



Notice of Meeting and Meeting Agenda Regional Water Supply Commission

Wednesday, July 17, 2024

11:00 AM

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

MEMBERS:

G. Baird (Chair); K. Harper (Vice Chair); J. Caradonna; N. Chambers; C. Coleman;
Z. de Vries; S. Duncan; C. Graham; S. Gray; C. Green; K. Guiry; S. Hammond;
K. Jordison; S. Kim; D. Lajeunesse; T. Morrison; T. Phelps Bondaroff;
J. Rogers; C. Stock; M. Wagner; M. Westhaver; A. Wickheim

1. TERRITORIAL ACKNOWLEDGEMENT

2. APPROVAL OF THE AGENDA

3. ADOPTION OF MINUTES

[24-732](#)

Adoption of the Minutes of the June 19, 2024 Meeting

Recommendation: That the minutes of the June 19, 2024 Regional Water Supply Commission meeting be adopted.

Attachments: [Draft Minutes, June 19, 2024](#)

4. CHAIR'S REMARKS

5. PRESENTATIONS/DELEGATIONS

Delegations will have the option to participate electronically. Please complete the online application for "Addressing the Board" on our website located here <https://www.crd.bc.ca/about/board-committees/addressing-the-board> and staff will respond with details.

Alternatively, you may email your comments on an agenda item to the Regional Water Supply Commission at iwsadministration@crd.bc.ca. Delegation requests must be received no later than 4:30 p.m. two calendar days prior to the meeting

5.1 Presentations

5.2 Delegations

- 5.2.1 [24-733](#) Delegation - Jack Hull; Resident of District of Saanich: Re: Agenda Item: 10.1. Correspondence Re: Regional Water Supply Master Plan

6. GENERAL MANAGER'S REPORT

7. COMMISSION BUSINESS**7.1 [24-730](#) Draft 2025 Strategic Plan for the Greater Victoria Water Supply System**

Recommendation: 1. That the draft 2025 Strategic Plan for the Greater Victoria Water Supply System be endorsed as amended; and
2. That staff be directed to proceed with the engagement plan.
(NWA)

Attachments: [Staff Report: Draft 2025 Strategic Plan for the Greater Victoria Water Supply Sy](#)
[Appendix A: Regional Water Supply 2017 Strategic Plan](#)
[Appendix B: February 21, 2024, 2017 RWS Strategic Plan Close-out Report](#)
[Appendix C: 2025 Draft Strategic Plan Outline](#)
[Appendix D: Comments from the Water Advisory Committee](#)
[Appendix E: Presentation](#)

Staff will be conducting a workshop with the Commission

7.2 [24-734](#) Regional Water Supply Service 2024 Mid-Year Capital Projects and Operations Update

Recommendation: There is no recommendation. The report is for information only.

Attachments: [Staff Report: RWS Service 2024 Mid-Year Cap Proj & Ops Update](#)
[Appendix A: Current Status of Active Projects](#)

7.3 [24-675](#) Water Quality Summary Report for Greater Victoria Drinking Water System - January to April 2024

Recommendation: There is no recommendation. This report is for information only.

Attachments: [Staff Report: Water Quality Summary Report for GVDWS - Jan-Apr 2024](#)
[Appendix A: Water Quality Summary Report - GVDWS - Jan-Apr 2024](#)

7.4 [24-735](#) Recommendations from Other Water Commissions

Recommendation: There is no recommendation. This report is for information only.

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

7.5 [24-736](#) Water Watch Report

Recommendation: There is no recommendation. The report is for information only.

Attachments: [Water Watch Report](#)

8. NOTICE(S) OF MOTION**9. NEW BUSINESS****10. CORRESPONDENCE**

- 10.1 [24-737](#) Correspondence [Received]: From Mr. Jack Hull: Regional Water Supply Master Plan

Recommendation: There is no recommendation. The correspondence is for information only.

Attachments: [Correspondence: Jack Hull: RWS Master Plan](#)

11. ADJOURNMENT

Voting Key:

NWA - Non-weighted vote of all Commissioners

NWP - Non-weighted vote of participants (as listed)

WA - Weighted vote of all Commissioners

WP - Weighted vote of participants (as listed)

Meeting Minutes

Regional Water Supply Commission

Wednesday, June 19, 2024

11:30 AM

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

PRESENT: G. Baird (Chair); K. Harper (Vice Chair); J. Caradonna; N. Chambers;
C. Coleman; Z. de Vries; S. Duncan (EP); C. Graham (EP); S. Gray; C. Green; K. Guiry;
S. Hammond (EP); K. Jordison (EP); S. Kim (EP); T. Morrison; J. Rogers; C. Stock;
M. Wagner; M. Westhaver; A. Wickheim

STAFF: T. Robbins, CAO; A. Fraser, General Manager, Integrated Water Services;
A. Constabel, Senior Manager, Watershed Protection; J. Marr, Senior Manager,
Infrastructure Engineering; S. Irg, Senior Manager, Water Infrastructure Operations;
P. Nyhuus, Associate Legal Counsel; S. Carey, Senior Manager, Legal and Risk
Management; S. Henderson, Senior Manager, Real Estate and SGI Administration;
C. Vernon, Manager, First Nations Relations; M. Lagoa, Manager, Legislative Services;
T. Duthie, Manager, Administration, Integrated Water Services; J. Zimmerman,
Communications Coordinator, Integrated Water Services; M. Risvold (recorder)

REGRETS: D. Lajeunesse; T. Phelps Bondaroff

The meeting was called to order at 11:30 am

1. TERRITORIAL ACKNOWLEDGEMENT

The Chair provided a Territorial Acknowledgement.

2. APPROVAL OF THE AGENDA

MOVED by Commissioner Stock and **SECONDED** by Commissioner Green,
That the agenda be approved as circulated.
CARRIED

3. ADOPTION OF MINUTES

3.1 [24-613](#) Adoption of the Minutes of the May 15, 2024 Meeting

Attachments: [Draft Minutes, May 15, 2024](#)

MOVED by Commissioner Stock and **SECONDED** by Commissioner Wagner,
That the Minutes of the May 15, 2024 meeting be adopted.
CARRIED

4. CHAIR'S REMARKS

The Chair had no remarks.

5. PRESENTATIONS/DELEGATIONS

5.1 Presentations

There were no presentations.

5.2 Delegations

- 5.2.1** [24-642](#) Delegation - Mr. Mehdi Najari; Re: Agenda Item: 6.1. Development Cost Charges Program Engagement Update
M. Najari spoke to agenda item 6.1.
- 5.2.2** [24-645](#) Delegation - Laurence Lemay; Representing Innergex Renewable Energy: Re: Agenda Item: 6.2. Wind Data Collection Pilot Update
L. Lemay spoke to agenda item 6.2.
- 5.2.3** [24-646](#) Delegation - Josh Handysides; Representing Malahat Nation: Re: Agenda Item: 6.2. Wind Data Collection Pilot Update
J. Handysides spoke to agenda item 6.2.

6. GENERAL MANAGER'S REPORT

6.1 Development Cost Charges Program Engagement Update [verbal]

A. Fraser provided updates on the following:

- Development Cost Charge (DCC) program engagement
- Water Advisory Committee (WAC) meeting on May 28
- Review and workshop with WAC for the draft strategic plan
- Media coverage and concerns derived from the transmission main break in Calgary
- Post disaster planning

6.2 Wind Data Collection Pilot Update [verbal]

A. Fraser provided an update on the Wind Data Collection Pilot.

7. MINUTES OF THE WATER ADVISORY COMMITTEE

7.1 [24-616](#) Recommendation from Water Advisory Committee: Agricultural Water Rate Study

Attachments: [Draft Minutes - Water Advisory Committee Meeting](#)

Discussion ensued regarding

- Water Advisory Committee's conclusions
- Agricultural water rates
- Agricultural related cost increases

**MOVED by Commissioner Harper, SECONDED by Commissioner Rogers,
That the Agricultural Water Rate Study be paused until further review by the
Water Advisory Committee.
CARRIED**

8. COMMISSION BUSINESS

8.1 [24-607](#) Recommendation to Award Contract No. 2024-948, Goldstream Water Treatment Plant Ultraviolet and Controls Upgrade Project

Attachments: [Staff Report: Recommendation To Award Contract No. 2024-948](#)

J. Marr spoke to item 8.1.

Staff responded to the following questions and discussion ensued regarding:

- Request For Proposal (RFP) tender process
- Items removed from the scope of work
- Industry feedback
- Vendor familiarity with the work
- What can be done to encourage more bids
- In-house technical expertise
- Ultraviolet (UV) replacement and life expectancy

**MOVED by Commissioner Stock, SECONDED by Commissioner Chambers,
1. That Contract 2024-948 - Goldstream Water Treatment Plant Ultraviolet and
Controls Upgrades, be awarded to Industra Construction Corp. for an amount of
\$6,985,946.58 (excluding GST); and
2. That staff be authorized to award up to an additional \$600,000 if required
during the execution of the project.**

CARRIED

8.2 [24-609](#) Regional Water Supply Service 2024 Capital Plan Amendment

Attachments: [Staff Report: RWS Capital Plan Amendment](#)
[Appendix A: Updated 2024-2028 Five Year Capital Plan](#)

A. Constable spoke to item 8.2.

MOVED by Commissioner Chambers, **SECONDED** by Commissioner Wagner,
The Regional Water Supply Commission recommends that the Capital Regional
District Board:

Approve amendment of the 2024 Regional Water Supply Service Capital Plan to
move \$180,000 from line item 09-01 Leech River Watershed Restoration; to line
item 17-27 Watershed Bridge and Culvert Replacement, to facilitate high priority
replacement of a deteriorated major drainage structure.

CARRIED

8.3 [24-614](#) Summary of Recommendations from Other Water Commissions

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

This report was received for information.

8.4 [24-615](#) Water Watch Report

Attachments: [Water Watch Report](#)

This report was received for information.

9. NOTICE(S) OF MOTION

There were none.

10. NEW BUSINESS

There was no New Business.

11. MOTION TO CLOSE THE MEETING**11.1** [24-619](#) Motion to Close the Meeting

At 12:19 p.m. the Commission moved into closed session.

MOVED by Commissioner Guiry, **SECONDED** by Commissioner Green,
That the meeting be closed in accordance with the Community Charter, Part 4,
Division 3:

1. Land Acquisition/Disposition under Section 90 (1)(e)
2. Intergovernmental Relations under Section 90 (2)(b)
3. Prohibited from disclosure under FOIPPA under Section 90 (1)(j)

CARRIED

12. RISE AND REPORT

The Commission rose from its closed session at 1:44 p.m. without report.

13. ADJOURNMENT

MOVED by Commissioner Gray, **SECONDED** by Commissioner Wagner,
That the meeting be adjourned at 1:44 p.m.
CARRIED

CHAIR

SECRETARY

DRAFT

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, JULY 17, 2024**

SUBJECT **Draft 2025 Strategic Plan for the Greater Victoria Water Supply System**

ISSUE SUMMARY

To present a summary of the draft 2025 Strategic Plan for the Greater Victoria Water Supply System, along with the engagement plan, for Regional Water Supply Commission review and feedback.

BACKGROUND

Section 5 of British Columbia Regulation 284/97 under the *Capital Region Water Supply and Sooke Hills Protection Act* required that the Capital Regional District (CRD) adopt a strategic plan for a 20-year period and that the plan be reviewed on a regular basis.

In October 1999, the CRD Board passed a *Bylaw to Adopt a Strategic Plan for Water Management* and the first Strategic Plan was prepared. The Strategic Plan provided direction for the development and management of the water supply, transmission system, demand management program, and water supply catchment lands. The Strategic Plan has subsequently been reviewed and updated in 2004, 2012 and 2017. The 2017 Strategic Plan (Appendix A) focused on three overarching long-term commitments, with strategic priorities and actions guiding shorter term initiatives and service planning delivery over a five-year period.

At the February 21, 2024 Regional Water Supply Commission meeting, staff presented the 2017 Regional Water Supply Strategic Plan Close-out Report (Appendix B). This report indicated that many key actions from the 2017 Plan have been completed or operationalized. Consequently, the Strategic Plan needs to be refreshed to address current operational context and external pressures and priorities anticipated in the next five to ten year planning horizon. At this meeting, the Commission passed the following resolutions:

1. *That staff be directed to update the Regional Water Supply Strategic Plan; and,*
2. *That staff provide the Regional Water Supply Commission an updated draft Strategic Plan prior to initiating public, First Nations, and stakeholder engagement on the Plan.*

The draft 2025 Strategic Plan framework (Appendix C) maintains the 2017 format, focusing on three commitments and supporting strategic priorities and actions to guide shorter-term initiatives and service planning.

The strategic priorities address changing factors affecting the service while ensuring the achievement of long-term commitments. The example actions include initiatives, projects, or studies aimed at meeting near-term objectives and supporting the strategic priorities.

The strategic priorities will be reviewed and updated every five to ten years as part of the Strategic Plan review. Actions required to achieve the priorities and commitments will be identified by staff

and integrated into a workplan, budgeted, and implemented over the five to ten years following plan approval.

Advancing the Plan and Measuring Success

The 2025 Strategic Plan will be used at the highest level to guide the CRD's commitments to the customers of the Regional Water Supply Service, as well as guide the day-to-day activities and decision making associated with the service, to ensure the safe, reliable and efficient delivery of water supply for the current and future customers in Greater Victoria. The actions will direct the initiatives, projects and studies that will form the annual and five-year work programs, with progress reported to the Water Advisory Committee and Regional Water Supply Commission every two years. These progress reports will detail how the actions contribute to achieving strategic priorities and supporting commitments.

Feedback from the Water Advisory Committee

A report was presented to the Water Advisory Committee for feedback at their May 28, 2024 meeting. Some feedback from the meeting was incorporated in this report and a summary of the feedback has been provided in Appendix D.

