement part of Project 21-11.*				

Proj. No.	20-32	**Capital Project Title**	pH Adjustment Facility	**Capital Project Description**	Design and construct a pH adjustment facility based upon the results of the pH and corrosion study.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*From the 2019 Capital Project, pH and Corrosion Study, a new facility to adjust pH in the transmission system will be designed and constructed.*				

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Proj. No.	20-33	**Capital Project Title**	Sooke Intake Screens Replacement	**Capital Project Description**	Emergency replacement of the Sooke Intake screens.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*In January 2020 the Intake Screens failed, funds are required for the emergency replacement of the screens over the winter of 2020-2021.*				

Proj. No.	21-06	**Capital Project Title**	Sooke Lake Dam Spillway Hoist Replacement	**Capital Project Description**	Replacement of the sluice gate spillway hoist at Sooke Lake Dam.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The Sooke Lake Dam Spillway Hoist is at it's end of life and poses a risk of failure when required for use of lowering the high level gate barriers. Funds are required to replace the hoist.*				

Proj. No.	21-07	**Capital Project Title**	Goldstream Water Treatment Plant Communications Upgrade	**Capital Project Description**	Increase reliability and resilience of data and voice communications between the UV Plant, Sodium Hypochlorite Building.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The communications systems between the UV Plant, Sodium Hypochlorite Building and Ammonia Building operate on separate systems, requiring additional time and processes to access one from the other. Funds are required to optimize the communications system to increase reliability and resilience of data and voice communications between the facilities.*				

Proj. No.	21-08	**Capital Project Title**	Goldstream Water Treatment Plant Emergency Automation	**Capital Project Description**	Installation of automatic valves and controls to safeguard chemicals in the event of dosing line breaks
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Funds are required to automate chemical dosing line isolation to ensure employee safety in the event of a chemical line break.*				

Proj. No.	21-09	**Capital Project Title**	Goldstream Water Treatment Plant Demolition	**Capital Project Description**	Plan and construct provisions demolition.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The Goldstream Water Treatment Plant has undergone numerous upgrades and updates, both large and small since its initial construction. There are numerous vestigial mechanical and electrical assets that require planned removal. Funds are required to plan and remove unused assets that affect maintenance of the system.*				

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Proj. No.	21-10	**Capital Project Title**	SCADA Upgrades	**Capital Project Description**	Update the SCADA Master Plan in conjunction with the Juan de Fuca Water Distribution. Saanich Peninsula Water
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The SCADA and radio system utilized by the RWS comprises of components ranging from 2-25 years in age. A planned replacement of assets, to be coordinated with the Juan de Fuca Water Distribution and Saanich Peninsula Water & Wastewater Systems is required to create a more resilient and cohesive communications system.*				

Proj. No.	21-11	**Capital Project Title**	RWS Supply Main No. 4 Upgrade	**Capital Project Description**	Upgrade vulnerable sections of the RWS Supply Main No. 4 to a resilient system to better able to withstand a seismic event.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Sections of RWS Supply Main No. 4 have been identified as being vulnerable due to age and material type during a seismic event.This project is part of a partially grant funded project partnered with the Saanich Peninsula Water System.*				

Proj. No.	21-12	**Capital Project Title**	SRRDF Upgrade	**Capital Project Description**	Increased water flows in the Sooke region have resulted in an additional sodium hypochlorite dosing pump and
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Due to increased water flows in the Sooke region, an additional sodium hypochlorite dosing pump and automation is required. Funds are required to carry out the upgrades.*				

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Proj. No.	16-16	**Capital Project Title**	Implications from Goldstream Dam Safety Review	**Capital Project Description**	Conduct dam improvements at the Goldstream dams that resulted for the Dam Safety Review and routine inspections (refer to the Dam Safety
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The Goldstream Dams Dam Safety Review was initiated in 2015 and delivered in 2016 and the review provided recommendations for dam safety improvements for the 11 dams in the Goldstream Watershed. The dam deficiencies and related projects are identified in the Dam Safety Database.*

Proj. No.	16-17	**Capital Project Title**	Butchart Dam No. 5 Remediation	**Capital Project Description**	Phase 1 Rehabilitation (grouting) of Butchart Dam No. 5 and planning for Phase 2.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Butchart Dam #5 was observed to have a sinkhole on the downstream slope. The earthfill dam was founded on limestone in the about 1905 and seepage issues have occurred since that time. A geotechnical investigation was conducted in 2016, and remediation has been recommended by geotechnical consultant. It is proposed to complete detailed design of remediation in 2018 and construction of repairs in 2019.*

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Proj. No.	17-25	**Capital Project Title**	Implications from Sooke Lake Dam Safety Review	**Capital Project Description**	Conduct dam improvments at the Sooke Lake Dam that resulted from the Dam Safety Review and routine inspections (refer to the Dam Safety Database)
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The 2016 Dam Safety Review Audit was completed and provided a list of recommended improvements. Upcoming capital work to be completed is identified in the dam safety database.*

Proj. No.	18-19	**Capital Project Title**	Sooke Lake Dam - Instrumentation System Improvements	**Capital Project Description**	Complete dam performance instrumentation system/surveillance improvements for the Sooke Lake Dam.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

The 2016 Dam Safety Review identified and recommended various dam safety surveillance instrumentation improvements including piezometers, weirs, seismometers, etc. An Instrumentation system plan was completed and includes a prioritized list of improvement projects.

Proj. No.	18-20	**Capital Project Title**	Sooke Lake Dam - Breach Risk Reduction Measures	**Capital Project Description**	Implement measures to reduce Sooke Lake Dam breach implications in the unlikely event of dam failure (refer to the
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

A Dam Breach Assessment and Inundation Zone Mapping proecjt was completed in 2017 by an engineering consutlant and risk mitigation measures included structural and non-structural measures to lower risk should a dam breach occur. The measures are captured in the Dam Safety Database.

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Proj. No.	19-07	**Capital Project Title**	Integrate Dam Performance and Hydromet to SCADA	**Capital Project Description**	Integrate the dam safety instrumentation/surveillance (i.e. piezometers and weirs) and HydroMet
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Based on capital project 18-19, dam performance piezometers and weirs and Hydromet/Dam Safety Instrumentation stations will be integrated through the SCADA system.*				

Proj. No.	19-08	**Capital Project Title**	Charters Dam Decommissioning	**Capital Project Description**	Charters Dam has been retired from drinking water service, no other interested owners, plan to decommission.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The Charters Dam has been retired from drinking water service with no other interested owners. Funds are required to plan and implement decommissioning of the dam prior to the next legislated Dam Safety Review.*				

Proj. No.	19-09	**Capital Project Title**	Cabin Pond Dams Decommissioning	**Capital Project Description**	The Cabin Pond Dams (x2) have been retired from drinking water service, plan to decommission.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The two Cabin Pond Dams has been retired from drinking water service with no other interested owners. Funds are required to plan and implement decommissioning of the dams.*				

Proj. No.	19-12	**Capital Project Title**	Goldstream Dams Instrumentation Improvements	**Capital Project Description**	Conduct dam safety instrumentation/surveillance improvements (refer to report from Thurber Engineering).
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Thurber completed a study on the Goldstream Dam instrumentation and found numerous deficiencies with respect to dam safety. Funds are required to design and implement improvements to the Goldstream Dam instrumentation.*				

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Proj. No.	19-13	**Capital Project Title**	Dam Safety Instrumentation - Hydromet	**Capital Project Description**	The existing dam safety instrumentation/surveillance equipment is getting older and will need to be replaced/rehabilitated (does not include pending SCADA effort)
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Aging Hydromet/Dam Safety Instrumentation stations maintained by Infrastructure Engineering require replacement so that ongoing monitoring within the watersheds can be maintained. Funds are required for upgrades and replacement of existing Hydromet Stations.*				

Proj. No.	20-19	**Capital Project Title**	Goldstream System High Level Outlet Valve Replacements	**Capital Project Description**	The Goldstream and Butchart high level outlet valves have been identified as requiring replacement.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Through dam safety inspections and routine operations, the Goldstream and Butchart high level outlet valves have been identified as requiring replacement. Funds are required to design and replace the valves.*				

Proj. No.	20-20	**Capital Project Title**	Saddle Dam Piezometer Installation	**Capital Project Description**	Dam safety instrumentation/surveillance installations (i.e. piezometers) are required to monitor the Saddle Dam to monitor the performance of Saddle Dam and for future stability assessments
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*From the 2019 Capital Project, #19-10, recommendations were made for piezometer installation at Saddle Dam to meet regulatory requirements. Funds are required to design and implement piezometer installation.*				

Proj. No.	21-03	**Capital Project Title**	Deception Dam - Dam Safety Review 2021 & Improvements	**Capital Project Description**	Conduct a Dam Safety Review and some improvements for the Deception Dam.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Deception Dam has a consequence classification of "very high" and a dam safety review is required to be completed every ten years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2011. The dam safety review is anticipcated to be an "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. Project includes budget for subsequent year to complete recommended dam safety improvements.*				

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Proj. No.	21-04	**Capital Project Title**	Saddle Dam - Dam Safety Review 2021 & Improvements	**Capital Project Description**	Conduct a Dam Safety Review and some improvements for the Saddle Dam.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Saddle Dam has a consequence classification of "very high" and a dam safety review is required to be completed every ten years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2011. The dam safety review is anticipated to be and "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. Project includes budget for subsequent year to complete recommended dam safety improvements.*				

Proj. No.	21-21	**Capital Project Title**	Goldstream Dams - Gate Improvements	**Capital Project Description**	logistics planning in 2021, installation in 2022
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Several of the water control gates related to the Goldstream dams are in need of repair and possibly replacement.*				

Proj. No.	21-22	**Capital Project Title**	Charters Dam - Dam Safety Review 2021	**Capital Project Description**	Legislated obligation to conduct Dam Safety Review, contingent on outcome of the Decommissioning plan and DSO expectations (relates to Item 19-08)
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Charters Dam has a consequence classification of "high" and a dam safety review is required to be completed every ten years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2011. The dam safety review is anticipated to be and "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. A dam decommissioning study is in progress and the DSR will only proceed if needed, as determined by the Dam Safety officer.*				

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Proj. No.	22-08	**Capital Project Title**	Deception Dam Surveillance Improvements	**Capital Project Description**	Replace and supplement the Dam Safety Instrumentation at Deception Dam.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The latest engineering data review identified deficiencies with the existing piezometers and seepage weir. It is proposed to prepare a system improvement plan and thereafter complete repairs, improvmetn and install supplementary dam performance instrumentation.*				

Proj. No.	23-01	**Capital Project Title**	Sooke Lake Dam Update Seismic Assessment	**Capital Project Description**	Conduct a seismic assessment of the Sooke Lake Dam as per the previous Dam Safety Reiviews.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The Sooke Lake Dam requires periodic seismic assessment updates. Funds are required to retain a consultant to conduct an update to the Sooke Lake Dam Seismic Assessment.*				

Proj. No.	23-07	**Capital Project Title**	Sooke Lake Dam Seismic Retrofits	**Capital Project Description**	Detail and construct seismic retrofits for the existing structures initially focusing on the spillway and gates structures.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The siesmic assessment completed in 2017 included recommendations for siesmic retrofits for Sooke Lake Dam including siesmic anchoring of the spillway, gate structure and the intake tower bridge..*				

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Proj. No.	23-08	**Capital Project Title**	Regional Watershed Dams – Flood Forecasting System	**Capital Project Description**	Update the existing flood forecasting system (WD4Cast) to a modern version including Standard Operating Procedures and training for staff
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The 2016 Dam Safety Review included a recommendation to improve the flood forecasting system, which is becoming more important with Climate Change. This item will update the existing flood forecasting system from WD4Cast to a modern version including Standard Operating Procedures and training for staff.*

Proj. No.	23-09	**Capital Project Title**	Sooke Lake Dam - Dam Safety Review 2023	**Capital Project Description**	Conduct a Dam Safety Review
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Sooke Lake Dam has a consequence classification of "extreme" and a dam safety review is required to be completed every seven years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2016. The dam safety review is anticipated to be and "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. Project includes budget for subsequent years to complete recommended dam safety improvements.*

Proj. No.	25-01	**Capital Project Title**	Goldstream Dams - Dam Safety Review 2025	**Capital Project Description**	Conduct a Dam Safety Review
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The Goldstream Watershed Dams have a consequence classification of "low" to "high" and a dam safety review is required to be completed every ten years under the current B.C. Dam Safety Regulation. The last dam safety review was completed in 2015. The dam safety review is anticipated to be and "audit-style" assessment of the physical condition of the dam, operations, maintenance, surveillance, identification of dam safety deficiencies and recommendations for dam safety improvements. Project includes budget for subsequent years to complete recommended dam safety improvements.*

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Proj. No.	25-02	**Capital Project Title**	Probable Maximum Flood and Inflow Design Flood Updates	**Capital Project Description**	Update the previous edition from 2015 (recommended 10 year review cycle).
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The various Dam Safety Reviews and Canadian Dam Safety Guideline recommend updating the reservoir inflow design flood and freeboard analysis every ten years.*				

Proj. No.	19-29	**Capital Project Title**	Leech River Water Quality Monitoring	**Capital Project Description**	Monitor water quality from the Leech River for 2 years
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Prior to utilizing the Leech River as an additional drinking water source, water quality monitoring is required to determine if it is a suitable water source with the current treatment technology utilized. Funds are required to monitor and analyze the water quality from the Leech River.*				

Proj. No.	20-03	**Capital Project Title**	Leech River Watershed - Implications for Supply Management	**Capital Project Description**	Review data of Leech Monitoring Project and report on implications of adding Leech to water supply
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This item is to develop and implement a research program to evaluate the implications of adding Leech Watershed water supply to existing Sooke Reservoir when future demand exceeds current supply*				