Some committee members expressed concern with the use of the term “drinking water” throughout the strategic plan, noting that it places an undue priority on the use of the regional water supply for drinking purposes when it is also needed for agriculture, irrigation, and other uses. Those committee members expressed a desire to expand the language in the mission statement and the scope of the priorities and actions to be inclusive of groundwater and stormwater management. This has been noted in the summary of feedback, including the request to expand Commitment 2, Priority 1 to “Continuously plan and prepare for future water supply needs (*including landscaping, irrigation, agriculture, ecological*)”. This recommendation has not been incorporated into the framework since this would be a deviation from the previous Strategic Plan as CRD staff have not implemented programs to utilize other water sources beyond education as part of the demand management program. If, for instance, the development of a more exhaustive stormwater capture program were to be prioritized, there would be cost implications. This change requires direction from the Commission and may necessitate a service mandate review.

The Committee passed the following resolution at their meeting:

The Water Advisory Committee recommends to the Regional Water Supply Commission the endorsement of the draft 2025 Strategic Plan for the Greater Victoria Water Supply System, as amended by the feedback received during the Water Advisory Committee meeting of May 28, 2024.

The Committee will have an opportunity to review a copy of the full 2025 Strategic Plan draft document after the completion of the public engagement and the incorporation of the feedback from the public and First Nations consultation. Staff will provide an opportunity for the Regional Water Supply Commission and the Committee to comment on the full draft document prior to finalization in first quarter (Q1), 2025

2025 Strategic Plan Engagement and Implementation

Engaging interested parties, including the Regional Water Supply Commission, Water Advisory Committee, municipal and First Nations water purveyors, the regulators, and the public, is crucial

for the Strategic Plan's development. Feedback will be gathered and incorporated before finalizing the plan in the Q1 of 2025.

The public engagement process proposed would consist of two phases with information available on the CRD's public engagement platform (GetInvolved.crd.bc.ca). Engagement opportunities would be advertised via social media, the CRD website, media releases and paid print advertising.

The first phase would run from August to September 2024 and focus on informing the public about the planning framework, understanding community priorities, and asking for feedback on preferred ways to participate (in person or virtual). Starting in November 2024, the second phase would focus on seeking feedback from interested parties regarding the proposed Commitments, Priorities and Actions in a draft strategy. The second phase would include an online survey and open house, using feedback from phase one to inform decisions around in person or virtual participation options. A response period of 45 days would allow for the receipt of responses to be included in an Engagement Summary to be brought back to the Commission at a future meeting.

First Nations will be engaged to provide feedback on the framework starting in September through to January 2025. The method of engagement will be defined based on feedback from the individual First Nations.

ALTERNATIVES

Alternative 1

1. That the draft 2025 Strategic Plan for the Greater Victoria Water Supply System be endorsed as amended; and
2. That staff be directed to proceed with the engagement plan.

Alternative 2

1. That the draft 2025 Strategic Plan for the Greater Victoria Water Supply System be endorsed, as amended; and
2. That staff be directed to bring back the draft 2025 Strategic Plan prior to proceeding with the engagement plan.

Alternative 3

That this report be referred back to staff for additional information.

CONCLUSION

The draft 2025 Strategic Plan for the Greater Victoria Water Supply System content has been prepared. The vision for the plan is to produce a concise, strategic plan that serves the Regional Water Supply Commission and serves as a guiding document for service delivery and is suitable for public consumption. The planning horizon extends to 2050, focusing on Plan Commitments, Strategic Priorities, and Actions. Engagement, including feedback from the Regional Water Supply Commission, the Water Advisory Committee, the municipal and First Nations water purveyors and the public, is a key part of the development process. The next step is to proceed with the engagement plan and gather feedback to be incorporated before finalizing the plan.

RECOMMENDATION

1. That the draft 2025 Strategic Plan for the Greater Victoria Water Supply System be endorsed as amended; and
2. That staff be directed to proceed with the engagement plan.

Submitted by:	Alicia Fraser, P. Eng., General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

- Appendix A: Regional Water Supply 2017 Strategic Plan
Appendix B: February 21, 2024, 2017 Regional Water Supply Strategic Plan Close-out Report
Appendix C: 2025 Draft Strategic Plan Outline
Appendix D: Comments from the Water Advisory Committee
Appendix E: Presentation



CRD | Capital Regional District

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Regional Water Supply 2017 Strategic Plan

CRD
Making a difference...together



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Introduction

The Capital Regional District (CRD) supplies drinking water for more than 370,000 people, supporting residential, commercial, institutional, light industrial, agricultural and public safety uses across the Greater Victoria area on Vancouver Island in British Columbia. Greater Victoria is growing and factors affecting water supply continue to change. A safe and adequate supply of drinking water is critical to the livability and sustainability of Greater Victoria. Recognizing this, the CRD is committed to:



Provide high quality, safe drinking water



Provide an adequate, long-term supply of drinking water



Provide a reliable and efficient drinking water transmission system

This Strategic Plan for Regional Water Supply sets Commitments and identifies Strategic Priorities and Actions, with a planning horizon to the year 2050, that will guide the future direction for the Regional Water Supply Service. The Strategic Plan will also support CRD Board priorities, provide context for water servicing policy, and align with other CRD strategies and plans.



Sooke Lake Dam

Context for the Strategic Plan

In 1997, the service authority for Regional Water Supply transferred from the Greater Victoria Water District to the CRD under the Capital Region Water Supply and Sooke Hills Protection Act and Regulation, provincial legislation enacted to establish a new model for the delivery of Regional Water Supply.

The Regulation required the CRD to establish a strategic plan for water supply. The first strategic plan was completed in 1999 and has been reviewed and updated in 2004 and 2012. The previous plans have resulted in the implementation of a number of initiatives in the areas of water conservation, management of the watershed lands, investment in treatment and transmission infrastructure, climate change adaptation, and addressing changing trends in water use.

Moving forward, there will be a periodic review of the Strategic Priorities, and an update of the Actions set out in this plan every five years.



The CRD treats and
delivers an average of
130 million
litres of water every day.

Service Governance & Stakeholders

The water supply system operates under a CRD regional service, known as the Regional Water Supply Service, which is administered by the Regional Water Supply Commission, a Commission of the CRD Board.

The Regional Water Supply Commission is a body of 22 elected officials who represent and provide political leadership and decision making on behalf of the local authorities that receive water supply service. The Water Advisory Committee is the public advisory committee that provides advice to the Commission on matters related to the service including water supply, water quality, water conservation and stewardship of the water supply area lands.

There are many stakeholders involved in the supply and delivery of safe drinking water, each with specific roles and responsibilities.

Some of the key stakeholders are:

Canada

The Guidelines for Canadian Drinking Water Quality, published by Health Canada, set out the basic microbiological, chemical and radiological parameters and the physical characteristics, such as taste and odour, that water systems such as the Regional Water Supply System strive to achieve in order to provide the cleanest, safest and most reliable drinking water possible.

Province of British Columbia

The provincial Public Health Act and Regulation sets out the role and powers of health



The Regional Water Supply service provides bulk water to the municipalities listed below and the CRD, who operate water distribution systems that deliver water directly to customers across Greater Victoria.

- District of Central Saanich
- District of North Saanich
- District of Oak Bay
- District of Saanich
- Town of Sidney
- City of Victoria/Township of Esquimalt
- CRD Juan de Fuca Water System
(Serving Town of View Royal, City of Colwood, City of Langford, District of Metchosin, District of Highlands, District of Sooke, East Sooke in the Juan de Fuca Electoral Area, Beecher Bay First Nation, Esquimalt First Nation, Songhees First Nation, T'Souke First Nation)

officials and the requirements for planning, reporting and regulation of activities that may affect public health, including the provision of drinking water. The Public Health Act works in concert with the Drinking Water Protection Act and Regulation which pertains specifically to drinking water supply and protection requirements. The CRD also meets the requirements of the Water Sustainability Act which sets out requirements to ensure a sustainable supply of fresh, clean water that meets the needs of BC residents today and into the future.

Island Health

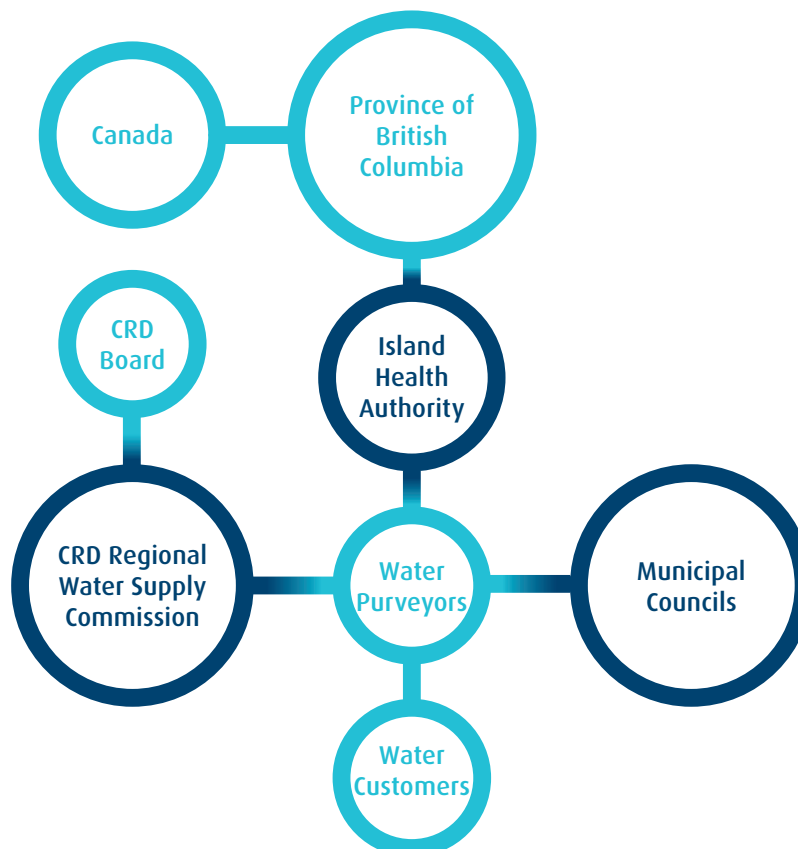
Island Health is the Vancouver Island Health Authority that administers and enforces the applicable provincial legislation through water system operating permits. The CRD holds operating permits with Island Health for the Regional Water Supply System and regularly reports drinking water quality information to Island Health.

Water Purveyors

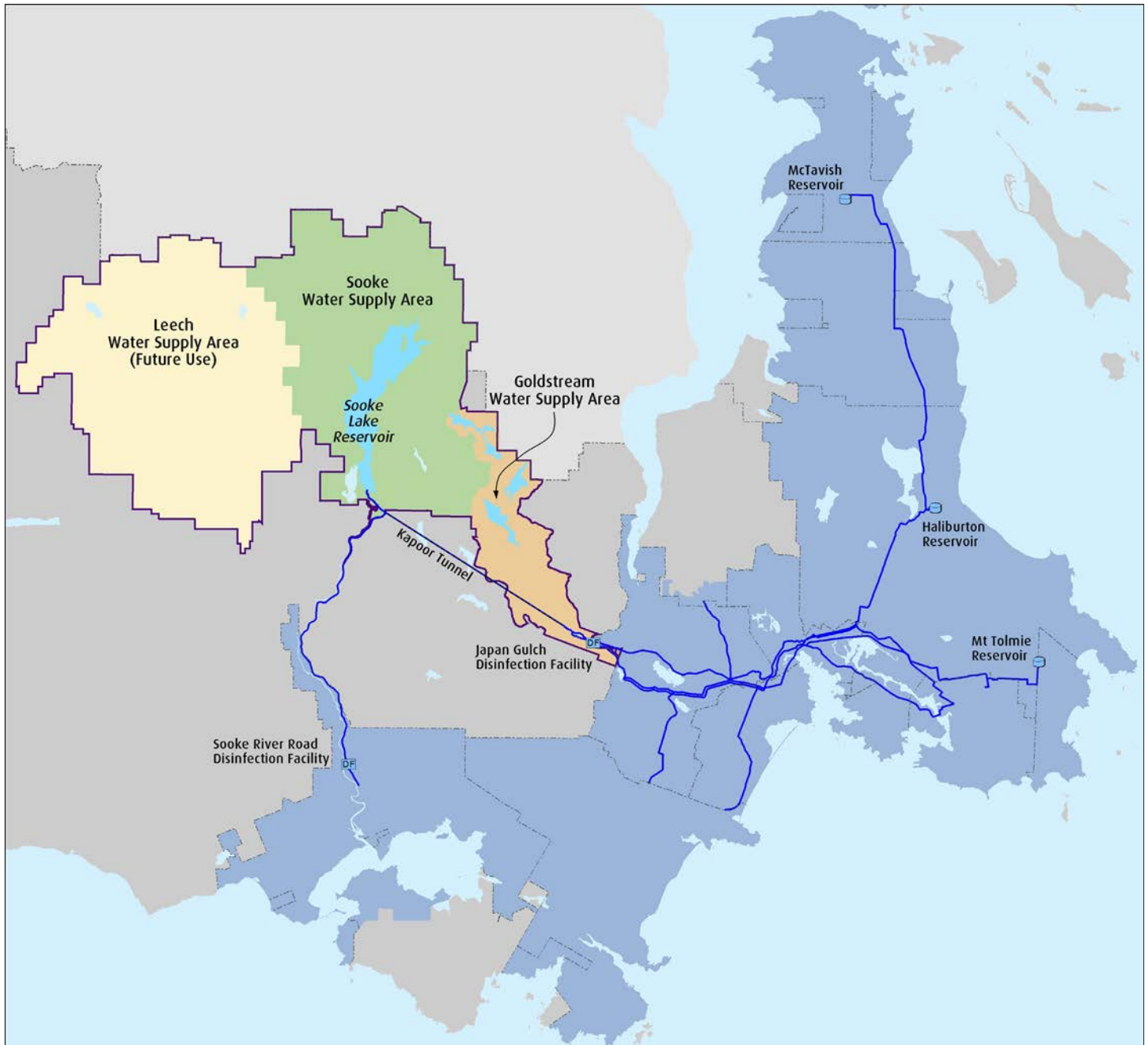
The CRD, municipalities and First Nations in the Region own and operate water systems that receive water from the Regional Water Supply Service, then distribute water directly to water customers. Water purveyors are responsible for the provision of safe drinking water as well as managing all other aspects of the distribution system.