Proj. No.	20-04	**Capital Project Title**	Sooke Lake HyDy Model Development	**Capital Project Description**	Critical data collection, model building+calibration, model utilization for 3 different scenarios
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This project consists of the following different phases: 2020/2021 Procurement/Rental of monitoring equipment to fill critical data gaps; 2022 Consulting contract to build the hydrodynamic lake model and calibrate it against existing data; 2022 Consulting contract to run the model for a North Basin intake scenario; 2023 Consulting Contract to run the model for investigating impacts of a diversion of Leech River water into Sooke Lake; 2024 Consulting Contract for investigating impacts of wind induced seiches in Sooke Lake.*				

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Proj. No.	21-13	**Capital Project Title**	Flowcam Imaging System	**Capital Project Description**	Utilize semi-automated algal analysis to meet increased demands without increasing FTEs
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Demand for algal monitoring of the watershed areas has increased due to the monitoring of the Leech Watershed Area and overall increased monitring due to the potential effects of climate change on the water supply for Greater Victoria. The Flowcam imaging system is a semiautomated flow cytometer imaging system that can increase sample analysis capacity substantially to meet the demand without increasing FTEs in an expert role. Water Quality also analyzes algal samples for CRD-operated local service area drinking water sources and recovers costs through internal charges back to RWS.*

Proj. No.	21-14	**Capital Project Title**	Sooke Lake Sampling Boat Repair	**Capital Project Description**	Refurbishment of structural boat parts (floor)
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The 1994 Sooke Lake Sampling Boat needs replacement of the wood-core floor and a few other smaller repairs to extend its structural life.*

Proj. No.	21-29	**Capital Project Title**	Microbiological plate pourer	**Capital Project Description**	Automation of manual process to increase capacity/worker safety
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Currently microbiological media is heated to melting on a hotplate and manually poured into Petri dishes, and sample workload has increased such that staff spend a significant amount of time on this potentially hazardous activity. This piece of equipment automates the process to eliminate the risk of burn injuries from handling hot, sterilized media in glassware.*

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Proj. No.	22-05	**Capital Project Title**	WQ Lab Capital Improvements	**Capital Project Description**	Building improvements in the lab
Asset Class	B	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Replacement of floor covering and wooden cabinetry original to the building due to deterioration/ wear and tear.*

Proj. No.	22-06	**Capital Project Title**	Sooke Lake Food Web Study	**Capital Project Description**	Assess the aquatic food web structure and create an inventory of fish and invertebrate species and distribution in Sooke Lake Reservoir - to be used as
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *CRD has been using predominantly algal data as an indicator for stream health and condition assessment in the source waters. To gain a better understanding of the source water conditions and how they may change over time it is necessary to expand this indicator system for other trophic levels in the food web. Sooke Lake Reservoir is of particular interest as the primary and critical water source for the GVDWS and therefore a aquatic food web study will be commissioned on this lake.*

Proj. No.	22-07	**Capital Project Title**	Bulk-Water Connection Backflow Protection Study	**Capital Project Description**	Investigate all bulk-water connections to CRD or municipal systems and identify the need for backflow protection
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *While the CRD has a new policy requiring backflow considerations for the design of new connections to CRD supply mains, there are a number of existing connections that are unprotected or that are unknown if protected. Also, there are numerous bulk-water connections to municipal mains (Stratas, First Nation lands, federal lands) that may be unprotected. This study is to create an inventory of all bulk-water connections to public water systems in the GVDWS and to assess the risk of backflow.*

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Proj. No.	23-05	**Capital Project Title**	Renovation of Samplers Hut (2955 Sooke Lk Road)	**Capital Project Description**	Building exterior paint, roof, gutters, flooring, bathroom
Asset Class	B	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The CRD Samplers Hut at 2955 Sooke Lake Road will require extensive building renovations in 2023 to be able to continue to serve as a safe and adequate working place for CRD staff.*				

Proj. No.	23-06	**Capital Project Title**	GVDWS Nitrification Study	**Capital Project Description**	Investigate nitrification occurrence and potential impacts on drinking water quality
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*With the operation of the upgraded Goldstream disinfection process (liquid NH3 and hypo) the volatility of the residual products and potential for nitrification in the distribution systems needs to be studied to assess any potential impacts to the drinking water quality.*				

Proj. No.	24-02	**Capital Project Title**	Boat Motor Replacement with Electric Outboards (Sooke and Goldstream Boats)	**Capital Project Description**	90hp and 15hp motor replacement due to age and water quality concerns, large electric outboards are already available from Torqeedo for instance
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*When the existing boat motors are due for replacement they shall be replaced with electric outboard motors to reduce emmissions and to provide clean propulsion of CRD boats on the drinking water source lakes. This will reduce the risk of fuels spills and eliminate combustion exhausts entering the water.*				

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Proj. No.	17-27	**Capital Project Title**	Watershed Bridge and Culvert Replacement	**Capital Project Description**	Replacement of small culverts and bridges throughout the GVWSA.
Asset Class	S	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *This provides annual funding for the replacement of culverts and bridges that have reached end of life and/or are undersized given present knowledge of potential peak water flows and anticipated climate change effects. With the completion of peak flow modelling of all major structures in the Sooke and Goldstream WSAs in 2017, additional funds are required beginning in 2018 to upgrade identified structures to current standards. Costs of upgrades have increased significantly in the last 5 years.*

Proj. No.	17-28	**Capital Project Title**	Watershed Security Infrastructure Upgrade and Replacement	**Capital Project Description**	New, upgrade and replacement of security infrastructure in the GVWSA.
Asset Class	E	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *The outer boundary of the Leech, Sooke and Goldstream Water Supply Areas is approximately 119 kilometers in length. Main access roads are gated and there are 11 kilometers of existing security fencing. A constant effort is needed to maintain a Closed Watershed Policy. Through monitoring, high incident areas are identified, security plans are developed, and security infrastructure (fencing, gates and signage) is installed or upgraded where required.* ***The uplift in provisional funding requested in 2017 has been reduced given full integration of the Weeks Lake area within the GVWSA, completion of fencing and gates related to the Sooke Hills Wilderness Trail and with seperate capital projects for autogates.***

Proj. No.	17-29	**Capital Project Title**	Water Supply Area Equipment Replacement	**Capital Project Description**	Hydrometeorological, fireweather and wildfire suppression equipment replacement.
Asset Class	E	**Board Priority Area**	No Alignment	**Corporate Priority Area**	Water

Project Rationale *This provides annual funding for the replacement or upgrading of equipment for wildfire suppression and spill response, fire weather stations, hydro-meteorological monitoring and water quality sampling and monitoring equipment. Given an expansion of the hydrology and meteorology network of stations and sensors, an additional $50,000 per year is added in 2020 and going forward.* ***In 2021 and going forward, funding is reduced by $20,000 as water quality equipment will be funded under a separate line item (21-17).***

Proj. No.	17-30	**Capital Project Title**	Transmission Main Repairs	**Capital Project Description**	Emergency repairs to the transmission mains.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Each year a visual inspection of this critical supply tunnel is carried out by CRD staff. This capital item allows for minor repairs that are discovered during these inspections. This also allows for annual funding for repair of emergency breaks on large diameter supply mains.*

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Proj. No.	17-31	**Capital Project Title**	Transmission System Components Replacement	**Capital Project Description**	Replacement and repair of transmission components.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This is an annual allowance for the capital costs for the replacement and repair of supply system components that fail under normal operation and maintenance during the year.*				

Proj. No.	17-33	**Capital Project Title**	Disinfection Equipment Parts Replacement	**Capital Project Description**	Replacement of incidental equipment and parts associated with the disinfection system.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The annual work includes the replacement of the plastic gas feed piping that has become very brittle, installing air valves on the ammonia solution lines, installing and replacing shut off valves on the booster pumps supply piping, installing indicator stems on UV cooling water valves, relocating the UV cooling water feed pipes, improving the landscaping around the UV building to reduce dust and other minor upgrades.*				

Proj. No.	17-34	**Capital Project Title**	Supply System Computer Model Update	**Capital Project Description**	Annual update of the regional hydraulic model.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This item is to allow for staff and consultant time each year to keep the hydraulic computer model current.*				

Proj. No.	19-16	**Capital Project Title**	Dam Improvements	**Capital Project Description**	Items not covered by Dam Safety Reviews, but brought up in Dam Safety Inspections and Dam Safety Reviews
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Dam Satey Inspections are carried out throughout the year and result in minor improvements at each dam annually. These improvements are minor in nature and are typically not covered in the Dam Safety Review. Funds are required to carry out the dam safety improvements resulting from Dam Safety Inspections.*				

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Proj. No.	19-22	**Capital Project Title**	SCADA Repairs & Equipment Replacement	**Capital Project Description**	Items not covered by the SCADA Replacement and SCADA Master Plan, but integral in maintaining the SCADA System and revenue meter system.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This item is to allow for unplanned SCADA repairs and equipment replacement not covered by the capital projects SCADA Replacement.*				

Proj. No.	21-15	**Capital Project Title**	Corrosion Protection	**Capital Project Description**	Replace corrosion protection assets, such as coatings, for the transmission system when identified.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*There are numerous assets with varying levels of corrosion protection throughout the RWS system. Funds are required to ensure that corrosion protection assets are replaced or rehabilitated when identified.*				

Proj. No.	21-16	**Capital Project Title**	Valve Chamber Upgrades	**Capital Project Description**	Replace failing valves and appurtenances along the RWS supply system.
Asset Class	S	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*The RWS system has numerous isolation and air valves along the transmission system, usually in underground chambers. Funds are required for replacement of valves and chamber upgrades as they are identified.*				

Proj. No.	21-17	**Capital Project Title**	Water Quality Equipment Replacement	**Capital Project Description**	Replacement of water quality equipment for the water quality lab and water quality operations
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This provides annual funding for the replacement or upgrading of equipment for the water quality lab, sampling, and operations. Of this provisional budget, $20,000 was previously included in item 17-29 (Water Supply Area annual provisional budget)*				

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Proj. No.	21-18	**Capital Project Title**	LIMS support	**Capital Project Description**	Support for LIMS database
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*Provides for support for the laboratory information management system*				

Proj. No.	17-35	**Capital Project Title**	Vehicle & Equipment Replacement (Funding from Replacement Fund)	**Capital Project Description**	This is for replacement of vehicles and equipment used by CRD Water Services for the day-to-day operation and maintenance of the supply system.
Asset Class	V	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*This is for replacement of vehicles and equipment used by CRD Water Services for the day-to-day operation and maintenance of the supply system. The Equipment Replacement Fund is used to fund the expenditure.*				

Proj. No.	20-22	**Capital Project Title**	Vehicle for the Dam Safety Program	**Capital Project Description**	New pick up
Asset Class	V	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*An additional pick up is required for the dam safety program.*				

Proj. No.	20-23	**Capital Project Title**	Vehicle for the CSE Support Program	**Capital Project Description**	New Transit Van
Asset Class	V	**Board Priority Area**	0	**Corporate Priority Area**	0
Project Rationale	*A new Transit van is required to support the Confined Space Entry Support program.*				

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Proj. No.	21-30	**Capital Project Title**	Vehicle for Warehouse Operations	**Capital Project Description**	New pick up
Asset Class	V	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *For use of the warehouse worker to source supplies and materials in support of the remote sites.This warehouse worker will maintain wastewater stores and will travel and transport as required items between stores locations. A pickup truck will be required.*

Proj. No.	21-24	**Capital Project Title**	ATV with Tracks (replace Gator)	**Capital Project Description**	Vehicle to access weather stations during snow conditions
Asset Class	V	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The replacement of the gator with an ATV with tracks will be used to access weather stations in the winter.*

Proj. No.	21-25	**Capital Project Title**	UV Plant Safety Audit and Equipment Replacement	**Capital Project Description**	Carry out an audit of the occupied office area of the UV Plant and carry out upgrades
Asset Class	V	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The UV Plant serves as the main occupational space for the UV and Chloramination plant operators. Since construction in 2004 an audit and update of the occupied space has not been carried out to ensure the space meets the current needs. Funds are required to carry out the audit and carry out upgrades.*

Service: **2.670/2.680** **Regional Water Supply & JDF Water Distribution Combo**

Proj. No.	16-01	**Capital Project Title**	Upgrades to Buildings at 479 Island Highway	**Capital Project Description**	Maintenance and changes to buildings and office layouts.
Asset Class	B	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The budget includes the following funds to upgrade and renew the buildings at 479 Island Highway:*
• Repairs, upgrades and changes to the buildings (provisional $50,000)
• Painting of the buildings. (provisional $10,000 annually)
• Repair and replacement of carpets, floors and walls. (provisional $10,000 annually)
• Repair, refurbishment and replacement of equipment and property. (provisional $10,000 annually)

Proj. No.	17-01	**Capital Project Title**	Voice Radio Upgrade	**Capital Project Description**	Replacement of end of life voice radio system repeaters, office, vehicle and handheld radios.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Service Life and projected replacement:*
• The service life of the mobile and portable units was forecast as 10 years at minimum, 15 years at maximum in 2005.
• The present radio models used in the system have just been taken out of production by the manufacturer, there will be no new units available for purchase as of July 1, 2015.
• Support for repairs and maintenance of the present radio will continue for the next 3 years at least. •
There are no pressing issues with equipment maintenance or repairs, present repair rates suggest we can maintain the system for the next few years, and perhaps reach a 12-15 year lifespan on the present equipment.