Water Customers

All water customers connected to a public water system are responsible for ensuring that the public system is not exposed to any contamination that could be introduced through private water plumbing systems by cross connection or backflow, and for using water responsibly, particularly when using water for discretionary purposes, to assist with management of the Region's water supply.



Regional Water Supply System



Regional Water Supply System – Serving Greater Victoria

Regional Water Supply Area:

20,549 HECTARES OF PROTECTED DRINKING WATER CATCHMENT LANDS

- Primary Supply Source: Sooke Lake Watershed & Reservoir
- Secondary Supply Source: Goldstream Watershed & Reservoir System
- Future Water Supply Area: Leech Watershed

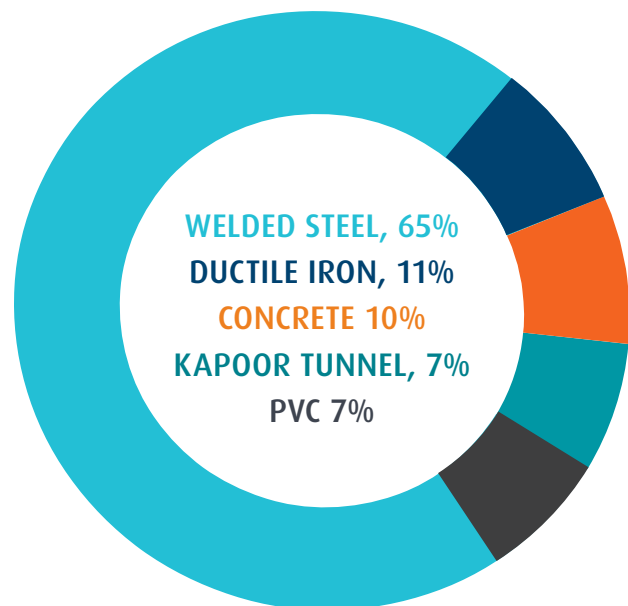
Water Treatment

- Unfiltered Source Water
- **Primary Disinfection:**
 - Ultraviolet light – targets parasites
 - Free chlorine – targets bacteria and viruses
- **Secondary Disinfection:**
 - Ammonia to produce chloramine – long lasting disinfectant



Water Transmission Mains

- 130 km of pipe and tunnel, size range: 400mm – 2,134mm in diameter
- Pipe construction and materials:



Bulk Water Supply Points to water distribution systems

187 POINTS

The Regional Water Supply Strategic Plan Overview

This update of the Strategic Plan for Regional Water Supply sets out the Commitments, Strategic Priorities and Actions for the Regional Water Supply Service.

Commitments

There are three key water supply Commitments the CRD makes today and into the future. These long term Commitments are foundational to the plan and to achieving the service authority and mandate. The Commitments are expected to remain virtually unchanged for decades.

Strategic Priorities & Actions

Each Commitment has supporting Strategic Priorities and Actions which will guide shorter term initiatives as well as service planning and delivery. It is expected that Strategic Priorities would be reviewed and updated every 5-10 years and Actions would be planned, budgeted and implemented over the five-year cycle.

Planning Horizon

The planning horizon for the development of the plan is to the year 2050 based on the following considerations:

- 2050 is the projected earliest date that the Leech Water Supply Area may be required to supplement the Sooke Lake Reservoir to meet regional water supply demand based on higher population growth rate projections
- Water supply system components can have a useful life as short as 15 years and as long as 80 years or more
- Approximately 30 years from now strikes a balance with what can reasonably be planned considering the projected water supply needs of the Region and other factors such as climate change and advances in technology, while looking far enough ahead to allow informed decision making regarding key infrastructure and financial decisions

Areas of Focus

There are six areas of focus that emerge from the Strategic Priorities and Actions that will influence operational, capital and financial aspects of the Regional Water Supply Service over the next five years and beyond. The six areas of focus are:



CRD BOARD PRIORITIES – SUSTAINABLE AND LIVABLE REGION

The current CRD Board Strategic Priorities include 12 priority areas and 51 strategic priorities, which support a vision for a sustainable, livable, vibrant, collaborative and service oriented Region. In addition, the CRD has identified corporate and core service priorities - the Drinking Water and Regional Infrastructure priority areas directly relate to Regional Water Supply and the importance of the service in supporting a sustainable and livable region. The Regional Water Supply Commission supports these priority objectives.



CLIMATE CHANGE IMPACTS – MITIGATION AND ADAPTATION

Preparing for and mitigating or adapting to climate change will be necessary in the Capital Region. In the years to come, it can be expected that there will be warmer winter temperatures, more extreme hot days and longer dry spells in the summer, more precipitation in fall, winter and spring and more intense, extreme weather events. All of these weather changes can have an impact on water supply, water quality and the health and resilience of forests in the watersheds. The CRD will respond to the climate change challenges by integrating climate change implications into risk register and infrastructure management decision making and plans.



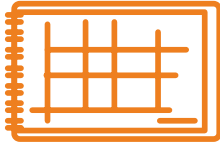
PREPARING FOR EMERGENCY AND POST-DISASTER WATER SUPPLY

Planning and preparing for the potential impacts of a destructive earthquake and other natural disasters on regional and municipal infrastructure is a priority for the CRD and municipal partners. Water supply and distribution in a post-disaster situation is a key aspect of regional emergency planning. Furthering infrastructure resiliency, coordinating emergency planning with other local governments and senior governments, and preparing for emergency water supply and distribution are priorities.



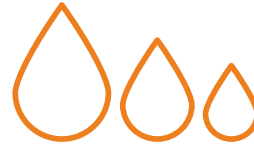
SUPPLY SYSTEM INFRASTRUCTURE INVESTMENT – RENEWING EXISTING AND PREPARING FOR NEW INFRASTRUCTURE

Infrastructure renewal is an integral component of the management of the Regional Water Supply System. The goal is to ensure that water supply infrastructure is replaced or upgraded prior to the end of its projected service life to ensure the system performs reliably, while maximizing the service life of the assets. Planning for new infrastructure related to water treatment requirements, to meet water supply and demand capacity expectations, and to address redundancy and seismic resiliency will be a priority.



PLANNING FOR THE FUTURE USE OF THE LEECH WATER SUPPLY AREA

The Leech Water Supply Area (LWSA) was acquired by the CRD in 2007 as the future water supply area for the Regional Water Supply System. The LWSA will serve as an additional water catchment area that will provide more water runoff into the Sooke Lake Reservoir when it is brought into service. Although the actual year the LWSA will be required will be subject to changing water demand and climate change impacts, as well as actual population growth rates, it is estimated that the LWSA will not be required to supplement the Sooke Lake Reservoir storage volumes until around 2070 with a moderate population growth projection or as early as around 2050 with a higher population growth rate projection. To prepare for the eventual use of the LWSA, further work is required to plan for the water quality impacts of the different raw water sources, rehabilitation of the water supply area forests and drainage structures, and infrastructure necessary to convey the LWSA flows into Sooke Lake Reservoir.



DEMAND MANAGEMENT - ADDRESSING CHANGING TRENDS IN WATER DEMAND

It is expected that the trend of declining per capita water demand across the Capital Region will continue at a rate of approximately 1% per year over the next 10 years. The declining demand is largely related to declining indoor demand resulting from ongoing household conversions to low flow fixtures and high efficiency appliances, as well as declining outdoor demand as public attitudes and behavior towards discretionary outdoor water use change. However, it remains a priority to achieve a further reduction in per capita water use in order to defer the need to build water supply, treatment and transmission capacity in the supply system, until it is necessary to support population growth. Water conservation and understanding the value of water will continue to be key elements of demand management.



COMMITMENT:

Provide high quality, safe drinking water

1 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.
- 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.
- 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.
- Assess the need for more active forest management to protect and enhance forest health and resilience.
- Reduce risk of landscape level wildfire by designing and implementing forest fuel management treatments.



47.6M m³

of drinking water was delivered in 2016 through the regional water supply system



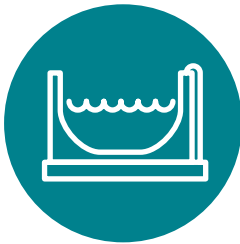
CRD Water Quality Laboratory

2 Maintain a multi-barrier approach to drinking water quality protection.

- Continually evaluate the effectiveness of the water treatment processes.
- Use the Regional Water Supply Service drinking water safety plan in operational and capital project decision making.
- Maintain multiple accreditations to ensure highest quality drinking water testing.
- Continue to develop and refine the Utility Operator Training Program and ensure adherence to Environmental Operator Certification Program requirements.
- Identify and implement progressive and innovative training and development opportunities with respect to utility operations and management for departmental staff.

3 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.
- 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.
- 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.
- Conduct specific seismic risk evaluations of critical assets.



COMMITMENT:

Provide an adequate, long-term supply of drinking water

1 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.
- 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.
- Establish long-term per capita demand rate projections and Demand Management Program objectives to achieve rates and determine annual water demand by sector.
- 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 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.
- Determine conceptual 'hard' capital infrastructure plan to design and construct the necessary infrastructure to divert Leech WSA flows to Sooke Lake Reservoir.
- 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.
- Undertake biannual Supply System hydraulic modelling to confirm system capacity.



Jarvis Lake in the Leech Water Supply Area

2 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.
- Continue to promote the value of the drinking water resource through Water Supply Area public and school tours and other outreach.
- Continue to have two-way dialogue with the Water Advisory Committee regarding water supply matters.
- Explore opportunities for mutually beneficial collaborative partnerships to carry out research and monitoring initiatives in the water supply area and across the system.



9,628

Hectares of protected catchment lands within the Leech Water Supply Area acquired in 2007 for future drinking water supply area.



COMMITMENT:

Provide a reliable and efficient drinking water transmission system

1 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.
- Explore Regional Water Development Cost Charges to fund future growth related supply system infrastructure improvements.
- In collaboration with municipal and First Nations water purveyors, establish water supply service agreements.

2 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.
- Consider life cycle costs with new infrastructure design and asset replacement.
- In asset replacement decisions, balance maximizing infrastructure service life with infrastructure reliability.
- Optimize capital investment taking into consideration priority, annual and long term budget and water rate impacts and resource availability to deliver the projects.



Japan Gulch Ultraviolet Disinfection Plant

3 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.
- 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.

4 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.
- In alignment with CRD organizational development initiatives, provide learning and development opportunities for employees.

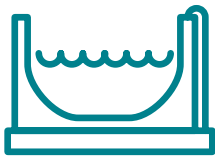


Over \$130 million has been invested in supply system infrastructure renewal since 1995.

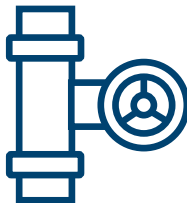
Commitments



Provide high quality, safe drinking water



Provide an adequate, long-term supply of drinking water



Provide a reliable and efficient drinking water transmission system

Advancing the Strategic Plan

A safe and adequate supply of drinking water is critical to the livability and sustainability of Greater Victoria and the Capital Region. The Greater Victoria area is fortunate to have a well established water supply system and a climate that has allowed for the replenishment of source water.

The Commitments outlined in the Plan will ensure that the CRD continues to provide clean, safe, reliable drinking water to the communities we serve. The Strategic Priorities and Actions will guide service planning and delivery over the coming years. The CRD will be responsive to factors affecting the uncertainty of water supply, such as climate change and future water demand, while ensuring the long term Commitments to our customers remain our priority.

Progress and outcomes will be tracked and reported annually to the Regional Water Supply Commission and the CRD Board to ensure the ongoing achievement of the Commitments, Strategic Priorities and Actions in the Strategic Plan.

The photos in this document were taken within the boundaries of the Capital Regional District, and we wish to acknowledge Helene Cyr whose work is featured here.

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, FEBRUARY 21, 2024**

SUBJECT 2017 Regional Water Supply Strategic Plan – Close-out

ISSUE SUMMARY

To close-out the 2017 Regional Water Supply Strategic Plan, provide a summary of the accomplishments between 2018 and 2023 and to seek direction to draft an update to the Regional Water Supply Strategic Plan.

BACKGROUND

Section 5 of British Columbia Regulation 284/97 under the *Capital Region Water Supply and Sooke Hills Protection Act* required that the Capital Regional District (CRD) adopt a strategic plan for a 20-year period and that the plan be reviewed on a regular basis.

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 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.

A safe and adequate supply of drinking water is critical to the livability and sustainability of Greater Victoria. Recognizing this, the 2017 Strategic Plan (attached at Appendix A) highlights the CRD's commitment to:

- Provide high quality, safe drinking water,
- Provide an adequate, long-term supply of drinking water,
- Provide a reliable and efficient drinking water transmission system.

To achieve these commitments and ensure the service is adapting to changing factors, the Plan identifies strategic priorities and actions. 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).

A status report on the implementation of the actions was presented to the Regional Water Supply Commission in October 2020.

Since 2018 significant progress was made on the Plan's strategic priorities and associated actions. These accomplishments span across all three commitments and the accomplishments are summarized in Appendix B. Some of the notable accomplishments include, but are not limited to:

- Development and adoption of land acquisition priorities for the Greater Victoria Water Supply Area (GVWSA) and resulting acquisition of 56.5 ha, disposition of 5.6 ha; and extinguishment of 12 placer claims in the Leech.