Proj. No.	20-01	**Capital Project Title**	Portable Pump Station	**Capital Project Description**	Portable pump station to provide backup when a pump station is offline, in construction or to bypass a section of
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The RWS and JdF operation numerous water mains and pump stations. There are situations, when a pump station fails, construction of a pump station or bypassing a section of pipe, where a portable pump station is required to maintain the level of service. Funds will be used in 2020 to design and in 2021 to procure a portable pump station.*

Service: **2.670/2.680** **Regional Water Supply & JDF Water Distribution Combo**

Proj. No.	21-01	**Capital Project Title**	Storage Container for vehicle and equipment Tires	**Capital Project Description**	Tires removed from vehicles are stored on site outside of the Fleet office. They need to be stored in a more safe and
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The tires that are purchased for replacing and winter rotating are stored outside the fleet office on the mezzanine. These tires which include large truck and equipment tires are bulky and heavy. Lifting these tires onto the mezzanine has been identified as a safety hazzard and requires more than one person. A solution to this is to purchase a storage container that can be placed and locked in the yard at 479 for the storage of the tires. The container will be at ground level which means that the onsite forklift can be used to move the tires around.*

Proj. No.	17-03	**Capital Project Title**	Office Equipment, Upgrades and Replacements	**Capital Project Description**	Upgrade and replacement of office equipment as required.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Funds will be used for the replacement and upgrading of office equipment and furniture, as required.*

Proj. No.	17-04	**Capital Project Title**	Computer Upgrades	**Capital Project Description**	Annual upgrade and replacement program for computers, copiers, printers, network equipment as required.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *This is an annual upgrading and replacement program of computers, photocopiers, network, monitoring and associated equipment, as required. This item has been increased from $160,000 to $175,000 annually to reflect actual costs.*

Capital Budget
Network Switch Maintenance $10,000
Additional Wireless Access Points and Maintenance $15,000
Photocopier Replacement $20,000
Additional Data Storage $15,000
Replacement Computers $75,000
Equipment Maintenance (contingency) $23,000
Replace Access Control System - Gates/ Video Cameras $12,000
Total Capital $170,000

Service: **2.670/2.680** **Regional Water Supply & JDF Water Distribution Combo**

Proj. No.	17-05	**Capital Project Title**	Development of the Maintenance Management Systems	**Capital Project Description**	Develop maintenance management system.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *The maintenance management system needs further development to meet user needs and to facilitate reporting. It is proposed that funds be approved for the following IT related projects:-*
• Develop a dashboard to display information.
• Investigate standardization of SAP mobile platform.

Proj. No.	17-06	**Capital Project Title**	Small Equipment & Tool Replacement (Water Operations)	**Capital Project Description**	Replacement of tools and small equipment for Water Operations as required.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Funds will be used for replacement of a variety of Operations and Welding equipment such as cutting saws, portable generators, gas detectors, Hilti drills,plasma cutter, wire welder, etc.*

Proj. No.	17-07	**Capital Project Title**	Small Equipment & Tool Replacement (Corporate Fleet)	**Capital Project Description**	Replacement of tools and small equipment for Fleet as required.
Asset Class	E	**Board Priority Area**	0	**Corporate Priority Area**	0

Project Rationale *Funds will be used for replacement of a variety of Fleet small equipment and tools as required. This includes provision to replace the Vehicle OBD reader for reading engine codes and the shop air compressor.*

2.670 Regional Water Supply
Asset/ Reserve Schedule
2021 - 2025 Financial Plan

Asset Profile

Regional Water Supply

System assets include the lands, dams and source water reservoirs within the water supply areas, intake and source conduits, two water treatment plants, pressure regulating facilities, nine supply mains, three balancing reservoirs and revenue water meters in the water transmission system.

Equipment Replacement Reserve Schedule

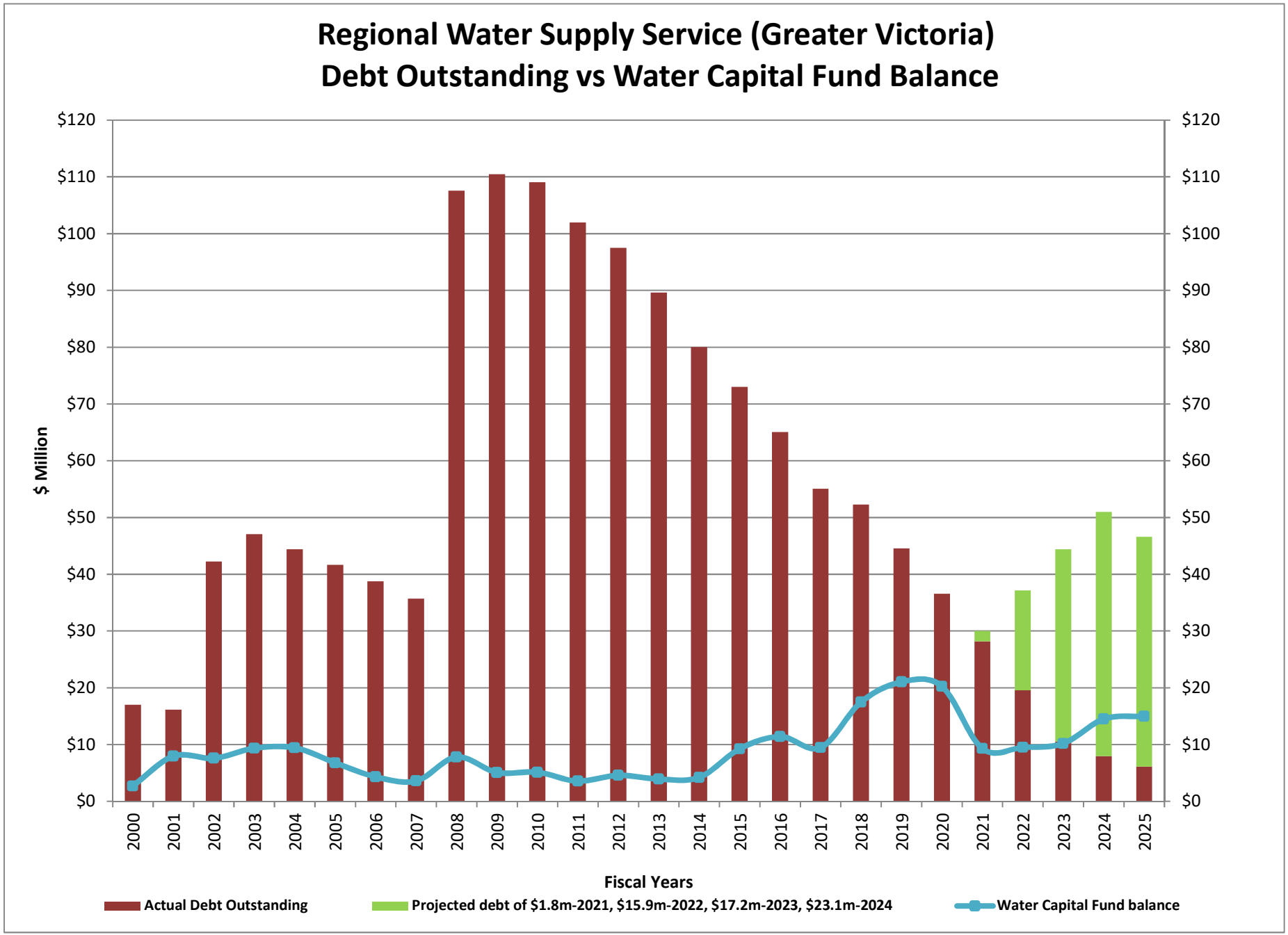
Reserve Fund: 2.670 Regional Water Supply Equipment Replacement Reserve (covered by CRD-ERF Bylaw)

Fund: 1022 Fund Center: 101454

	Actual	Estimated	Budget				
	2019	2020	2021	2022	2023	2024	2025
Beginning Balance	2,510,919	2,031,817	2,049,161	2,158,001	2,278,742	2,363,053	2,440,804
Equipment purchases (Based on Capital Plan)	(914,681)	(367,000)	(222,000)	(215,000)	(265,000)	(280,000)	(280,000)
Transfer from Operating Budget	274,300	299,294	297,540	303,491	309,561	315,751	322,066
Proceeds on disposals	133,812	55,050	33,300	32,250	39,750	42,000	42,000
Interest Income*	27,467	30,000					
Ending Balance $	**2,031,817**	**2,049,161**	**2,158,001**	**2,278,742**	**2,363,053**	**2,440,804**	**2,524,870**

General Comments:
Reserve Fund is used for the purpose of replacing fleet vehicles including heavy equipment and associated mobile components, as outlined in the capital plan. Proceeds from disposals are estimated at 15% of replacement equipment purchases. Note not all vehicles are sold within the year in which they are replaced.

* Interest should be included in determining the estimated ending balance for the current year. Interest in planning years nets against inflation which is not included.


Regional Water Supply Service (Greater Victoria)
Debt Outstanding vs Water Capital Fund Balance
$ Million
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Fiscal Years
Actual Debt Outstanding
Projected debt of $1.8m-2021, $15.9m-2022, $17.2m-2023, $23.1m-2024
Water Capital Fund balance

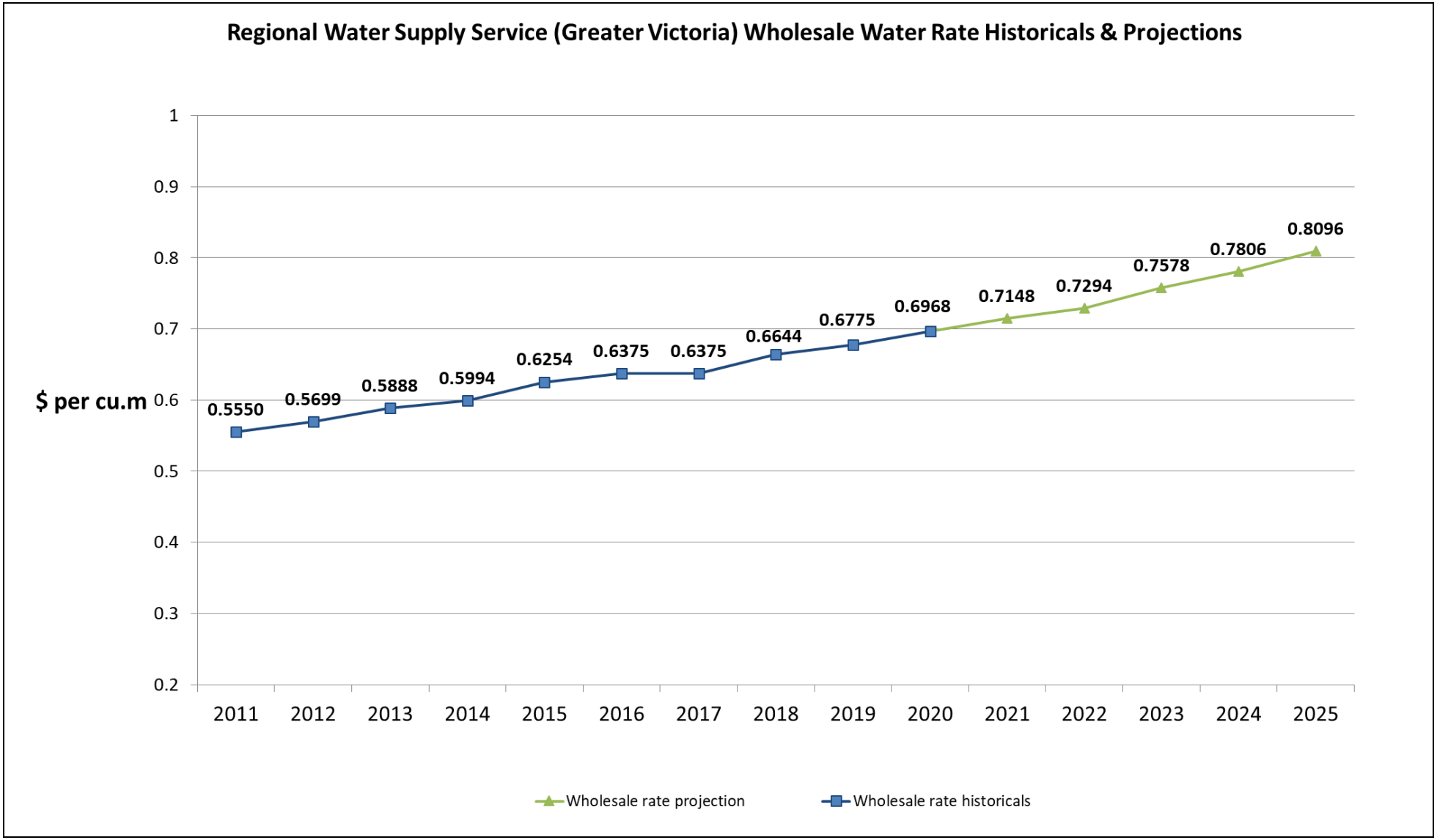
REGIONAL WATER SUPPLY COMMISSION
Agricultural Water Rate Funding Comparisons 2011 - 2019