- Modelling of burn severity, soil erosion and debris flow potential following wildfire in the Sooke watershed to guide post-wildfire preparedness.
- Various partnerships with academia that seek to increase the knowledge of the watershed and resiliency capacity.
- Completion of a hydrology monitoring system in the Leech WSA and upgrade of hydrology monitoring stations in the Sooke and Goldstream WSAs.
- Forest & wildfire resilience trial [of thinning] to better protect and enhance forest health and resilience in the face of climate change.
- ISO 17025 laboratory accreditation.
- Creation of a Dam Safety Risk Register which is used to prioritize capital work.
- Completion of the 2021 Supply System Risk and Resilience Study which identifies risks to critical water supply assets and prioritizes strategies/capital investments to reduce risk.
- Completion of the 2022 Master Plan which provides a high-level roadmap that offers a 30-year vision into the future requirements for the Service, considering future needs-related sources of water, treatment, and conveyance considering future demand projections, hydraulic capacity limitations and risks to the system.
- Began discussions with the First Nations to negotiate terms of first bulk Water Supply Service Agreements.
- Creation of a seismic resilient transmission system, development of a critical spare inventory for transmission main repair and distribution units/kits that can be leveraged in the event of transmission main failures. These systems would be critical to response after a seismic event.

There are some actions that have yet to be completed, these have also been noted in Appendix B. Staff will continue to progress these future actions and they will be carried forward to a new Strategic Plan.

Given the progress and accomplishments made since 2018, a review of the strategic priorities and actions should be conducted to refresh the Plan for the next 5 to 10-year time horizon.

ALTERNATIVES

Alternative 1

1. That staff be directed to update the Regional Water Supply Strategic Plan; and,
2. That staff provide the Regional Water Supply Commission an updated draft Strategic Plan prior to initiating public, First Nations, and stakeholder engagement on the Plan.

Alternative 2

That staff be directed to maintain the existing plan and complete the outstanding actions.

Alternative 3

That this report be referred back to staff for more information.

IMPLICATIONS*Service Delivery Implications*

The update of the Strategic Plan would include workshopping current opportunities and challenges with CRD staff followed by public, First Nations, and stakeholder engagement. This engagement would include sharing the draft plan, gathering feedback from the Regional Water Supply Commission, the Water Advisory Committee, the municipal and First Nations water purveyors, the regulators, and the public, to prior to finalizing. Staff anticipate seeking final approval of the updated Plan by the end of 2024.

By not moving forward, staff may not be able to proactively react to emerging risks and over time service level may be impacted.

Financial Implications

Updates to the Strategic Plan and associated priorities may result in required adjustments to the 2025 to 2030 capital plan.

CONCLUSION

In 2017, the Capital Regional District (CRD) set out a 30-year plan of renewed commitments, strategic priorities and actions in a *Strategic Plan for Regional Water Supply*. After seven years of working under this Plan, many of these key actions have been completed or operationalized while new trends and challenges face the Regional Water Supply service. The Strategic Plan needs to be updated to define actions for the next 5- to 10-year planning horizon. The refresh of the Strategic Plan would include workshopping current opportunities and challenges with staff and the management team followed by stakeholder engagement. This engagement would include sharing the plan, gathering feedback from the Regional Water Supply Commission, the Water Advisory Committee, the municipal and First Nations water purveyors, the regulators, and the public, prior to finalizing. We anticipate seeking final approval of the updated Plan by the end of 2024.

RECOMMENDATION

1. That staff be directed to update the Regional Water Supply Strategic Plan; and,
2. That staff provide the Regional Water Supply Commission an updated draft Strategic Plan prior to initiating public, First Nations, and stakeholder engagement on the Plan.

Submitted by:	Alicia Fraser, P. Eng., General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT(S)

Appendix A: 2017 Regional Water Supply Strategic Plan

Appendix B: Regional Water Supply Strategic Plan Close-out Summary Report

2025 DRAFT STRATEGIC PLAN OUTLINE

MISSION STATEMENT:

“Together we provide reliable, high-quality drinking water to help ensure the health and sustainability of the growing communities we serve today and in the future.”

GUIDING PRINCIPLES:

Empowering Staff For Sustainable Water Management

Our staff are the cornerstone of our operations, essential for maintaining the reliability and efficiency of our water supply service. Through strategic investments in training, retention, recruitment, and safety protocols, we cultivate a supportive environment where our team can thrive. Prioritizing their well-being and fostering a culture of innovation ensures the continued success and resilience of our water management efforts and our service.

Supporting A Growing Region With Reliable Service

Our commitment to the region is to provide clean, reliable water to our customers now and into the future. We achieve this through forward-thinking planning to ensure we are preparing for the future demands on our water system. We carefully balance internal and external pressures, costs, and investments over time to meet the changing needs.

Respecting And Adapting To The Changing Environment

We foster a culture of respect and stewardship of the watershed lands to supply high quality source water, while also protecting biodiversity and forest sustainability. This involves adapting our infrastructure and operational practices to enhance resilience against extreme weather events and other environmental changes.

Managing Our Resources Effectively And Efficiently

The sustainability and longevity of the water supply cannot be achieved through infrastructure investments alone. Implementing strategies to manage, maximize and optimize utilization of existing resources is at the heart of preparing for the future. We are improving efficiency by equipping staff with the tools they need to do their jobs and with data to make better informed decisions.

Proactively Managing Internal And External Risks – Balancing

The implementation of a comprehensive risk management strategy is integral to all aspects of our work serving the region. This involves balancing the consideration of opportunities and risks, with a focus on allocating resources effectively to maintain and enhance current operations. We continue to prioritize the identification and mitigation of risks to our water supply system and water quality, particularly those related to climate change impacts, service reliability, and associated health and safety concerns for both staff and the communities we serve.

Fostering Collaborative Relationships With Customers And Partners To Improve Our Service

We must demonstrate the value of and effort behind the water supply service to foster appreciation and respect for this essential resource. We advance this by openly sharing information about the water supply system and its operations to the public, while actively seeking feedback on our service. We also collaborate with municipal staff to continue improving and aligning our services to the needs of the region's residents. We build strong partnerships and create opportunities for collaboration so we can continue to improve.

COMMITMENT 1:
PROVIDE HIGH QUALITY, SAFE DRINKING WATER

PRIORITY:

1. Protect and Manage the Greater Victoria Water Supply Area for the protection of long-term sustainable high-quality source water.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Protect water supply and ecosystems from contaminants and invasive plants, animals, and pathogens. Example Initiatives:<ul style="list-style-type: none">Complete study to document biosecurity risk and revise or implement new biosecurity protection measures
<ul style="list-style-type: none">Continue to monitor the watershed and implement climate adaptation and mitigation initiatives to reduce the impacts associated with the magnitude and rate of projected climate change on ecosystems, water quality and infrastructure in the Greater Victoria Water Supply Area and update strategies where needed. Example Initiatives:<ul style="list-style-type: none">Undertake a feasibility study to determine optimal siting and operating procedure to access cooler deep northern Sooke Lake Basin water. (3 to 5yrs informed by model inflow model)Develop a forest management strategy or plan to prioritize and guide forest management treatments and activities
Medium-Term Actions
<ul style="list-style-type: none">Continue to enhance capabilities in wildfire prevention, preparedness, early detection, suppression, forest fuel reduction and post-wildfire emergency rehabilitation measures to reduce and mitigate the potential impacts of a large-scale wildfire in the Greater Victoria Water Supply Area on water quality and supply. Example Initiatives:<ul style="list-style-type: none">Increased use of infrared and drone technology and monitoring software to provide early detection and monitoringDevelop post wildfire response plans to protect water qualityTrial the use of prescribed burning and other techniques to manage forest fuel build up.
<ul style="list-style-type: none">Expand opportunities for traditional knowledge and First Nations input in stewardship of watershed lands.
<ul style="list-style-type: none">Continue to seek ownership, management, or influence of watershed lands and watershed buffer lands in aligned with Greater Victoria Water Supply Area land prioritization.
Longer-Term Actions
<ul style="list-style-type: none">Explore opportunities for integrating First Nations traditional ecological knowledge and perspectives in the protection and stewardship of the Greater Victoria Water Supply AreaDevelop a management strategy specific to non-catchment lands

COMMITMENT 1:
PROVIDE HIGH QUALITY, SAFE DRINKING WATER

PRIORITY:

2. Ensure drinking water quality with a multi-barrier risk-based approach.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Continue to update and expand the drinking water safety plan
<ul style="list-style-type: none">Refine the schedule and delivery strategy for the implementation of filtration and other related infrastructure improvements. Include consideration for predecessors, successor and triggers for each task and step.
<ul style="list-style-type: none">Continue baseline water sampling and data collection projects which support future infrastructure design.
<ul style="list-style-type: none">Ongoing water quality monitoring program in source and treated water to verify proper system operations and identify potential water quality risks. This also includes research and studies into contaminants of emerging concern (e.g. Per- and polyfluoroalkyl substances (PFAS), microplastics, 6PPD (a common rubber antiozonant, with major application in vehicle tires) etc.)
<ul style="list-style-type: none">Maintain, enhance the cross-connection program.
Medium-Term Actions
<ul style="list-style-type: none">Commence water filtration pilots to refine the design parameters for future water treatment processes and cost estimate, to inform preliminary design
<ul style="list-style-type: none">Maintenance of ISO 17025 Laboratory accreditation and Provincial Health Officer certification
Longer-Term Actions
<ul style="list-style-type: none">Enhance/expand network monitoring. Remote continuous lake monitoring.

COMMITMENT 1:
PROVIDE HIGH QUALITY, SAFE DRINKING WATER

PRIORITY:

3. Advance our understanding of the water supply area and source water to prepare for the future.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Complete modelling of climate change effect on forests and effectiveness of fuel reduction treatments to help guide management of the Greater Victoria Water Supply Area forests into the future.
Medium-Term Actions
<ul style="list-style-type: none">Develop reservoir inflow and circulation models and conduct analyses to improve the understanding of these linkages and how they affect drinking water quality and the health of aquatic ecosystems.
<ul style="list-style-type: none">Enhance, expand, and integrate the monitoring of watershed hydrology and water quality in the Greater Victoria Water Supply Area to improve understanding of the linkages among weather, stream flows, reservoir circulation and water quality.
<ul style="list-style-type: none">Continue to partner with the Province, Canadian Forest Service, University of Victoria, the forWater Network and others to better understand the water supply area forested and aquatic ecosystems, risks from insects, diseases, and invasive species; to inform best management for water supply and congruent natural values.
<ul style="list-style-type: none">Assess forest management trials (thinning, juvenile spacing, prescribed burning) in terms of the impact of the treatment on forest fuel, tree and stand growth and health, microclimate
Longer-Term Actions
<ul style="list-style-type: none">Undertake post-wildfire and sediment delivery modelling to inform water treatment and water quality preparedness plans and filtration design prior to and after the introduction of alternate water sources. (Link hydrodynamic model and water quality model.)
<ul style="list-style-type: none">Leveraging Internet of Things, create a digital ‘dashboard’ with real time reporting on key weather, stream flow, reservoir level, reservoir release and other water quality and supply data to facilitate internal awareness and decision-making and communication with outside regulators and stakeholders. Links to public engagement.

COMMITMENT 2:

PROVIDE AN ADEQUATE, RELIABLE, LONG-TERM SUPPLY OF DRINKING WATER

PRIORITY:

1. Continuously plan and prepare for future water supply needs.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">On a prescribed timeframe, routinely update assumptions and future growth projection as it is related to the Master Plan and Development Cost Charge Programs.
Medium-Term Actions
<ul style="list-style-type: none">Define a strategy to increase additional water resources, building on alternatives outlined in Master Plan<ul style="list-style-type: none">Refine strategy and infrastructure needs to access additional capacity within existing CRD land to meet 2050 projected demandsDefine ultimate water resources capacity within existing CRD owned watershed landsIn collaboration with municipal partners, develop a regional strategy and standards regarding storage capacity (reservoirs) within the transmission and municipal distribution systems.Work collaboratively with Municipal partners to clarify and define service level related to water supply and lines of demarcation.
Longer-Term Actions
<ul style="list-style-type: none">If required, develop a land acquisition strategy to expand long term water supply to meet the needs beyond 2050.

COMMITMENT 2:

PROVIDE AN ADEQUATE, RELIABLE, LONG-TERM SUPPLY OF DRINKING WATER

PRIORITY:

2. Enhance public connection to, confidence in and responsibility for water supply and value of water.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Continue to evolve and promote public tours of the watershed
<ul style="list-style-type: none">Develop and promote curriculum within school on drinking water.
<ul style="list-style-type: none">Develop an ongoing virtual speaker series that would include presentations by third party experts on emerging topics concerning water.
<ul style="list-style-type: none">Continue with public engagement through official channels like the Water Advisory Committee.
Medium-Term Actions
<ul style="list-style-type: none">Develop a long -term media/communication strategy that engages the public on efforts to protect and improve the resilience of drinking water treatment and supply.
<ul style="list-style-type: none">Assess opportunities to receive two-way communication with existing customers related to the quality of service provided.
Longer-Term Actions
<ul style="list-style-type: none">Develop Live Data stream/website or App on water system – outages, fun facts, and construction.

COMMITMENT 2:
PROVIDE AN ADEQUATE, RELIABLE, LONG-TERM SUPPLY OF DRINKING WATER

PRIORITY:

3. Optimize our available water supply through adaptive demand management strategies.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Define the “by sector” demand baseline and define long term targets.
Medium-Term Actions
<ul style="list-style-type: none">Leverage baseline and targets to define a multi-year demand management strategyDevelop and evolve policy and bylaws to support effective demand management and maximizing water supply.Investigate opportunities for creating shared and consistent data sets with municipalities to facilitate efficient trending.
Longer-Term Actions
<ul style="list-style-type: none">Continuous refinement of policy and practices to facilitate optimal supply and demand management.

COMMITMENT 2:
PROVIDE AN ADEQUATE, RELIABLE, LONG-TERM SUPPLY OF DRINKING WATER

PRIORITY:

4. Implement a sustainable and equitable long-term financial plan.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Implement a development cost charge (DCC) program and Bylaw for the Regional Water Supply
<ul style="list-style-type: none">Continue to engage First Nations and put in place Bulk Water Agreements supporting development of stronger government to government relationships
Medium-Term Actions
<ul style="list-style-type: none">Continue to refine the long-term financial plan
<ul style="list-style-type: none">Identify grant and partnership opportunities to fund future filtration infrastructure needs
Longer-Term Actions
<ul style="list-style-type: none">Continue to assess opportunities to streamline or strengthen utility governance

COMMITMENT 3:
PROVIDE EFFICIENT, EFFECTIVE AND INNOVATIVE OPERATIONS OF THE DRINKING WATER
SUPPLY SYSTEM

PRIORITY:

1. Make evidence-based infrastructure decisions to ensure reliable system performance and long-term sustainability.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Continue to develop and consolidate various risk registries to prioritize expenditures based on risk.
Medium-Term Actions
<ul style="list-style-type: none">Mature our asset and maintenance management processes to maximize data driven decision making. Example Initiatives:<ul style="list-style-type: none">Align our work management tools and business processes to improve maintenance management practices, efficiency, and reliability.Define data standards and Key Performance Indicators (KPIs) related to maintenance and asset management and develop dashboards to track and identify trends.Refine the comprehensive asset management plan to prioritize maintenance and capital projects.
<ul style="list-style-type: none">Refine asset class specific maintenance plans to optimize and extend asset life
<ul style="list-style-type: none">Continue to develop and improve our SCADA system to inform operational decision making
Longer-Term Actions
<ul style="list-style-type: none">Create and automate integrated process narrative for the transmission system to optimize system performance and improve energy efficiency.
<ul style="list-style-type: none">Expand critical spares program to continue to reduce system downtime or service interruptions.
<ul style="list-style-type: none">Invest in technology for decision-making support and reporting.

COMMITMENT 3:

PROVIDE EFFICIENT, EFFECTIVE AND INNOVATIVE OPERATIONS OF THE DRINKING WATER SUPPLY SYSTEM

PRIORITY:

2.
- Assure long-term sustainability and capacity of water management operations through sufficient resources, robust processes, strategic partnerships, effective tools, and continuous innovation.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Continuously assess and improve internal processes and procedures to streamline operations, reduce costs and increase efficiency. Example Initiatives:<ul style="list-style-type: none">Align our work management system and Maintenance Management process
<ul style="list-style-type: none">Modernize contract and project management tools, to support more efficient and effective project delivery and budgeting.
<ul style="list-style-type: none">Participate in industry associations to leverage applicable operational experience and best practices that can add value to our system.
Medium-Term Actions
<ul style="list-style-type: none">Continuously evaluate and integrate innovative solutions, such as smart meters, leak detection technologies, and renewable energy sources, to enhance system resilience and sustainability.
<ul style="list-style-type: none">Cultivate strategic partnerships with skilled contractors and consultants through long-term agreements ensuring access to expertise and resources for timely responses to procurement opportunities to meet capital needs.
<ul style="list-style-type: none">Foster partnerships with technology providers and research institutions to stay at the forefront of innovation in water management.
<ul style="list-style-type: none">Create agreements with municipalities for shared capital delivery of contracts.
<ul style="list-style-type: none">Explore opportunities for Mutual Aid Agreements
Longer-Term Actions
<ul style="list-style-type: none">Develop educational initiatives (workshops, webinars, etc.) to assist potential vendors understand and navigate the procurement process effectively.
<ul style="list-style-type: none">Explore the technology, tools and sensors that can further inform and enhance specific asset class maintenance plans

COMMITMENT 3:

PROVIDE EFFICIENT, EFFECTIVE AND INNOVATIVE OPERATIONS OF THE DRINKING WATER SUPPLY SYSTEM

PRIORITY:

3.
- Enhance the security and sustainability of the water supply by effectively managing risks and enhancing emergency response capabilities.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Foster partnerships with municipalities and First Nations to develop a robust integrated drinking water plan for emergency response and natural disasters.
<ul style="list-style-type: none">Continue regular safety training and drills for employees focusing on WorkSafeBC requirements, best practices for handling hazardous materials, operating equipment safely, and responding to emergencies effectively.
<ul style="list-style-type: none">Continue to actively protect the Greater Victoria Water Supply Area and water supply infrastructure from unauthorized physical activities or access. Examples of Initiatives would include:<ul style="list-style-type: none">Considering opportunities to acquire ownership and control of the remaining catchment lands and critical adjacent lands to act as a buffer.Explore the potential for partnerships with other CRD departments, not for profit organizations, and First Nations in the acquisition and management of important buffer lands adjacent to the GVWSA.Identify and mitigate risks to our digital environmental to safeguard against cyber threats and data breaches.
<ul style="list-style-type: none">Continue to develop and resource the dam safety program, while fostering strong relationship with British Columbia Dam Safety Office (group)
<ul style="list-style-type: none">Develop and implement Dam Safety Public Engagement and Communication plans, including a public-facing webpage with dam safety and emergency preparedness information.
<ul style="list-style-type: none">Construct the Instrumentation System Improvements at Sooke Lake Dam, including integrating instrumentation data to SCADA system, to improve dam safety, warning time, and emergency preparedness.
Medium-Term Actions
<ul style="list-style-type: none">Enhance risk register with physical and cyber security concerns to guide mitigation measures.
<ul style="list-style-type: none">Implement Dam Safety Instrumentation improvements at large dams. Work to be prioritized based on each dam’s Dam Failure Consequence Classification.
<ul style="list-style-type: none">Engage consulting industry to identify at innovative delivery alternatives to expedite the delivery of the backlog of dam upgrades to meet regulatory requirements.
<ul style="list-style-type: none">Reassess large risks to dam portfolio, including regional seismic risk, flood risk, and plan for capital improvements.
Longer-Term Actions
<ul style="list-style-type: none">Formalize and document the dam safety management system
<ul style="list-style-type: none">Design and implement seismic rehabilitation and capital improvements at higher consequence dams, including Sooke Lake Dam and Deception Gulch Dam.
<ul style="list-style-type: none">Complete legislated Dam Safety Reviews with support of expert consultants to reassess dam safety issues and planned capital improvements.

COMMITMENT 3:

PROVIDE EFFICIENT, EFFECTIVE AND INNOVATIVE OPERATIONS OF THE DRINKING WATER SUPPLY SYSTEM

PRIORITY:

4. Attract, develop, and retain a diverse, knowledgeable and empowered workforce.

ACTIONS:

Near-Term Actions
<ul style="list-style-type: none">Continue IWS Utility Operator cross training program within each Environmental Operator Certification Program discipline.
<ul style="list-style-type: none">Support and encourage staff to participate in industry associations such as BCWWA, CWWA or AWWA or others.
<ul style="list-style-type: none">Continue to partner with post-secondary Co-op programs to consider cooperative education opportunities.
<ul style="list-style-type: none">Ongoing evaluation and success of the CRD’s Utility Operator Program, this is an internal program designed to provide career development and progression as utility staff gain additional experience and related British Columbia Environmental Operators Certificate Program certifications.
<ul style="list-style-type: none">Continue to partner with CRD Human Resources and Corporate Safety on related training opportunities, including personal and professional development.
<ul style="list-style-type: none">Continue to explore formal and informal opportunities for development, through temporary assignments, senior pay opportunities, as well as through auxiliary posted opportunities.
Medium-Term Actions
<ul style="list-style-type: none">Enhance personal and professional development opportunities to better support career advancement, including formal and informal mentorship opportunities.
<ul style="list-style-type: none">Ongoing training for Management through the CRD’s iLead program in partnership with Royal Roads University.
Longer-Term Actions
<ul style="list-style-type: none">Provide training to management, team leads and supervisors on Effective Utility Management or equivalent.

**REGIONAL WATER SUPPLY DRAFT 2025 STRATEGIC PLAN
WATER ADVISORY COMMITTEE COMMENTS
MAY 28, 2024**

Internal and External Trends:

As customers, ratepayers, experts, what do you think are the things that we will need to focus on in the next five plus years?

- Climate Instability (drought / extreme weather)
- Cyber Security
- Food Security
- Drinking Water Security
- Emergency Water Sources
- Reconciliation
- Irrigation (risk)

Mission Statement – Discussion / Comments:

Together we provide reliable, high-quality drinking water to help ensure the health and sustainability of the growing communities we serve today and in the future.

- There were concerns raised with limiting the wording to drinking water and excluding other water uses. G. Baird clarified the Regional Water Supply Commission's authority and that its focus is on quality drinking water which can be used for other water uses.
- There was discussion regarding what other mission statements reflect and staff noted that they are all very different depending on the utility and the type of services provided.
- J. Winter reminded the Committee that the plan will be reviewed every five years and can be modified as may be required.

Commitment 1 – comments on proposed priorities noted in red:

Provide high quality, safe drinking water.

1. ~~Manage~~ **Protect** (use a more proactive word than manage) the Greater Victoria Water Supply Area for the protection of long-term sustainable high-quality source water.
2. Ensure drinking water quality with a multi-barrier risk-based approach.
3. Advance our understanding of the water supply area (~~or watershed?~~) and source water to prepare for the future.
4. Comments received through the group chat from the online participants: There should be a formal acknowledgment of outdoor water use / irrigation water in the new Strategic Plan. Acknowledging irrigation's importance to:
 - the local ecology
 - restoration of degraded lands
 - local food production
 - also its associated risks (the irrigation tap turns off when the rains stop).

Commitment 2 – comments on proposed priorities noted in red:

Provide an adequate, reliable, long-term supply of drinking water – comments on proposed priorities.

1. Continuously plan and prepare for future water supply needs (~~including landscaping, irrigation, agriculture, ecological~~).
2. Enhance public ~~connection and~~ confidence ~~and responsibility~~ of the water supply and value of water.
3. ~~Maximize~~ Optimize our ~~available sustainable~~ water supply through adaptive demand management strategies.
4. ~~Act now to~~ Implement a sustainable and equitable long-term financial plan.

Commitment 3 – comments on proposed priorities noted in red:

Provide efficient, ~~effective~~ and innovative operations of water system infrastructure – comments on proposed priorities.

1. Make ~~data driven~~ (~~science-based or evidence-based~~) decisions to ensure reliable system performance and long-term sustainability.
2. Assure long-term sustainability and capacity of water management operations through sufficient resources, robust processes, strategic partnerships, effective tools, and continuous innovation.
3. ~~Protect the public by~~ ~~e~~Enhance~~ing~~ the security and sustainability of the water supply by effectively managing risks and enhancing emergency response capabilities.
4. Attract, develop, and retain a diverse, ~~and high performing knowledgeable and empowered~~ workforce.

Guiding Principles:

1. Empowering staff for sustainable water management
2. Supporting a growing region with reliable service
3. Respecting and adapting to the changing environment
4. Managing our resources effectively and efficiently
5. Proactively managing internal and external risks
6. Fostering collaborative relationships with customers and partners to improve our service

Things not specifically mentioned (expand to guiding principles):

- Environment
- Food security
- Municipalities
- Inter-connection with other services (agriculture, wastewater etc.)

Regional Water Supply Commission

2025 Strategic Plan Workshop

Setting Priorities for the Next
Five to Ten Years

Strategic Plan Workshop Agenda

1. Session Overview & Objectives
2. Strategic Plan Context
3. 2017 Strategic Plan and Accomplishments
4. Internal and External Trends
5. Key Elements of the 2025 Strategic Plan
 - **Commitments**
 - **Priorities**
6. Next Steps





Objectives

- Why we are all here
- What we want to accomplish today



Strategic Plan

Are tools that provide guidance in fulfilling a utility's mission and commitments and includes specific goals and actions to achieve the mission.

"Where we want to go"



Master Plan

Road map that documents medium and long-term plans for major infrastructure projects, provides a description of significant capital improvements and framework for decision making

"How do we get there"



Capital Plan

Documents short term projects with defined scope, schedule and budget. Typically includes new and replacement machinery, structures, transmission networks etc.

"What we are doing"



Operational Plan

Detailed plans specific to different work areas that define tasks and associated roles and responsibilities, typically internal documents.

"How we work"

Importance of Strategic Planning

- Sets direction and priorities for the next five to ten years (including what is out of scope), in alignment with Board Priorities and Corporate Plan and informed by trends affecting operations
- Compiles and builds common understanding of future priorities internally and externally to foster accountability and trust
- Guides future decision-making to allocate and prioritize resources efficiently and ensure long-term sustainability
- Encourages us to take a step back from day-to-day operations and identify how we will be adaptable in a dynamic environment

Internal and External Trends



Staff and the Water Advisory Committee Identified As Trends

Internal and External Trends



What will be the
biggest pressure on
our services in the
coming years??

0 responses

Login to edit this Mentimeter

Key Elements of the 2025 Strategic Plan

“Strategic planning will help you fully uncover your available options, set priorities for them, and define methods to achieve them”

- Robert J. Mckain



Mission

“Together we provide reliable, high-quality drinking water to help ensure the health and sustainability of the growing communities we serve today and in the future.”

Question: Given feedback from the Water Advisory Committee should the mission be limited to drinking water or protection of all water sources?



Commitment 1:

Provide high quality, safe drinking water



Commitment 2:

Provide an adequate, *reliable*, long-term supply of drinking water



Commitment 3:

Provide efficient, effective and innovative operations of water system infrastructure

Commitment 1: Provide high quality, safe drinking water



2017 PRIORITIES

1. Manage and protect the Greater Victoria Water Supply Area (GVWSA)
2. Maintain a multi-barrier approach to drinking water quality protection
3. Maintain a risk register for the Regional Water Supply System -- identify potential risks to water quality, water supply and water transmission; provide mitigation and adaptation measures.

PROPOSED PRIORITIES:

1. Protect and Manage the Greater Victoria Water Supply Area for the protection of long-term sustainable high-quality source water.
2. Ensure drinking water quality with a multi-barrier risk-based approach.
3. Advance our understanding of the water supply area and source water to prepare for the future.