		No. of AR Accounts	No. of AG Accounts	AR Volume m3	AG Volume m3	Avg AR Volume m3 (Vol/Accts)	Avg AG Volume m3	Agri Rate Consumption Costs	Agri Fixed Charge Costs	Total Agri Subsidy Paid out (Cons + Fixed)	Avg Agri Cost $ (Paid/Accts)	%age of Total Paid out	Rate Differential: Municipal Rate m3	Agri Rate m3	Muni-CRD Diff m3
													A	B	A - B
Western Communities & Sooke *															
	2019	86	14	36,598	50,277	426	3,591	$ 165,297	$ -	$ 165,297	$ 1,653	11.1%	$ 2.1132	$ 0.2105	$ 1.9027
	2018	95	18	40,657	19,669	428	1,093	$ 112,411	$ -	$ 112,411	$ 995	7.9%	$ 2.0739	$ 0.2105	$ 1.8634
	2017	81	11	33,458	11,628	413	1,057	$ 76,754	$ -	$ 76,754	$ 834	5.6%	$ 1.9129	$ 0.2105	$ 1.7024
	2016	80	11	41,248	8,652	516	787	$ 84,950	$ -	$ 84,950	$ 934	5.9%	$ 1.9129	$ 0.2105	$ 1.7024
	2015	79	11	33,537	7,078	425	643	$ 64,968	$ -	$ 64,968	$ 722	5.1%	$ 1.8101	$ 0.2105	$ 1.5996
	2014	79	11	29,419	9,074	372	825	$ 60,769	$ -	$ 60,769	$ 675	5.6%	$ 1.7892	$ 0.2105	$ 1.5787
	2013	80	11	25,532	5,578	319	507	$ 46,438	$ -	$ 46,438	$ 510	4.7%	$ 1.7032	$ 0.2105	$ 1.4927
	2012	79	13	23,617	5,932	299	456	$ 40,828	$ -	$ 40,828	$ 444	4.3%	$ 1.5922	$ 0.2105	$ 1.3817
	2011	75	11	27,910	4,893	372	445	$ 43,641	$ -	$ 43,641	$ 507	5.2%	$ 1.5409	$ 0.2126	$ 1.3283
Central Saanich															
	2019	276	47	421,804	210,499	1,528	4,479	$ 862,430	$ 2,162	$ 864,592	$ 2,677	58.0%	$ 1.7260	$ 0.2105	$ 1.5155
	2018	278	49	378,593	297,433	1,362	6,070	$ 866,699	$ 7,003	$ 873,702	$ 2,672	61.3%	$ 1.6350	$ 0.2105	$ 1.4245
	2017	296	49	398,087	298,522	1,345	6,092	$ 792,125	$ 7,003	$ 799,128	$ 2,316	58.7%	$ 1.5575	$ 0.2105	$ 1.3470
	2016	297	51	446,241	303,419	1,502	5,949	$ 879,396	$ 7,191	$ 886,587	$ 2,548	61.1%	$ 1.5139	$ 0.2105	$ 1.3034
	2015	294	51	412,060	246,292	1,402	4,829	$ 739,282	$ 7,144	$ 746,426	$ 2,164	58.4%	$ 1.4582	$ 0.2105	$ 1.2477
	2014	294	49	361,801	190,895	1,231	3,896	$ 596,515	$ 6,808	$ 603,323	$ 1,759	55.7%	$ 1.4033	$ 0.2105	$ 1.1928
	2013	296	45	321,518	194,848	1,086	4,330	$ 542,837	$ 4,186	$ 547,023	$ 1,604	55.7%	$ 1.3799	$ 0.2105	$ 1.0525
	2012	280	41	325,663	210,906	1,163	5,144	$ 518,454	$ 5,658	$ 524,112	$ 1,633	55.6%	$ 1.2841	$ 0.2105	$ 0.9662
	2011	210	38	312,702	169,206	1,489	4,453	$ 462,183	$ 5,244	$ 467,427	$ 1,885	56.1%	$ 1.2867	$ 0.2126	$ 0.9667
North Saanich **															
	2019	94	15	58,278	95,030	620	6,335	$ 201,370	$ -	$ 201,370	$ 1,847	13.5%	$ 1.5240	$ 0.2105	$ 1.3135
	2018	100	16	97,574	70,666	976	4,417	$ 220,982	$ -	$ 220,982	$ 1,905	15.5%	$ 1.5240	$ 0.2105	$ 1.3135
	2017	100	13	151,773	53,551	1,518	4,119	$ 245,456	$ -	$ 245,456	$ 2,172	18.0%	$ 1.4643	$ 0.2105	$ 1.2538
	2016	100	12	148,450	36,774	1,485	3,065	$ 230,697	$ -	$ 230,697	$ 2,060	15.9%	$ 1.4560	$ 0.2105	$ 1.2455
	2015	106	14	151,656	38,066	1,431	2,719	$ 230,948	$ -	$ 230,948	$ 1,925	18.1%	$ 1.4278	$ 0.2105	$ 1.2173
	2014	98	14	133,853	30,372	1,366	2,169	$ 194,919	$ -	$ 194,919	$ 1,740	18.0%	$ 1.3974	$ 0.2105	$ 1.1869
	2013	102	13	141,845	30,647	1,391	2,357	$ 200,004	$ -	$ 200,004	$ 1,739	20.4%	$ 1.3700	$ 0.2105	$ 1.1595
	2012	99	13	117,497	45,227	1,187	3,479	$ 188,679	$ -	$ 188,679	$ 1,685	20.0%	$ 1.3700	$ 0.2105	$ 1.1595
	2011	101	13	106,393	34,921	1,053	2,686	$ 163,558	$ -	$ 163,558	$ 1,435	19.6%	$ 1.3700	$ 0.2126	$ 1.1574
Saanich															
	2019	68	51	37,086	140,512	545	2,755	$ 249,436	$ 10,278	$ 259,714	$ 2,182	17.4%	$ 1.6150	$ 0.2105	$ 1.4045
	2018	70	49	37,503	111,896	536	2,284	$ 208,786	$ 9,996	$ 218,782	$ 1,839	15.3%	$ 1.5910	$ 0.2105	$ 1.3805
	2017	80	50	38,201	132,092	478	2,642	$ 229,604	$ 9,719	$ 239,324	$ 1,841	17.6%	$ 1.5600	$ 0.2105	$ 1.3495
	2016	71	53	36,409	139,764	513	2,637	$ 237,745	$ 10,056	$ 247,802	$ 1,998	17.1%	$ 1.5600	$ 0.2105	$ 1.3495
	2015	75	51	74,841	129,225	998	2,534	$ 226,276	$ 9,727	$ 236,003	$ 1,873	18.5%	$ 1.5420	$ 0.2105	$ 1.3315
	2014	72	53	46,230	177,633	642	3,352	$ 213,981	$ 9,883	$ 223,863	$ 1,791	20.7%	$ 1.4560	$ 0.2105	$ 1.2455
	2013	65	50	35,745	122,456	550	2,449	$ 179,004	$ 9,655	$ 188,659	$ 1,641	19.2%	$ 1.3420	$ 0.2105	$ 1.1315
	2012	68	47	38,212	138,455	562	2,946	$ 180,466	$ 9,235	$ 189,701	$ 1,650	20.1%	$ 1.2320	$ 0.2105	$ 1.0215
	2011	71	46	101,235	121,896	1,426	2,650	$ 149,584	$ 9,118	$ 158,703	$ 1,356	19.0%	$ 1.1530	$ 0.2126	$ 0.9404
Totals															
	2019	524	127	553,766	496,318	1,057	3,908	$ 1,478,533	$ 12,440	$ 1,490,973	$ 2,290	100%			
	2018	543	132	554,327	499,664	1,021	3,785	$ 1,408,879	$ 16,999	$ 1,425,878	$ 2,112	100%			
	2017	557	123	621,519	495,793	1,116	4,031	$ 1,343,940	$ 16,722	$ 1,360,663	$ 2,001	100%			
	2016	548	127	672,348	488,609	1,227	3,847	$ 1,432,788	$ 17,247	$ 1,450,036	$ 2,148	100%			
	2015	554	127	672,094	420,661	1,213	3,312	$ 1,261,474	$ 16,871	$ 1,278,344	$ 1,877	100%			
	2014	543	127	571,304	407,973	1,052	3,212	$ 1,066,184	$ 16,691	$ 1,082,874	$ 1,616	100%			
	2013	543	119	524,640	353,529	966	2,971	$ 968,283	$ 13,841	$ 982,124	$ 1,484	100%			
	2012	526	114	504,989	400,520	960	3,513	$ 928,426	$ 14,893	$ 943,320	$ 1,474	100%			
	2011	457	108	548,240	330,916	1,200	3,064	$ 818,967	$ 14,362	$ 833,329	$ 1,475	100%			

* **Western Communities do not charge a fixed charge**

** **North Saanich charges the fixed charge on property taxes**

*** **AR - Agriculture/Residential customers receive a rebate on consumption over 455 cubic meters annual as the meter feeds both premise and land.**
AG - Agriculture customers receive a rebate on the entire consumption annually as the meter is dedicated only for land.


Regional Water Supply Service (Greater Victoria) Wholesale Water Rate Historicals & Projections
$ per cu.m
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.5550
0.5699
0.5888
0.5994
0.6254
0.6375
0.6375
0.6644
0.6775
0.6968
0.7148
0.7294
0.7578
0.7806
0.8096
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
Wholesale rate projection
Wholesale rate historicals

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REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, OCTOBER 21, 2020

SUBJECT **Bylaw 4382: Regional Water Supply Water Works Facilities Loan Authorization Bylaw**

ISSUE SUMMARY

A Capital Regional District (CRD) Board resolution is required to approve loan authorization Bylaw No. 4382 for the purpose of financing the Regional Water Supply five year 2021-2025 capital plan.

BACKGROUND

The most recent loan authorization for the Regional Water Supply was approved in 2013 under Bylaw 3902 to finance capital spending over 2015 to 2020. A loan authorization is typically prepared every five years, or as long-term debt is required. The Regional Water Supply capital plan (the "Capital Plan") includes planned replacement and improvements that will require borrowing of $46 million from the Municipal Finance Authority of British Columbia (MFABC). This borrowing will occur as required to meet cash flow needs for implementation of Commission approved capital projects. Under the *Local Government Act*, participating area approval is required.

The following bylaw is proposed:

Service Area	Action	Purpose	Bylaw
2.670	Loan Authorization Bylaw	To create a loan authorization bylaw to permit long-term borrowing related to the capital plan for this service.	4382 Regional Water Supply Loan Authorization Bylaw No. 5, 2020

ALTERNATIVES

Alternative 1

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.

Alternative 2

The Regional Water Supply Commission recommends to the Capital Regional District Board:
That Bylaw No. 4382 be deferred to a future meeting pending further information.

IMPLICATIONS

Financial & Legislative Implications

The loan authorization for the provisional Capital Plan is $46 million and will support the planned five year capital plan expenditures commencing in January 2021. The estimated debt servicing costs for the borrowing are included in the 2021–2025 five-year operating budget. Capital funds on hand will provide additional funds as required.

This loan authorization covers planned spending contained within the next five years of the capital plan. Actual borrowings in each of the next five years will be based on the cash flow requirements for the year, subject to the availability of funds from consumption revenue (net of operating expenditures).

Long-term borrowing (i.e. loans with a term of more than 5 years) cannot be undertaken without the loan authorization bylaw being approved by the Inspector of Municipalities after the bylaw is given three readings by the local government. In addition, in accordance with the *Local Government Act*, elector approval is required in order to approve the loan authorization bylaw. Electoral approval can be obtained through consent on behalf of two-thirds of municipal participants' councils and by alternative approval process in the Juan de Fuca Electoral Area; or by alternative approval process for the entire service area. It is recommended that elector approval be obtained by alternative approval process for the entire service area, as this process will need to be run for the Juan de Fuca Electoral Area in any event. This can be initiated when the loan authorization bylaw has received third reading.

To ensure optimization of interest and timing of long term debt, issuance of a temporary borrowing will be proposed if municipal consent is received and Ministerial Approval is obtained. The timing of the debt issuance will be based on the timing of expenditures and will be dependent on prevailing interest rates at the time. Before long term debt issuance can be exercised, a security issuing bylaw will be brought forward for approval. The term of any debt issuances under such loan authorization will be 15 years.

CONCLUSION

Capital program work on the Regional Water Supply system is planned for 2021 and ongoing. The work will be funded through a combination of capital funds on hand and borrowed funds. Timely access to the borrowed funds in 2021 is critical to meeting the capital program spending needs. To that end, a Capital Regional District (CRD) Board resolution is required to commence the loan authorization process for Bylaw No. 4382 for the purpose of financing the Regional Water Supply system five year 2021-2025 capital plan. An elector consent process will be undertaken to obtain elector approval and can be initiated once the loan authorization bylaw has received third reading.

RECOMMENDATION

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.

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, CPA, CMA, Chief Financial Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., General Manager, Integrated Water Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Bylaw 4382, "Regional Water Supply Facilities Loan Authorization Bylaw No. 5, 2020"

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4382

****

A BYLAW TO AUTHORIZE THE BORROWING OF FORTY SIX MILLION DOLLARS ($46,000,000) FOR THE PURPOSE OF ACQUIRING, DESIGNING AND CONSTRUCTING WATER WORKS FACILITIES OF REGIONAL WATER SUPPLY

****

WHEREAS:

A. Under Bylaw No. 2537, "Water Supply Local Service Area Establishment Bylaw No. 1, 1997", the Board of the Regional District established a local service for the purpose of supplying water in the Regional District;

B. It is deemed desirable to fund works relating to the acquiring, designing and constructing water distribution facilities in the Regional District water distribution system, and the work shall include the planning, study, public consultation, site selection, design, land and material acquisition, construction, supply and installation of all material, equipment and components and all construction necessary for the preparation and works relating to the acquiring, designing and constructing water distribution facilities in the Regional District water distribution system;

C. The estimated cost of the works is the sum of forty-six million dollars ($46,000,000) dollars;

D. Pursuant to s. 407 of the *Local Government Act*, participating area approval is required for this borrowing and shall be obtained by alternative approval process under s. 345 of the *Local Government Act*;

E. Financing is proposed to be undertaken by the Municipal Finance Authority of British Columbia pursuant to agreements between it and the Capital Regional District;

NOW THEREFORE the Capital Regional District Board in open meeting assembled hereby enacts as follows:

1. The Board is hereby empowered and authorized to undertake and carry out or cause to be carried out the acquisition of land, planning, study, design and construction of buildings, plant, mains, dams, and other water works facilities and equipment herein before described and to do all things necessary in connection therewith and without limiting the generality of the foregoing:

    a) to borrow upon the credit of the Regional District a sum not exceeding Forty Six Million Dollars ($46,000,000);

b) to acquire all such real property, easements, rights-of-way, leases, licenses, rights or authorities as may be requisite or desirable for or in connection with the acquisition of land, planning, study, design and construction to add, replace, upgrade water works facilities and all related ancillary works, studies and equipment deemed necessary by the Board.