Commitment 2: Provide an adequate, reliable, long-term supply of drinking water



2017 PRIORITIES

1. Plan and prepare for future water supply needs to meet demand considering impacts of climate change, population growth, and per-capita demand rates .
2. Develop a higher level of public understanding of the drinking water supply system and value of water through education and engagement

PROPOSED PRIORITIES:

1. Continuously plan and prepare for future water supply needs.
2. Enhance public connection to, confidence in and responsibility for water supply and value of water.
3. Optimize our available water supply through adaptive demand management strategies.
4. Implement a sustainable and equitable long-term financial plan.

Commitment 3: Provide efficient, effective and innovative operations of the drinking water supply system



2017 PRIORITIES

1. Maintain a capital planning process and appropriate investment in water supply infrastructure to ensure reliable system performance
2. Continually review cost effectiveness of service respecting operations and maintenance and capital investment decisions
3. Develop and manage emergency bulk drinking water supply systems for Greater Victoria

PROPOSED PRIORITIES:

1. Make evidence-based infrastructure decisions to ensure reliable system performance and long-term sustainability.
2. Assure long-term sustainability and capacity of water management operations through sufficient resources, robust processes, strategic partnerships, effective tools, and continuous innovation.
3. Enhance the security and sustainability of the water supply by effectively managing risks and enhancing emergency response capabilities.

Commitment 3: Provide efficient and innovative operations of drinking water supply system



2017 PRIORITIES

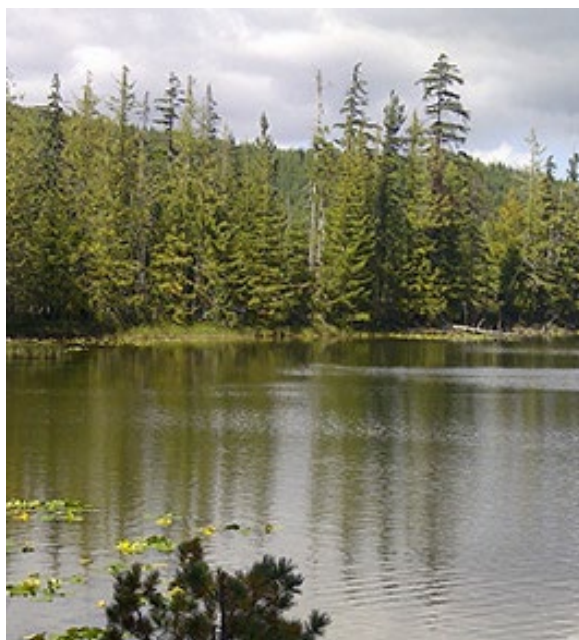
4. Continue to focus on retaining and recruiting experienced and professional employees responsible for the Regional Water Supply System engineering, system operation and maintenance, and management of the water supply area

PROPOSED PRIORITIES:

4. Attract, develop, and retain a diverse, knowledgeable and empowered workforce.

Discussion

1. **COMMITMENTS & PRIORITIES** - Suggest any changes on Post-Its
2. **ACTIONS** - Is anything missing? Suggest changes on Post-Its
3. **RANKING** - Use dots to indicate your priority Actions





Recommendations

Based on discussion, move the appropriate resolution to record in the minutes – either as contained in the staff report, or amended to reflect discussion

Next Steps



**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, JULY 17, 2024**

SUBJECT **Regional Water Supply Service 2024 Mid-Year Capital Projects and Operations Update**

ISSUE SUMMARY

To provide the Regional Water Supply Commission (Commission) with the Regional Water Supply Service (Service) capital program and operations updates.

BACKGROUND

Capital Program Update

The Regional Water Supply (RWS) capital program reflects the planned capital spending for the next five years and forms part of the annual service budget that is approved in March each year by the Capital Regional District (CRD) Board. In 2024, there were 119 capital projects identified with an approved 2024 budget of \$60.9 million. The status of the major projects progressing in 2024 is detailed in Appendix A. Additional smaller projects, such as the annual provisional items, will also progress and are prioritized based on criticality and resourcing.

Operations Update

Water Operations maintains and operates the RWS System which includes planned and unplanned maintenance. The annual 2024 operating budget totals \$7.4 million. Operating accounts are on track, year to date, with no major variances anticipated for the remainder of the year. Below are highlights, to date in 2024, of activities undertaken by Water Operations.

Emergency response:

The System is remotely monitored 24 hours a day, 7 days a week by the Goldstream Water Treatment Plant, this monitoring includes: RWS Transmission System, Goldstream and Sooke River Road Treatment Plants, Sooke Lake Dam and the Goldstream Lakes Dams. A Water Operator is on call continuously outside of regular work hours and responds to emergency callouts in the RWS and the Juan de Fuca Water Distribution Systems. To date there has been no major emergency response required in 2024.

Flushing Raw Water Transmission Mains:

Each year, the Operations team flushes the two transmission mains extending from Kapoor Tunnel to Goldstream Water Treatment Plant. This flushing program is essential to limit sediment accumulation at low points in these mains. This year, a valve actuator failure during routine operations resulted in only one main being flushed. Efforts are underway to repair the failed actuator, and a capital project has been scheduled for 2025 to enhance flushing capabilities in this area.

Goldstream Water Treatment Plant:

Upgrades completed in 2024 included the installation of new containment pads at the Hypochlorite and Ammonia Facilities. These upgrades, situated on the exterior of the buildings at the delivery pads, are designed to ensure the containment of chemical spills during the offloading of tanker trucks. The new containment pads provide an added layer of safety, minimizing the risk of environmental contamination and enhancing the overall safety of the chemical handling process at the facility.

Pressure Control Station (PCS) Upgrades:

The replacement of the lead control valve at Alderley PCS (Main No. 4) has been successfully completed. This upgrade included the replacement of both upstream and downstream isolation valves. Notably, this work was carried out while the station remained fully operational, demonstrating the team's ability to perform critical upgrades without disrupting the service. The new valves enhance the reliability and efficiency of the pressure control station, ensuring consistent and safe water pressure management.

Dam Infrastructure Maintenance:

Regular inspections of the dam infrastructure are conducted on a weekly basis to ensure the integrity and safety of the dams. At Saddle Dam, two valve spindles were recently replaced to improve the reliability and functionality of the valves. This maintenance work is a crucial step that enables the planned repairs of the low-level outlet and vent pipe at Deception Dam to move forward. These repairs are essential for maintaining the dam's operational integrity and ensuring its long-term safety and functionality.

CONCLUSION

This report provides the Regional Water Supply Commission with operational and capital program updates for the Regional Water Supply Service.

RECOMMENDATION

There is no recommendation. This report is for information only.

Submitted by:	Joseph Marr, P.Eng., Senior Manager, Infrastructure Engineering
Submitted by:	Shayne Irg, P.Eng., Senior Manager, Water Infrastructure Operations
Concurrence:	Alicia Fraser, P. Eng., General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Regional Water Supply Capital Program – Current Status of Active Projects

Regional Water Supply Service Capital Program – Current Status of Active Projects

Project Number	Project Title	Total Budget	Status
20-08	Regional Water Development Cost Charge Program	\$450,000	The CRD and its consultant Urban Systems are currently in the public engagement phase of the project and will be bringing the summary of this engagement to the commission in the Fall of 2024 with the intent of having a Development Cost Charges (DCC) bylaw in place by 2025.
18-07	Replacement of UV System	\$11,500,000	Ultraviolet (UV) procurement contract is in place. Construction Contract is currently being finalized for execution. Construction scheduled for low demand period in winter of 2024/25.
18-18	Main No. 3 Segment Replacement	\$15,600,000	Engineering consultant has been retained and preliminary design process is underway. Long range routing assessment is being finalized before any detailed design process will commence. Replacement of Wale Road segment will not be scheduled unless it aligns with long term routing assessment.
19-05	Kapoor Tunnel Assessment	\$700,000	CRD has engaged consultants with tunnel expertise to develop a scope of services to plan a tunnel management plan.
20-17	Decommission Smith Hill Site	\$1,450,000	This project is being assessed based on the recommendations from the Regional Water 2022 Master Plan to potentially utilize this site in the future.
21-11	RWS Supply Main No. 4 Upgrades	\$33,900,000	Engineering consultant has been retained and preliminary design process is underway. Long-range routing assessment is being finalized before any detailed design process will commence. Budget estimate will be updated for 2025 based on preferred alignment and engineered estimate. Construction on the main replacement not anticipated until at least late 2026.
23-17	Main No. 4 – Mt. Newton to Highway 17	\$9,800,000	A Strategic Priorities Grant was successful in second quarter of 2023 in the amount of \$6 million. An

Appendix A

Project Number	Project Title	Total Budget	Status
			engineering consultant has been retained and are currently at 60% design stage. CRD is expanding scope to also include replacement of more concrete cylinder pipe and will reflect this budget increase in the 2025 budget. Construction anticipated to commence in 2025.
23-29	Mt. Tolmie Tank Control Valve	\$800,000	Design work is nearly complete. Project on hold while assessing Mt. Tolmie Tank Structural Repairs.
24-19	Mt. Tolmie Tank Structural and Infiltration Improvements	\$850,000	Overburden soil has been removed, internal tank inspections complete and initial small-scale repairs have been made. CRD assessing engineering condition assessment report and recommendations to determine next steps for rehabilitation.
20-04	Sooke Lake Hydro Dynamic Model Development	\$520,000	All sensors were purchased and installed prior to the end of 2023. Data collection will continue throughout 2024 and 2025.
17-35	Vehicle and Equipment Replacements	\$995,000	The replacement of fleet assets, which are anticipated to reach the end of their service lives in 2024, is currently in progress.
23-21	Electric vehicle charging stations at 479 Island Highway	\$680,000	Phase I of the electric vehicle charging stations is complete (underground charging infrastructure and 15 chargers). Phase II installation and completion are expected in 2025/2026 (additional 15 chargers).
16-06 AC	Field Operations Centre – Building Design & Construction	17,000,000	CRD space planning completed. Third floor added for other CRD office needs (\$5 million in funding). Design-Build contractor selected, conceptual and floorplan design in progress. Construction contract to be executed in September.
20-27 AC	Forest Resilience – Modelling and Thinning Trial	1,525,000	Modelling in progress, thinning trial completed, now in results & monitoring phase. Planning for fall juvenile spacing trial in progress.
20-01 AC	Kapoor Main mile 1 Bridge & Asphalt replacement	890,000	Designs completed, testing completed, project deferred to 2025 due to operational restrictions.

Appendix A

Project Number	Project Title	Total Budget	Status
17-27 AC	14G Road Bridge Supply & Installation	\$380,000	Design completed; contract awarded for completion by end of October.
18-19	Sooke Lake Dam – Instrumentation System Improvements	\$2,200,000	Design is nearly complete for surveillance instrumentation improvements, including piezometers, weirs, etc. CRD plan to tender for construction in 2025.
19-07	Integrate Dam Performance and Hydromet into SCADA	\$1,300,000	Planning and scope definition underway for integrating dam instrumentation to existing Supervisory Control and Data Acquisition (SCADA) system.
21-06	Sooke Lake Dam Spillway Hoist and Stop Log Replacement	\$775,000	Hatch Engineering has completed an options analysis and recommendation for this work. CRD assessing this project and how to implement with other dam safety projects.
21-03	Implications from Deception Dam, Dam Safety Review	\$2,000,000	Dam Safety Reviews were completed in 2022. Phase 1 work is underway to resolve dam safety deficiencies identified in the Dam Safety Reviews. Replacement of low-level overflow gate and vent pipe underway. Long lead material order placed with construction planned for 2025.
21-04	Implications Saddle Dam, Dam Safety Reviews	\$800,000	Dam Safety Reviews were completed in 2022. Phase 1 work is underway to resolve dam safety deficiencies identified in the Dam Safety Reviews.
21-21, 21-19	Goldstream High Level Outlet Valve and Low-Level Valve Replacements	\$550,000	Engineering reviews initiated to determine if delivery can coincide with Deception Dam low level overflow gate replacement.
23-08	Regional Watershed Dams – Flood Forecasting System	\$300,000	Develop an updated flood forecasting system and standard operating procedures to proactively manage the reservoir levels while balancing dam safety and security of supply risks. This project commenced in late 2023 and is underway.
23-09	Sooke Lake Dam, Dam Safety Review	\$200,000	Draft Dam Safety Review report has been received for review. Planning to finalize report and prepare action plan before end of 2024.
17-13	Continuation of Asset Management Planning	\$400,000	Develop level-of-service criteria and assess the service for material condition, utilization, valuation, failure

Appendix A

Project Number	Project Title	Total Budget	Status
			modes, etc. to determine future renewals. This project has been initiated and a consultant will be onboarded in Q3 2024.

- Project Numbers are reference to the 2024 Capital Plan.
- The projects listed above are not inclusive of all capital projects currently underway but highlight some critical projects currently in progress.

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, JULY 17, 2024**

SUBJECT **Water Quality Summary Report for Greater Victoria Drinking Water System
– January to April 2024**

ISSUE SUMMARY

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

BACKGROUND

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

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

Water quality monitoring is one of the cornerstones of the multi-barrier approach to providing safe potable drinking water to the region's residents. The monitoring program ensures proper integration of source water information, treatment processes, distribution infrastructure and delivery of water to customers. The program also ensures that potential risks 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 and spring period from January to April 2024. In the past, quarterly update reports have been provided to the Commission. Starting in 2024, the water quality summary report interval will increase to every four months.

IMPLICATIONS

Environmental Implications

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

Intergovernmental Implications

The CRD provides compliance monitoring and reporting of the municipal systems, in addition to its regional commitments, to deliver effective and efficient oversight of water quality within the overall water system. Any issues that may arise within the municipal system remain the responsibility of the municipalities.

Social Implications

The full disclosure of water quality monitoring data maintains public confidence in the CRD to effectively manage the regional drinking water supply. 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.

CONCLUSION

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 and spring 2024 indicate good water quality in the source water and treated drinking water; all critical parameters indicate stable general conditions. Staff are providing this report to share the latest water quality monitoring results with the Commission.