2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is 15 years.

3. This Bylaw may be cited as “Regional Water Supply Water Works Facilities Loan Authorization Bylaw No. 5, 2020”.

READ A FIRST TIME THIS	__	day of	202_
READ A SECOND TIME THIS	__	day of	202_
READ A THIRD TIME THIS	__	day of	202_
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	__	day of	202_
APPROVED BY ALTERNATIVE APPROVAL PROCESS PER S.345 OF THE LOCAL GOVERNMENT ACT THIS	__	day of	202_
ADOPTED THIS	__	day of	202_

CHAIR CORPORATE OFFICER

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EEP 20-50

REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, OCTOBER 21, 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

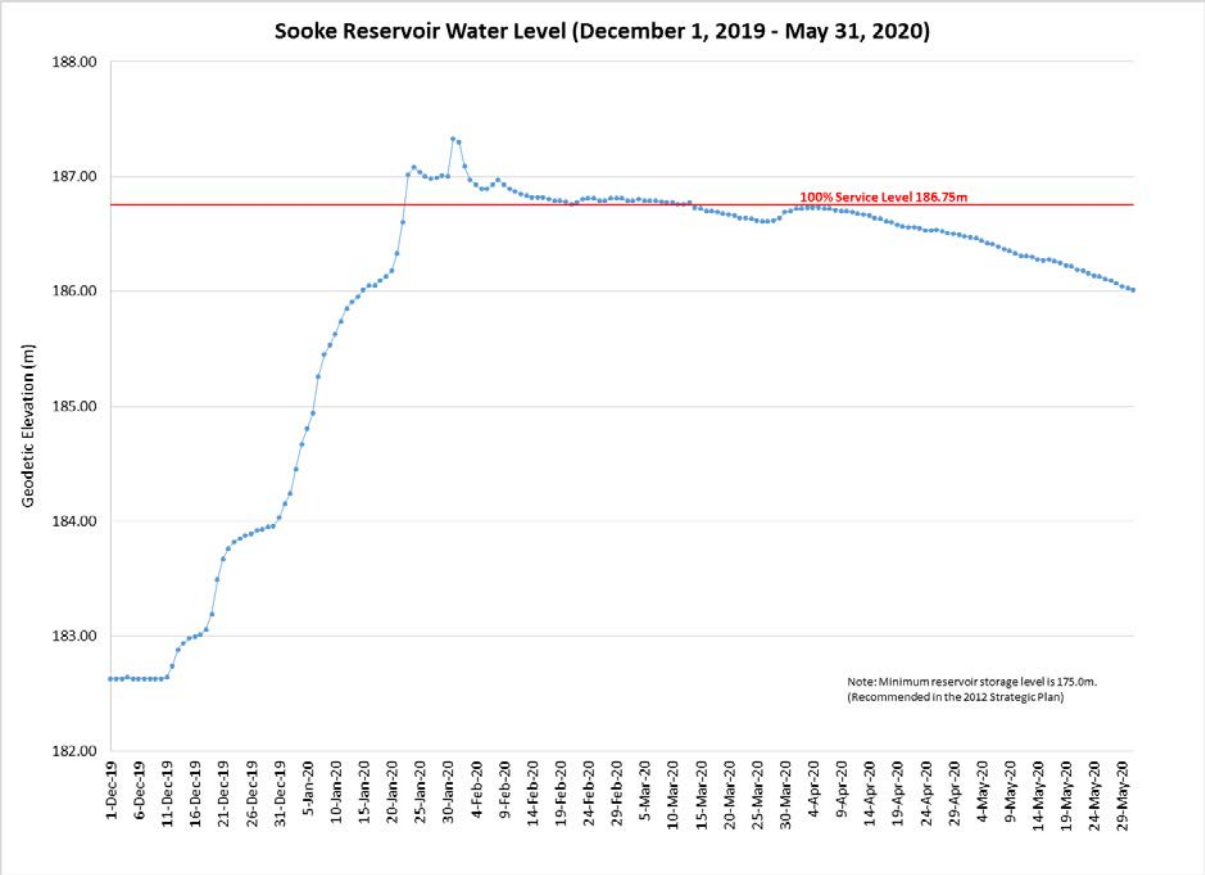
September 2020

SOURCE WATER – SOOKE LAKE RESERVOIR

Physical Parameters

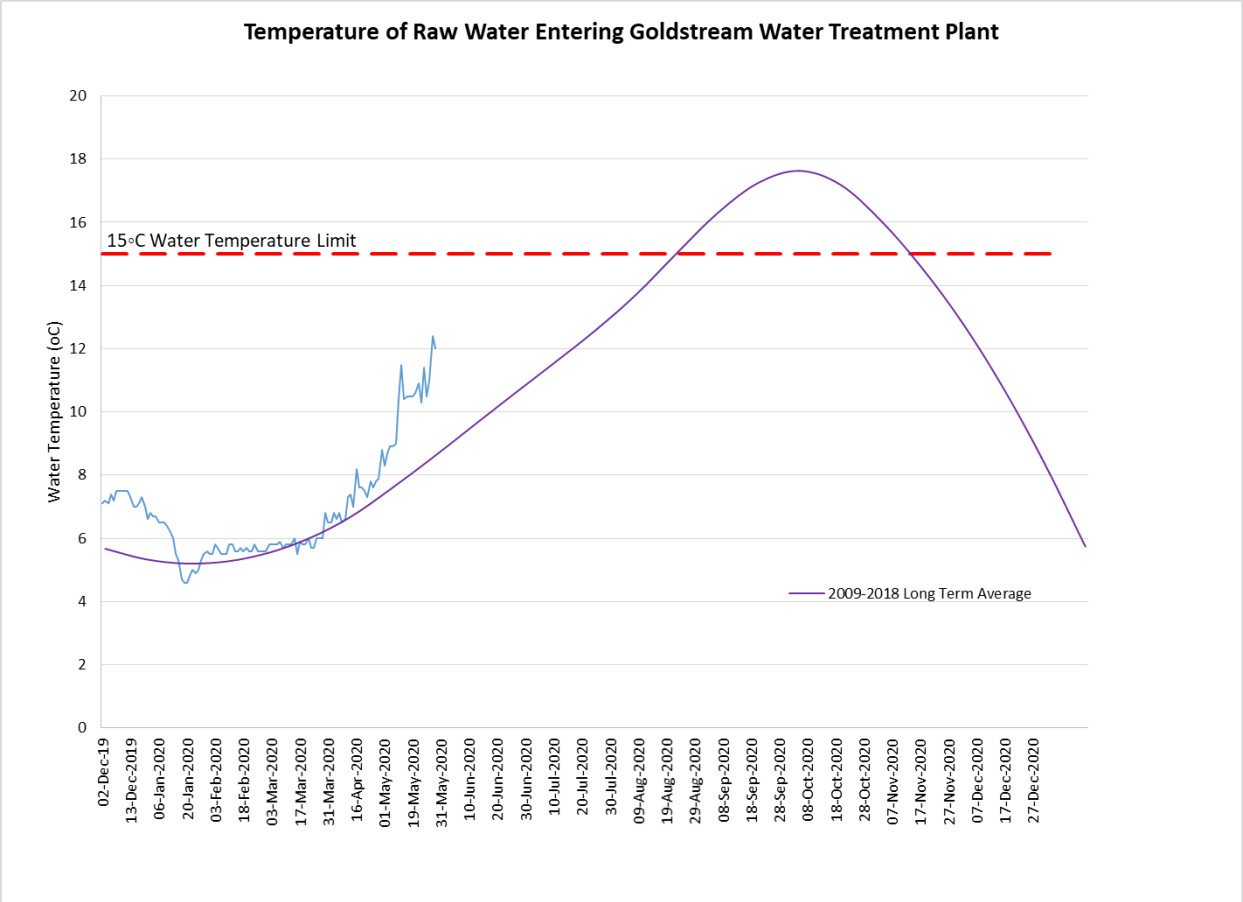
Water Levels. Sooke Lake Reservoir was at 69% of full capacity at the start of this reporting period on December 1, 2019 (Figure 1). November and December 2019 were unusually dry in comparison to previous years when Sooke Lake Reservoir was typically filled by year's end. Reservoir levels began rising 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 12ºC 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

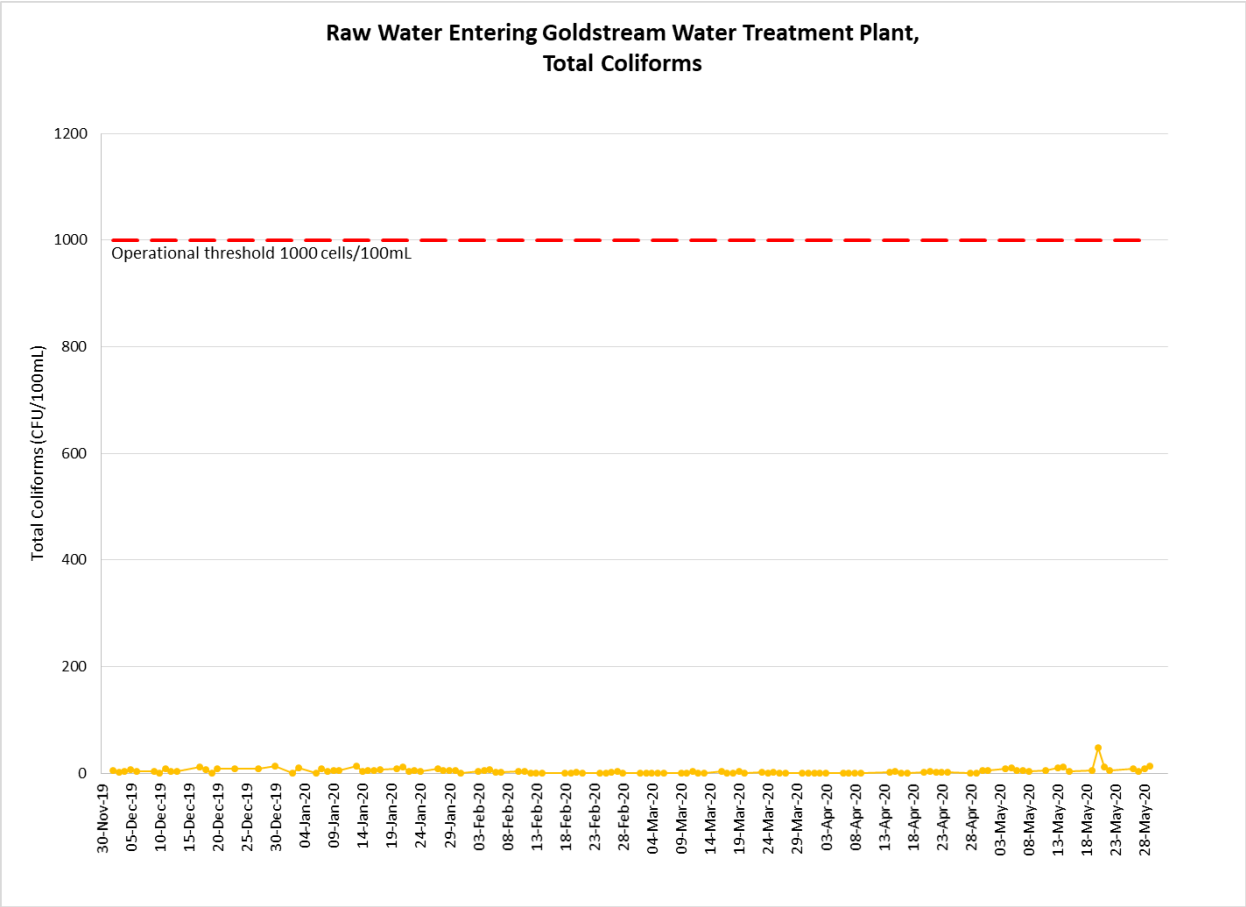
Water Transparency. The transparency of the lake water measured with the Secci Disc in the lake was high (between 7 and 9 m) and consistent with the long-term average.