RECOMMENDATION

There is no recommendation. This report is for information only.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Luisa Jones, MBA, General Manager, Parks, Recreation & Environmental Services
Concurrence:	Alicia Fraser, P. Eng., General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: Water Quality Summary Report for the Greater Victoria Drinking Water System
– January to April 2024

WATER QUALITY SUMMARY REPORT FOR THE GREATER VICTORIA DRINKING WATER SYSTEM JANUARY TO APRIL 2024

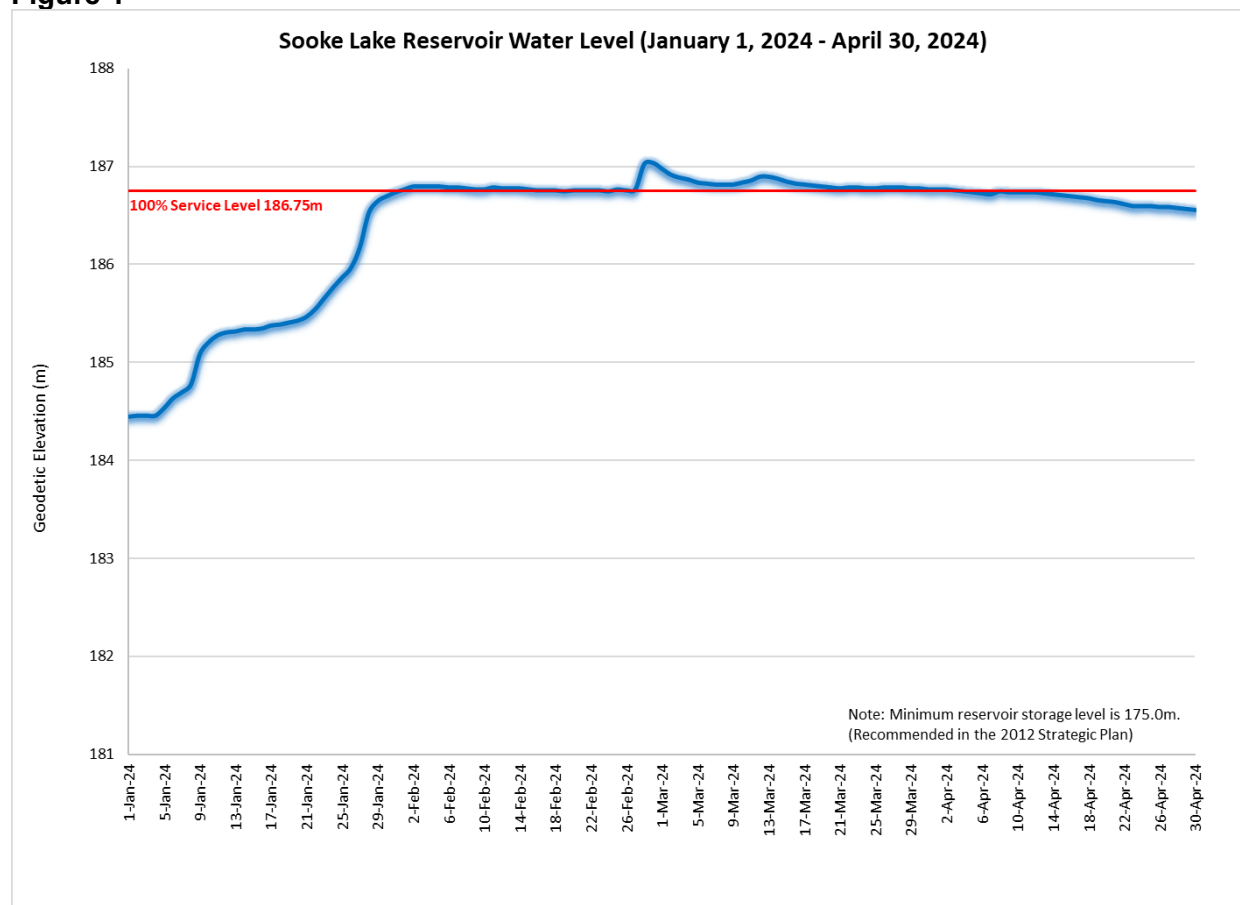
July 2024

1. SOURCE WATER – SOOKE LAKE RESERVOIR

(a) Physical Parameters

Water Levels. Sooke Lake Reservoir was at 82% capacity at the start of this reporting period on January 1, 2024. Intensive rain and snow melt saw the reservoir filling very quickly in January. Between February 1 and April 4, it remained at a full level (see Figure 1). Since April 5, reservoir levels began declining due to drier weather and increasing water demand in Greater Victoria. By the end of this reporting period on April 30, the reservoir levels were at 98.5%, which is slightly lower than the average of the last two decades at that time.

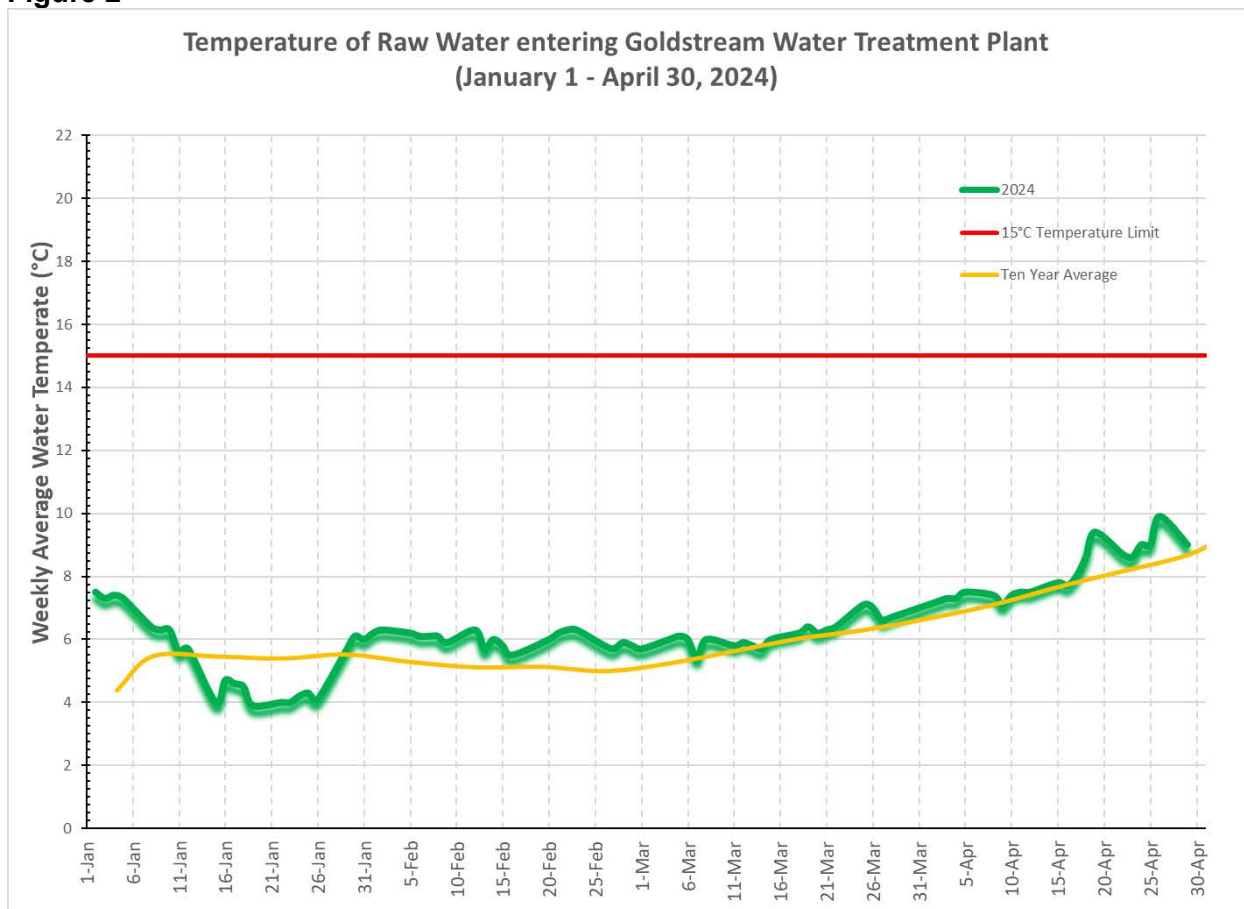
Figure 1



Water Temperature. The raw water temperature measured at the Goldstream Water Treatment Plant tracked right along the long-term average trend for most of the reporting period (see Figure 2). In early January, the water temperature was still several degrees higher than typical for this time of year due to an unusually warm December. By mid-January, a cold weather period

depressed the water temperatures to below the seasonal average for a period of about two weeks. Thereafter, it fluctuated just around the long-term trendline until the end of April.

Figure 2



Turbidity. Turbidity in the lake near the intake tower remained well below the 1.0 Nephelometric Turbidity Unit (NTU) limit and was very consistent for the entire reporting period (Table 1). There were no major algal events with significant impact on the raw water turbidity. Also, winter rainfall and runoff events did not significantly affect the turbidity. This demonstrates the robustness of the Sooke Lake Reservoir in terms of turbidity impacts. The low turbidity of the raw water allows the ultraviolet 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	7	NTU	0.20	0.25	0.22

Water Transparency. The transparency of the lake water measured with the Secchi Disc in the lake was high (between 6 and 10 m) and consistent with the long-term average. Higher algal abundance during the later part of the reporting period accounted for the slightly lower transparency around 6-7 m, but with no measurable impact on the treatability of the water. The average Secchi Disc depth during this reporting period was around 8 m.

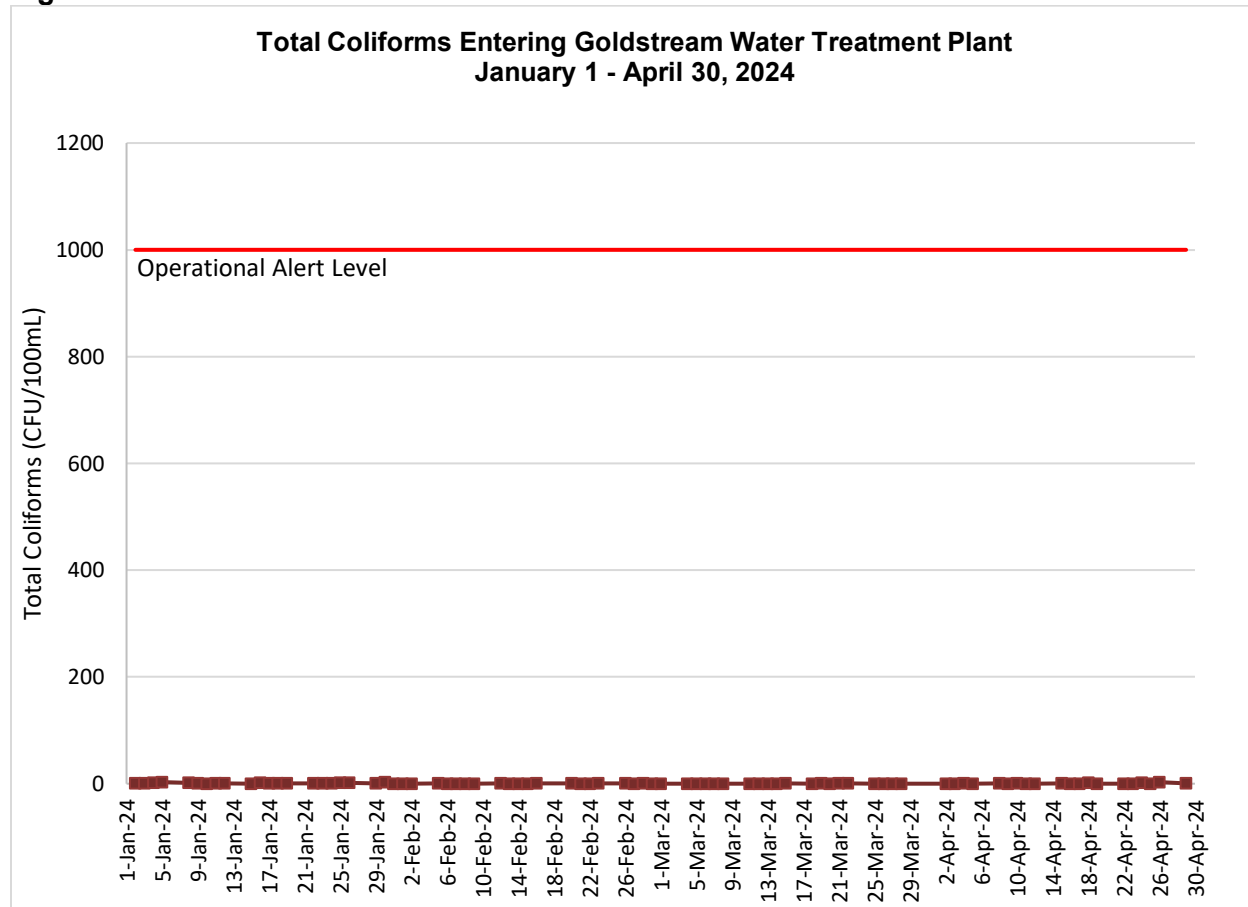
Dissolved Oxygen. New lake profiler sensor technology allowed staff to generate detailed dissolved oxygen depth profiles in three parts of Sooke Lake. The data shows that Sooke Lake remained well oxygenated throughout this period in all depths. The lowest dissolved oxygen concentrations in station only varied between 8.2 and 8.7 mg/L. This is typical for a fully mixed oligotrophic lake during the cool season.

(b) Bacteria

Total Coliform Bacteria and E. coli. The total coliform concentrations in the raw source water entering the Goldstream Water Treatment Plant were extremely low from January through April. Often, no total coliform bacteria were detected at all, with the highest concentrations recorded only being 3 CFU/100 mL (see Figure 3).