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

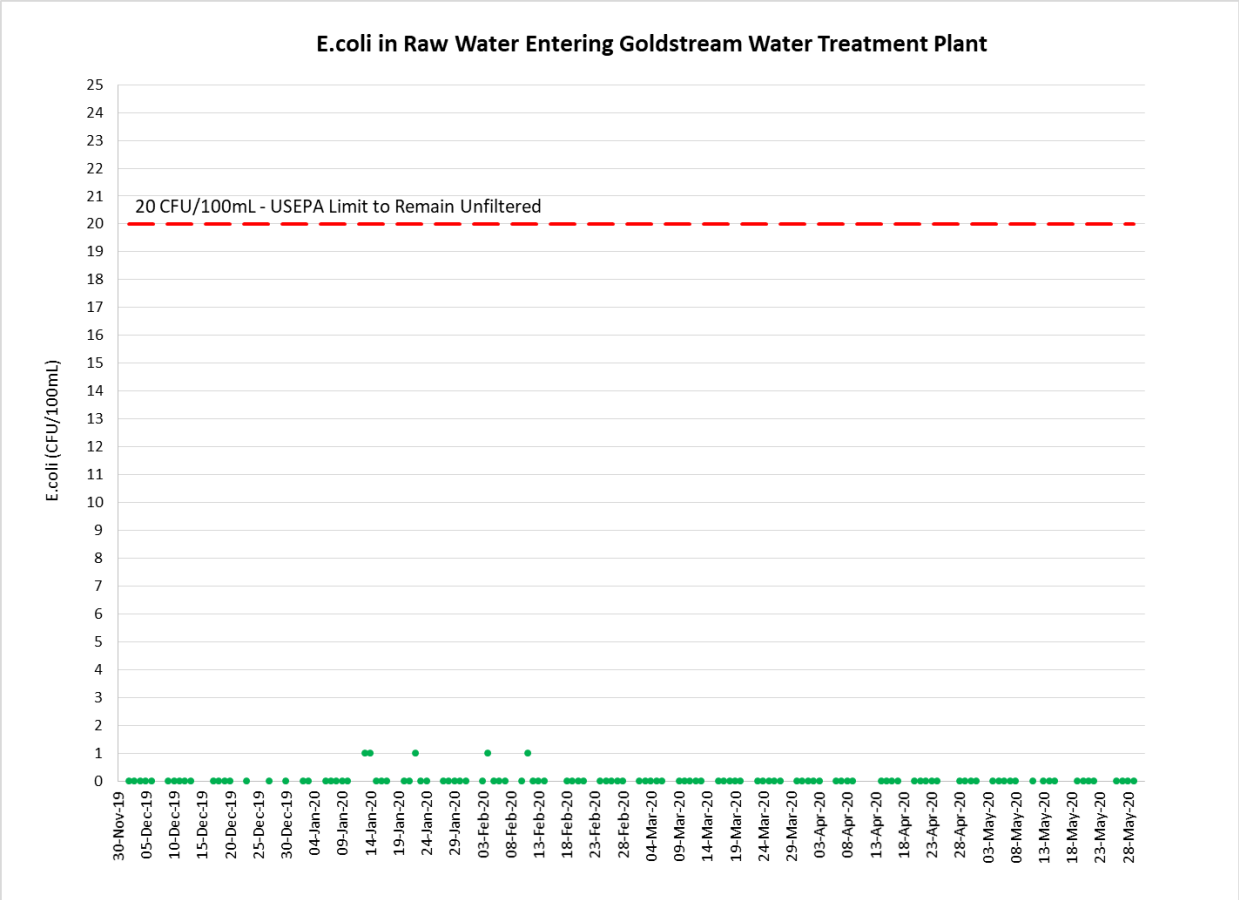
Total Coliform Bacteria and E. Coli The total coliform concentrations in the raw source water entering the Goldstream Water Treatment Plant remained very low throughout the entire reporting period (Figure 3).

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

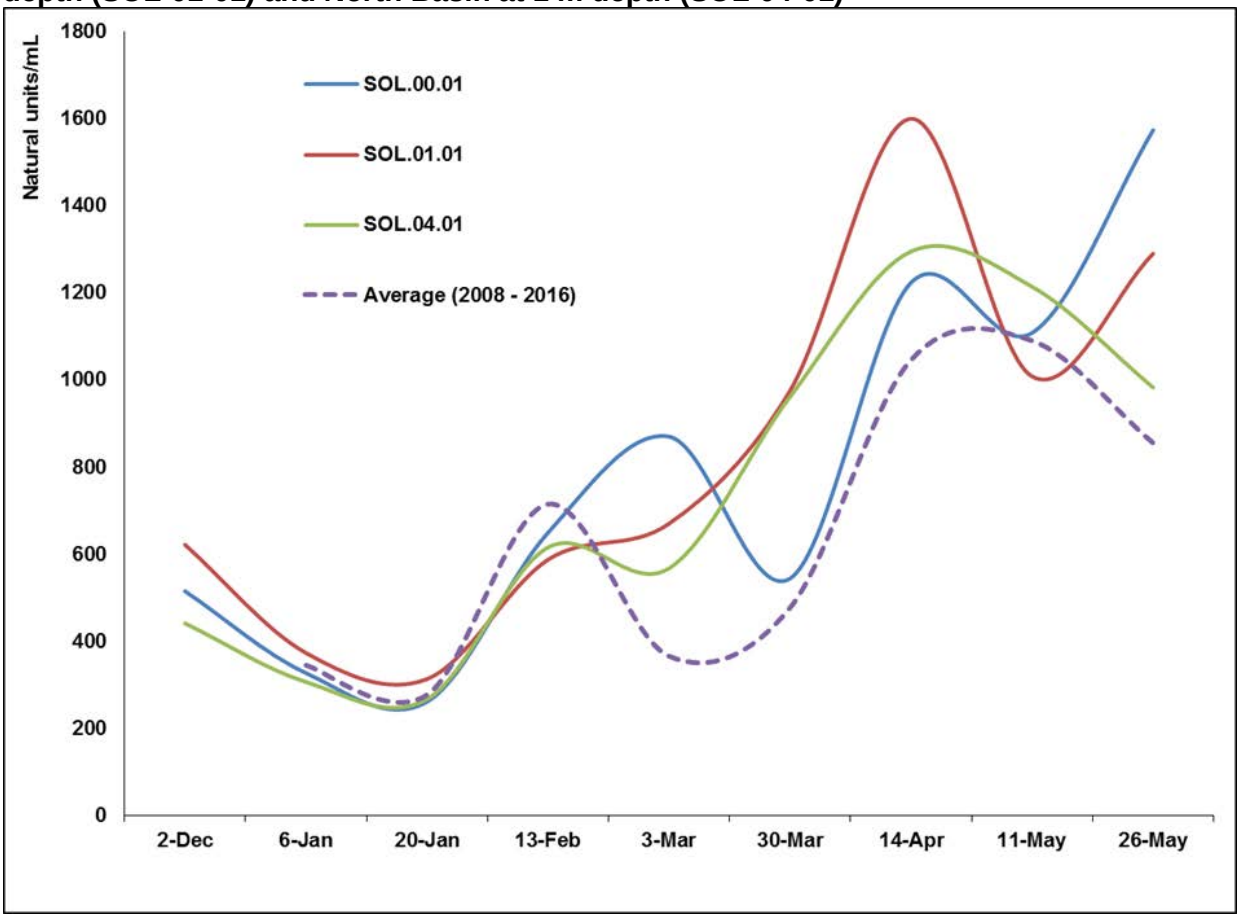
Protozoan Parasites

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

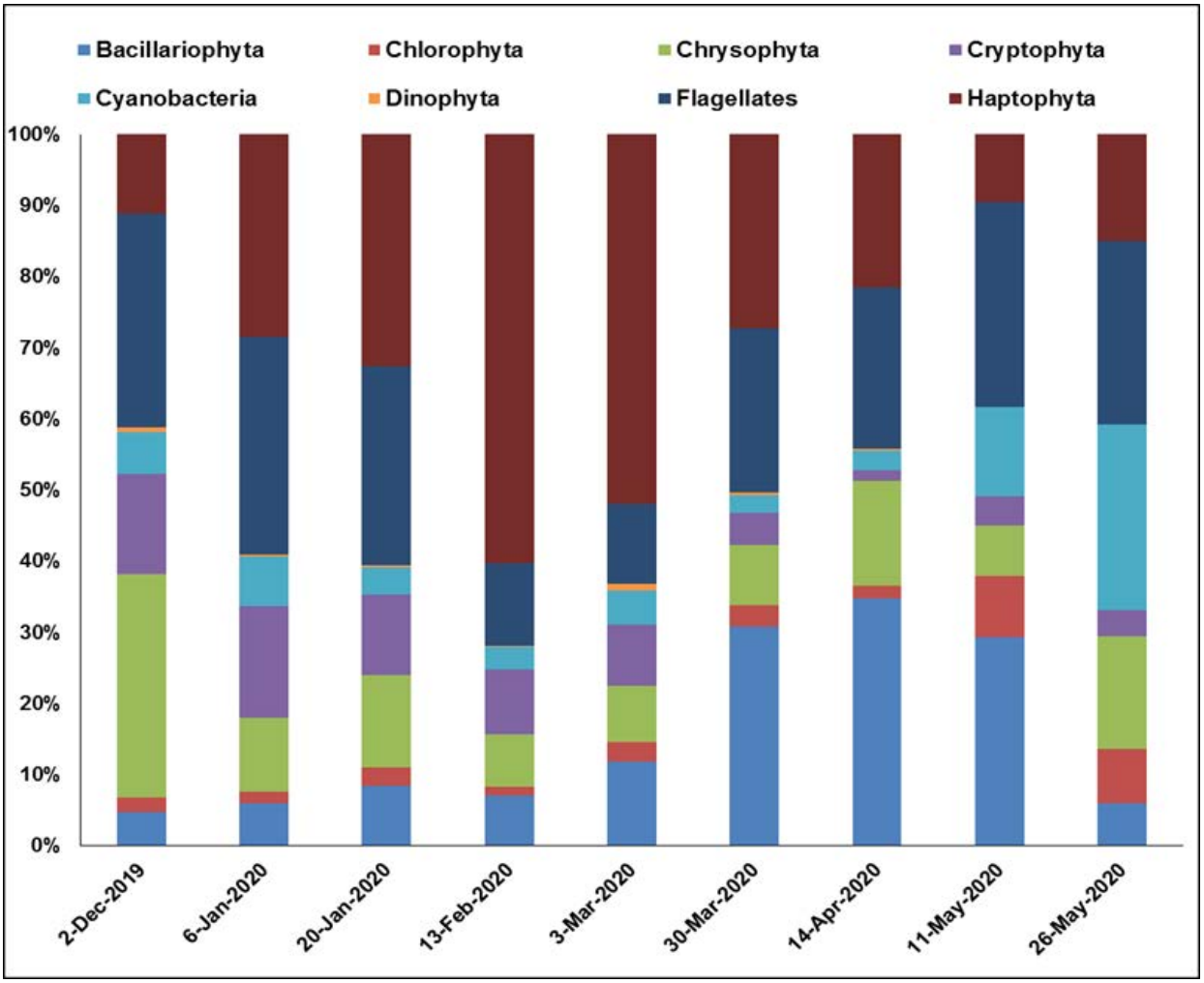
From December 2019 to May 2020, we observed that the algal abundance (natural unit counts) was quite similar to the long-term trend (Figure 5).

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.

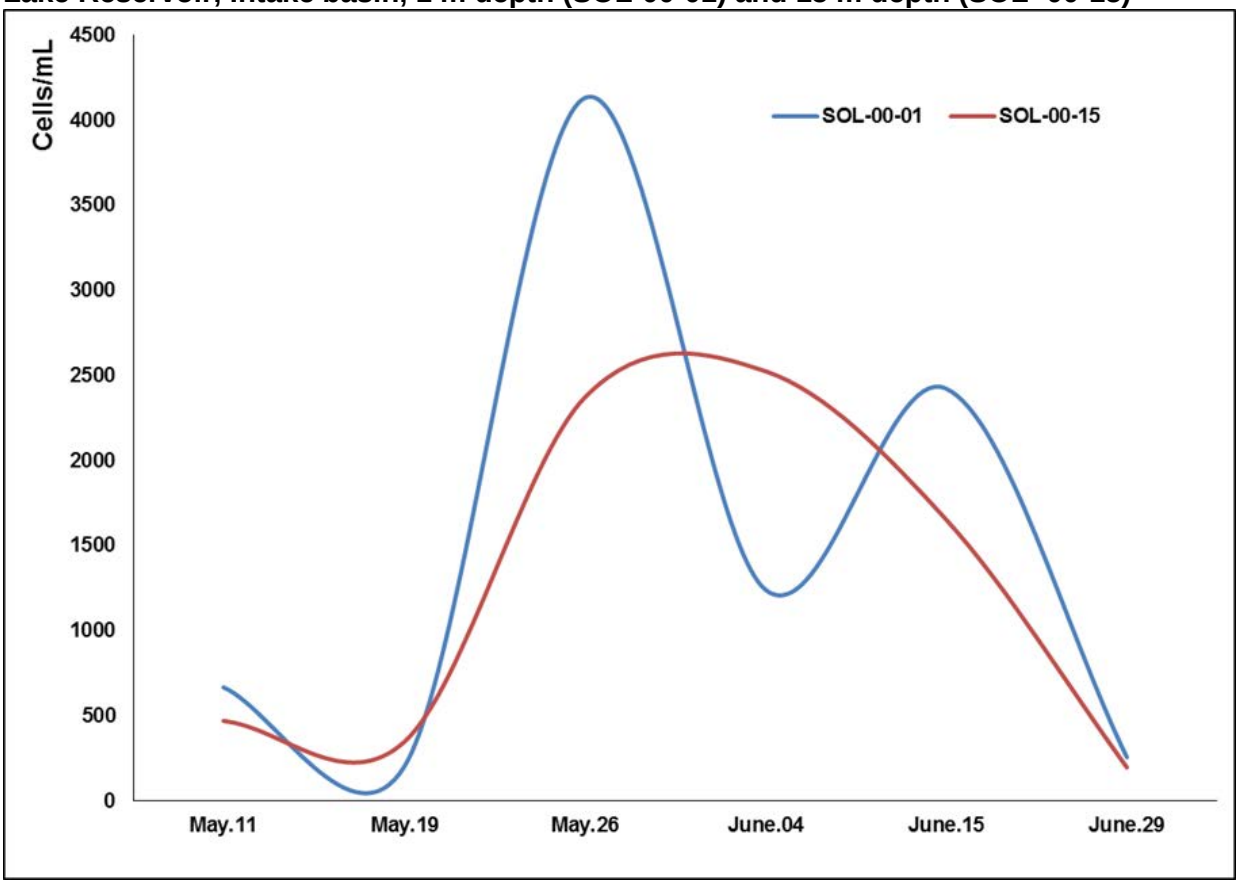
Figure 6: Abundance percent of different algal groups from December 2019 to May 2020, Sooke Lake Reservoir



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

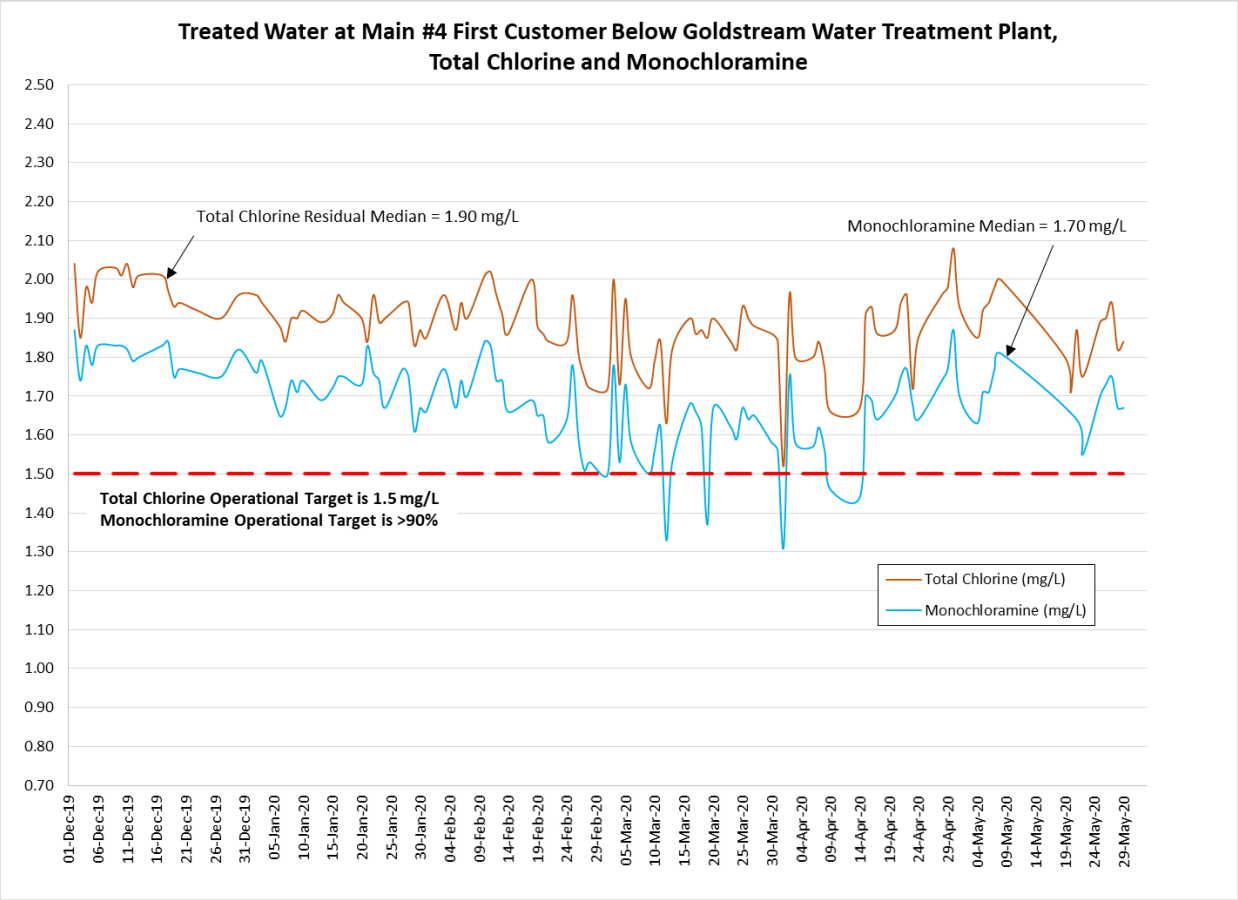
Main #4 First Customer Sampling Station Total Coliform Bacteria and E. Coli
At the Main #4 First Customer Sampling Station immediately downstream of the Goldstream Water Treatment Plant, no samples tested positive for total coliform bacteria during the entire reporting period.

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).

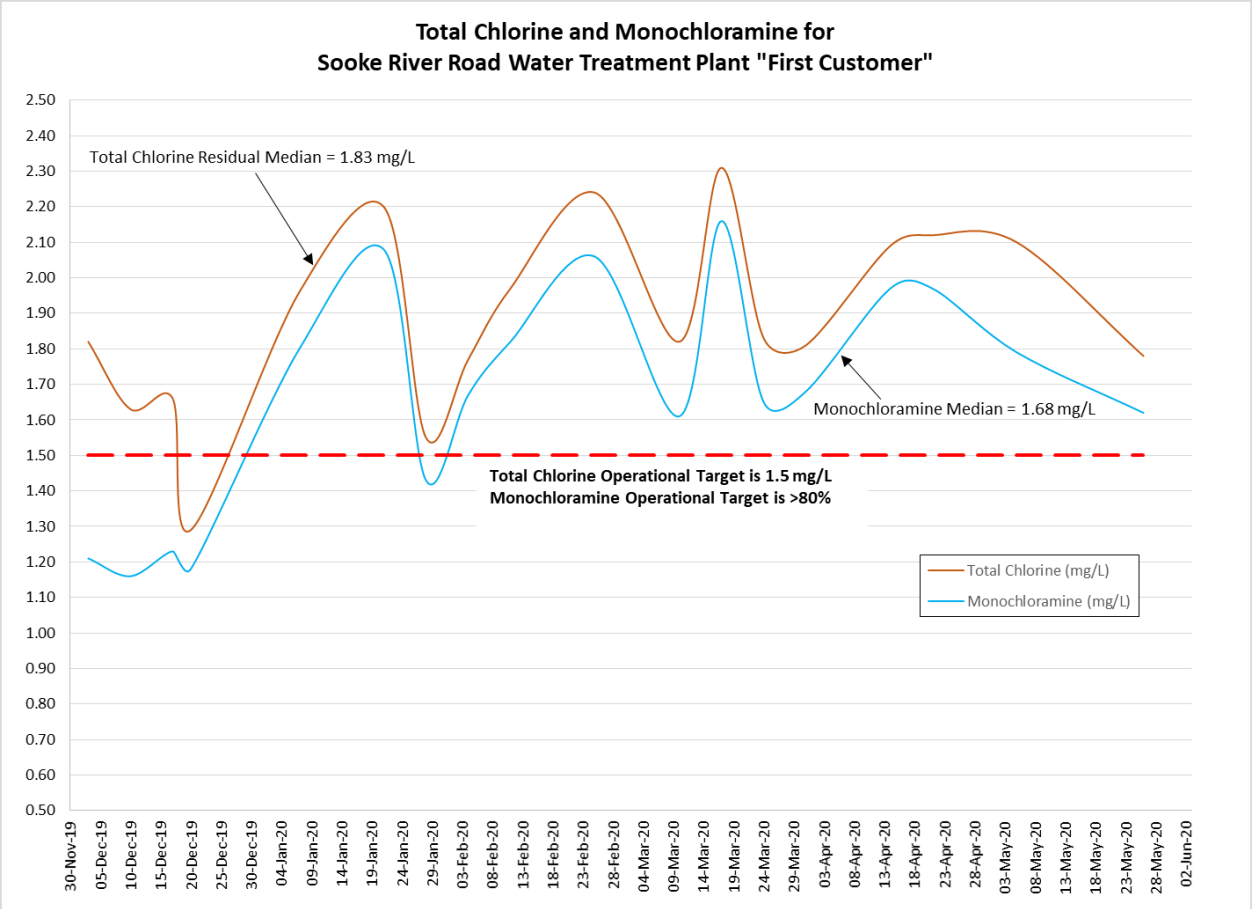
Table 5

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)	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
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)	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 ^{o}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
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 October 13, 2020

Water Supply System Summary:

1. Useable Volume in Storage:

Reservoir	October 31 5 Year Ave		October 31/19		October 11/20		% Existing Full Storage
	ML	MIG	ML	MIG	ML	MIG	
Sooke	63,824	14,041	63,500	13,970	64,751	14,245	69.8%
Goldstream	5,344	1,176	3,565	784	6,519	1,434	65.8%
Total	69,168	15,217	67,065	14,754	71,270	15,679	69.5%

2. Average Daily Demand:

For the month of October	120.2 MLD	26.45 MIGD
For week ending October 11, 2020	117.7 MLD	25.89 MIGD
Max. day October 2020, to date:	128.2 MLD	28.20 MIGD

3. Average 5 Year Daily Demand for October

Average (2015 - 2019)	108.2 MLD [1]	23.80 MIGD [2]

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

4. Rainfall October:

Average (1914 - 2019):	169.7 mm
Actual Rainfall to Date	72.9 mm (43% of monthly average)

5. Rainfall: Sep 1- Oct 11

Average (1914 - 2019):	108.7 mm
2020	210.9 mm (194% 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.

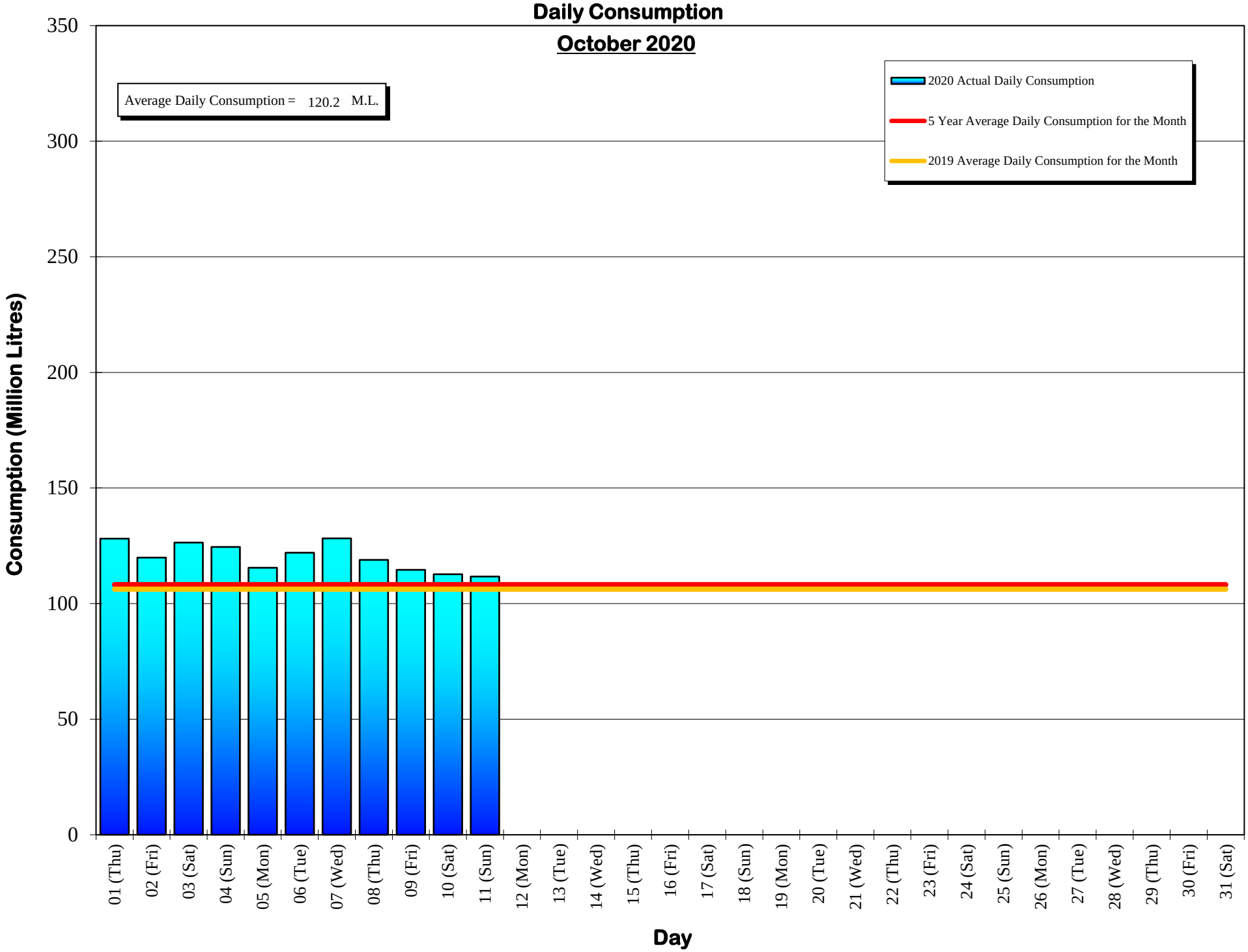
If you require further information, please contact:

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

October 2020



J:\WATERENG\HYDROLGY\AMRIT\MONTHEND.20\H2o watch 2020Cons. Chart

Daily Consumptions: - October 2020

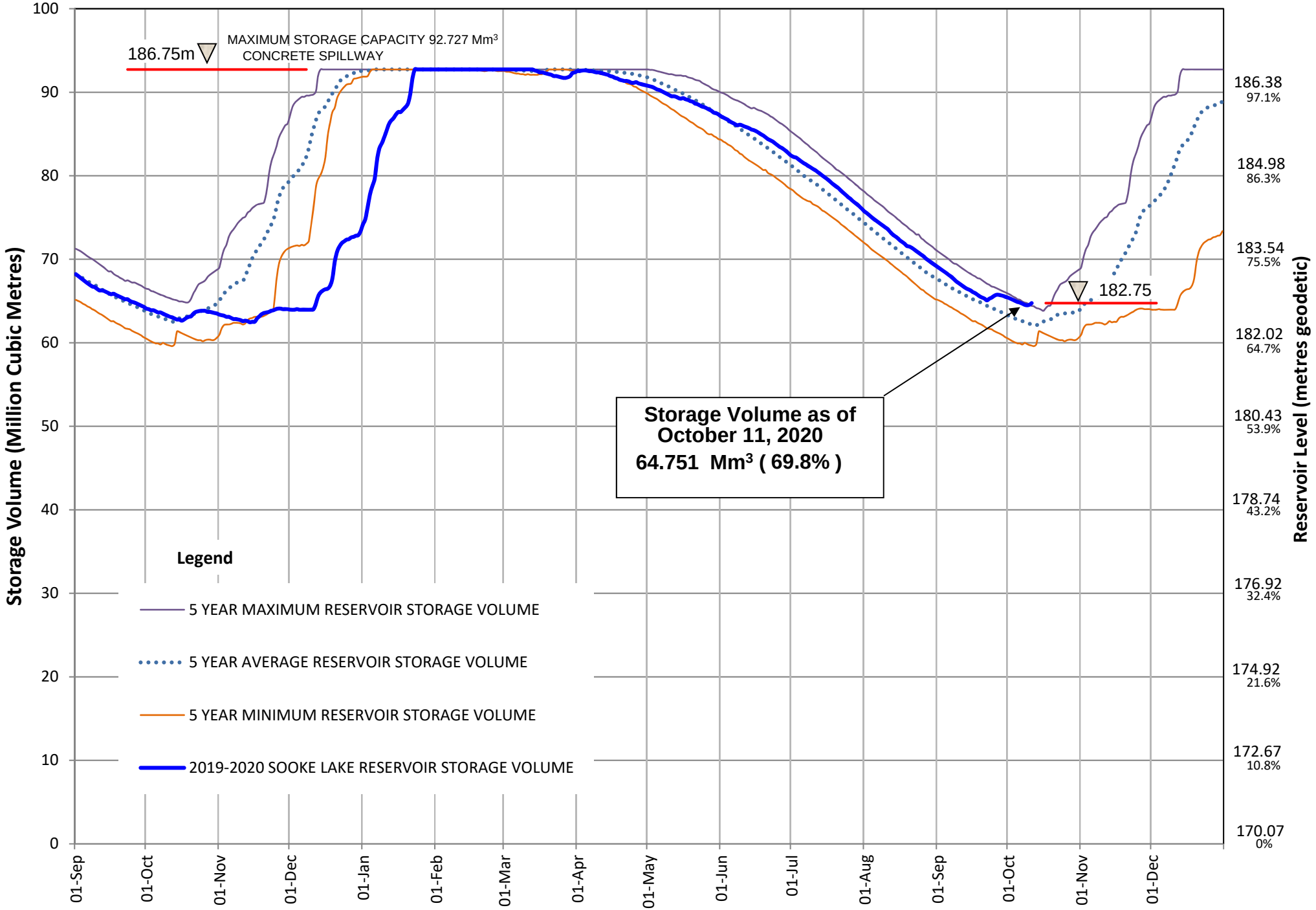
Date	Total Consumption			Air Temperature @ Japan Gulch		Weather Conditions	Precipitation @ Sooke Res.: 12:00am to 12:00am		
	(ML) [1.]		(MIG) [2.]	High (°C)	Low (°C)		Rainfall (mm)	Snowfall [3.] (mm)	Total Precip.
01 (Thu)	128.1		28.2	21	12	Sunny / Hazy skies	0.0	0.0	0.0
02 (Fri)	119.9		26.4	21	12	Sunny / P. Cloudy / Showers	0.3	0.0	0.3
03 (Sat)	126.4		27.8	19	11	Sunny / P. Cloudy	0.0	0.0	0.0
04 (Sun)	124.5		27.4	18	10	Sunny / P. Cloudy	0.0	0.0	0.0
05 (Mon)	115.5		25.4	16	11	Sunny	0.0	0.0	0.0
06 (Tue)	122.0		26.8	19	11	Sunny	0.0	0.0	0.0
07 (Wed)	128.2	<=Max	28.2	20	11	Sunny	0.0	0.0	0.0
08 (Thu)	118.9		26.1	17	11	Sunny / P. Cloudy	0.0	0.0	0.0
09 (Fri)	114.6		25.2	14	11	Cloudy / Rain	25.9	0.0	25.9
10 (Sat)	112.7		24.8	13	7	Cloudy / Showers	12.4	0.0	12.4
11 (Sun)	111.7	<=Min	24.6	13	7	Cloudy / Rain	34.3	0.0	34.3
12 (Mon)									
13 (Tue)									
14 (Wed)									
15 (Thu)									
16 (Fri)									
17 (Sat)									
18 (Sun)									
19 (Mon)									
20 (Tue)									
21 (Wed)									
22 (Thu)									
23 (Fri)									
24 (Sat)									
25 (Sun)									
26 (Mon)									
27 (Tue)									
28 (Wed)									
29 (Thu)									
30 (Fri)									
31 (Sat)									
TOTAL	1322.5 ML		290.94 MIG				72.9	0	72.9
MAX	128.2		28.20	21	12		34.3	0	34.3
AVG	**120.2**		26.45	17.4	10.4		6.6	0	6.6
MIN	111.7		24.58	13	7		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 October (1914-2019)	169.7 mm
Actual Rainfall: October	72.9 mm
% of Average	43%
Average Rainfall (1914-2019): Sept 01 - Oct 11	108.7 mm
Actual Rainfall (2020): Sept 01 - Oct 11	210.9 mm
% of Average	194%

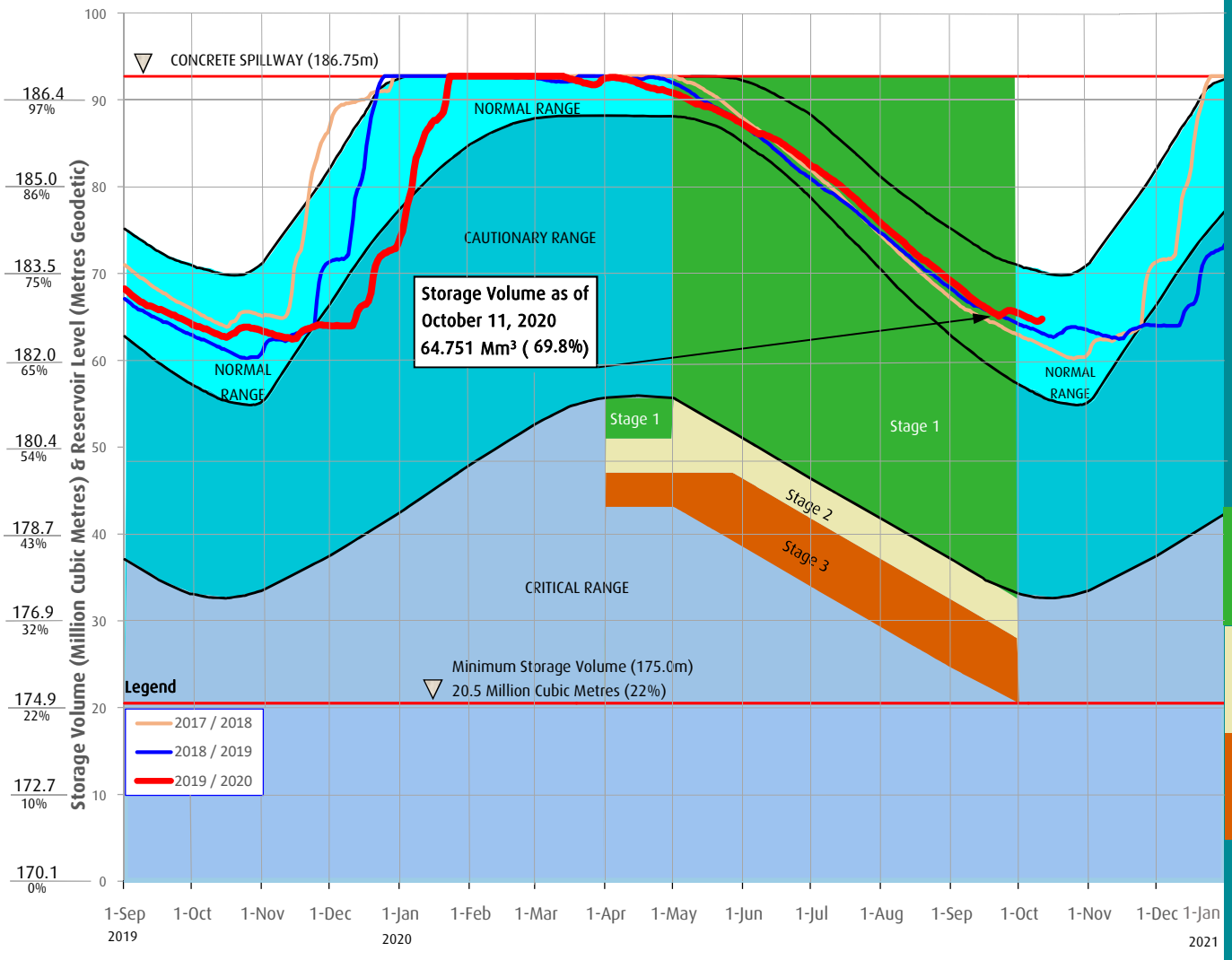
Number days with precip. 0.2 or more
4

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.

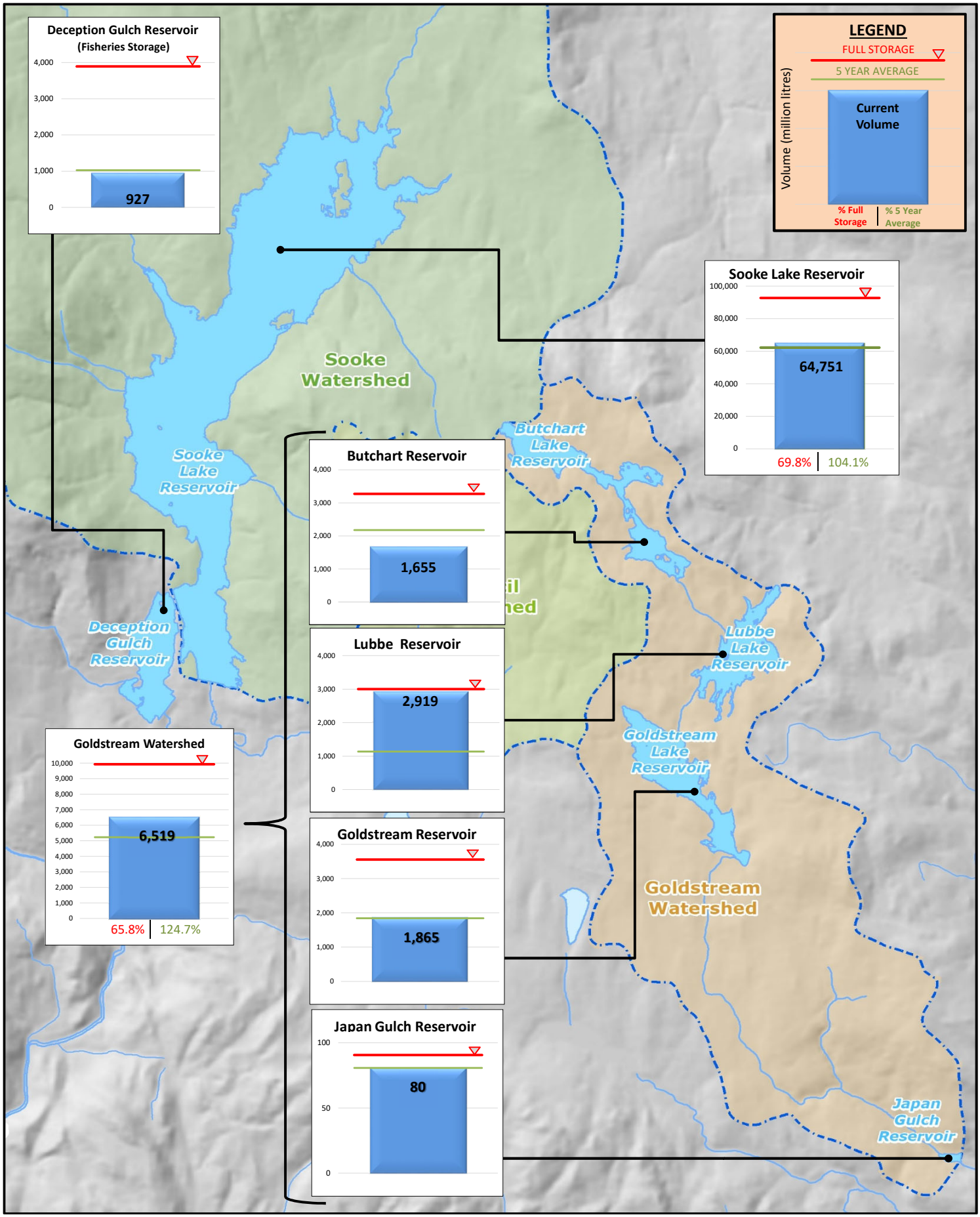
Stage 3 Is initiated when it is determined that there is a severe water supply shortage. During this time, lawn watering is not permitted. Other outdoor water use activities are restricted as well.

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

CRD

Making a difference...together

Useable Reservoir Volumes in Storage for October 11, 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

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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