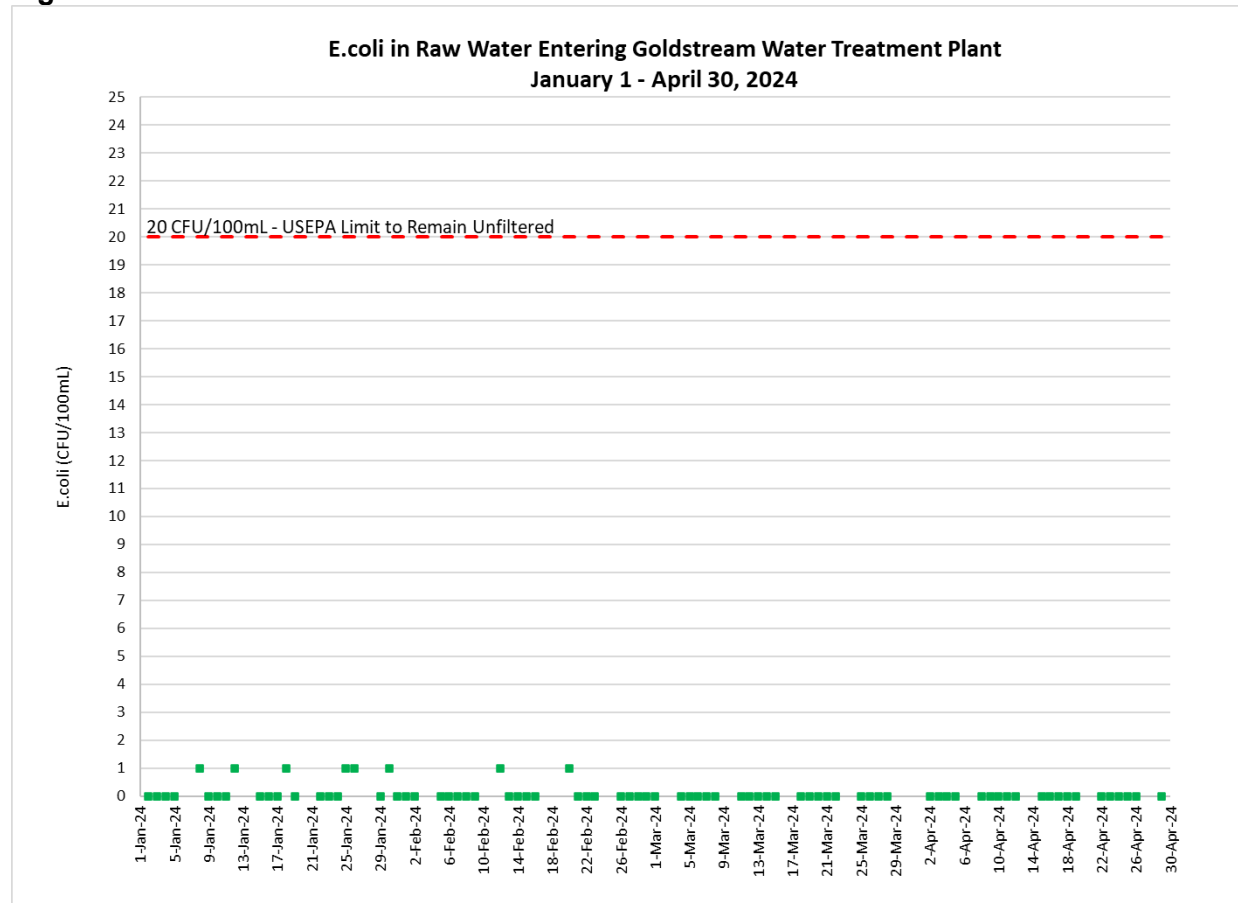
The United States Environmental Protection Agency (USEPA) Surface Water Treatment Rule for avoiding filtration has a non-critical total coliform criterion of maximum 100 CFU/100 mL at the 90th percentile of a six-month sample set. The 90th percentile of total coliform concentrations in the raw water between November 2023 and April 2024 was 11 CFU/100 mL and was therefore in compliance with this non-critical USEPA filtration exemption criterion.

Figure 3



E. coli concentrations during the reporting period were mostly non-detected or extremely low and, therefore, consistently well under the limit for meeting the critical USEPA filtration exemption criteria for surface water used for drinking water supply (Figure 4). Meeting this criterion means compliance with the USEPA Surface Water Treatment Rule for avoiding filtration. The *E. coli* concentrations were also well below the benchmark used in the *2020 BC Source Drinking Water Quality Guidelines* (90th percentile *E. coli* ≤ 10 CFU/100 mL). These results are typical for Sooke Lake Reservoir during the winter and spring season.

Figure 4



(c) 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. The wet season is typically the period when rain-induced runoff introduces new nutrients to the lake. These newly-introduced nutrients are then quickly consumed by aquatic organisms, in particular with warmer and sunnier conditions during the spring. This natural cycle is an indication of a healthy and functioning food chain in the lake's ecosystem (Tables 2 and 3).

Table 2

Sooke Reservoir, South Basin (1m) - SOL-00-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Total Nitrogen	4	ug/L	69	146	112.0
Total Phosphorus	4	ug/L	2.20	3.70	2.80

Table 3

Sooke Reservoir, North Basin (1m) - SOL-04-01					
	Samples Collected	Unit of Measure	Minimum	Maximum	Mean
Total Nitrogen	4	ug/L	63	140	102
Total Phosphorus	4	ug/L	1.90	3.50	2.78

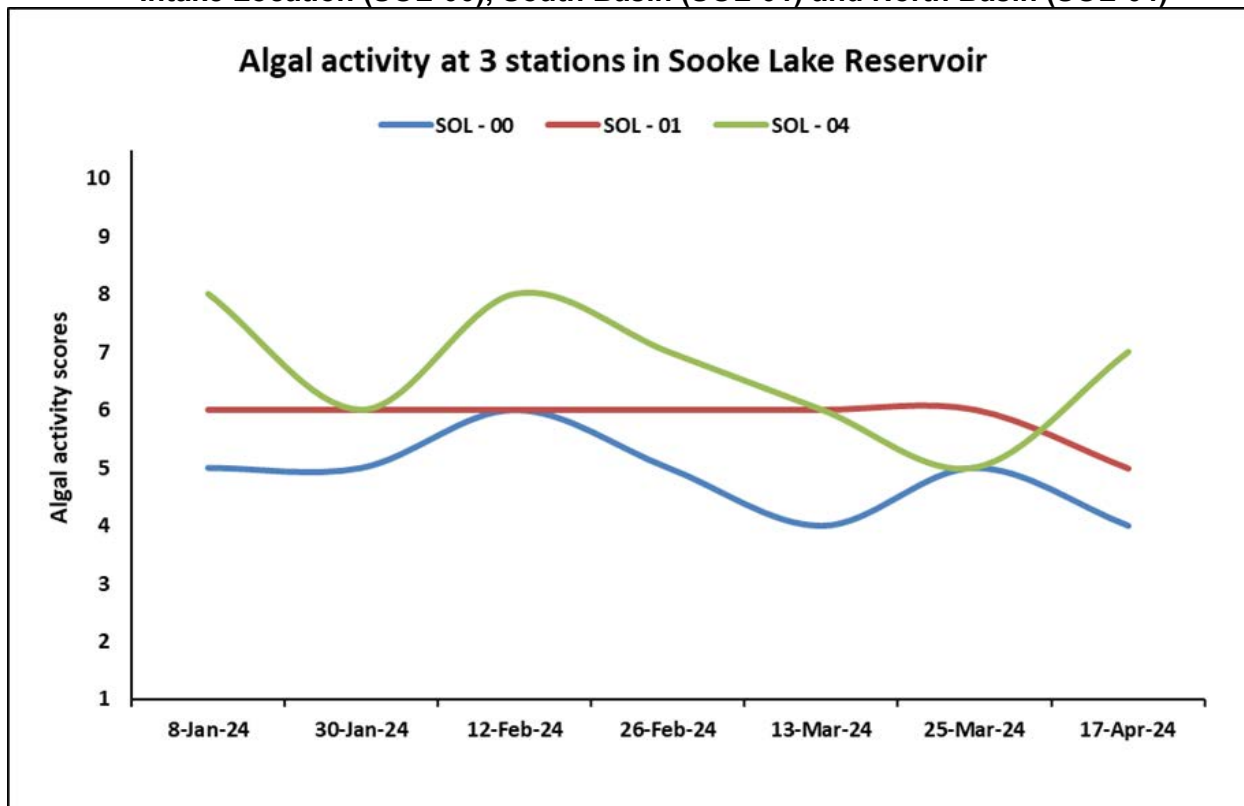
(d) Protozoan Parasites

In three test sets during this reporting period on the raw water entering the Goldstream Water Treatment Plant, no *Cryptosporidium* oocysts and no *Giardia* cysts were found.

(e) Algae

To provide a general picture of the algae activity in Sooke Lake Reservoir, an algal activity index (AA Index) was applied, ranging from 1-10, which is assessed via towed samples collected biweekly at three stations. This tow-sample methodology utilizes a 64-micron mesh-size net and aims to capture and quickly identify any algal taxa with immediate adverse potential. The AA Index fluctuated only slightly from January to April and across the different parts of the reservoir (Figure 5). The algal composition during this period was dominated by the common colonial diatom, *Asterionella formosa*, which normally contains eight cells per colony. The subdominant taxon was a colonial golden alga, i.e., *Dinobryon bavaricum*, and each colony can have dozens of cells. Both species are common in Sooke Lake and can cause taste, odour and/or clogging issues when they are in bloom, but their population never reached a bloom level. The low nutrient concentrations did not allow for proliferated growth.

Figure 5: Algal Activity Index (AA Index) from January-April 2024, Sooke Lake Reservoir, Intake Location (SOL-00), South Basin (SOL-01) and North Basin (SOL-04)



2. WATER TREATMENT PLANTS

(a) Goldstream Water Treatment Plant

Turbidity. The raw water entering the Goldstream Water Treatment Plant was consistently well below 1 Nephelometric Turbidity Unit (NTU) during the reporting period (Table 4). Heavy rainfall and runoff or snowmelt events typically have no measurable impact on the turbidity levels at the South Basin intake. This is the result of the sheltered location of this intake that benefits from the lake's superb settling capacity from the inflow locations in the North Basin to the water extraction location in the South Basin.

Table 4

Goldstream Water Treatment Plant Turbidity - Raw Water	
Samples Collected	81
Minimum	0.15 NTU
Maximum	0.45 NTU
Mean	0.21 NTU

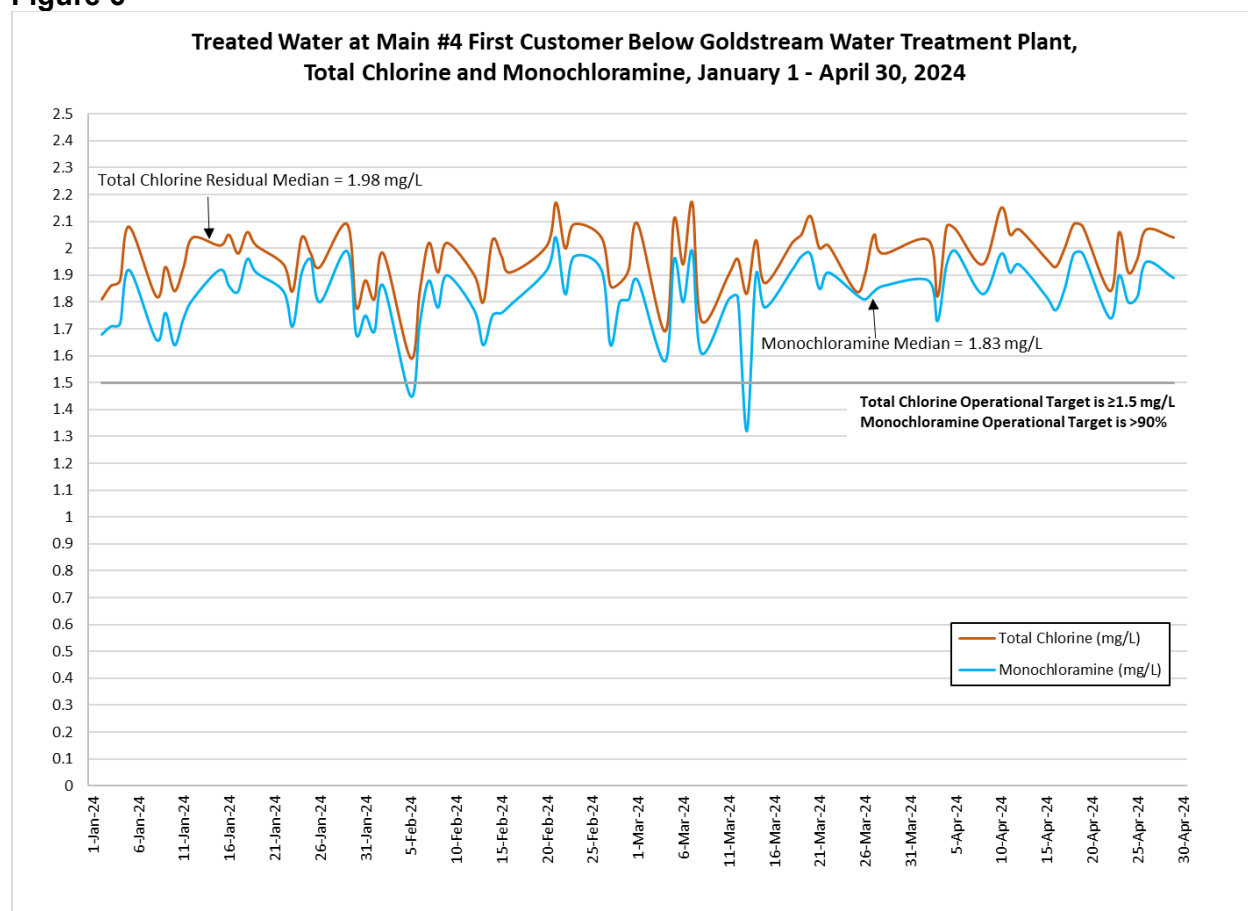
Main #4 First Customer Sampling Station Total Coliform Bacteria and E.coli. The Main #4 First Customer Sampling Station immediately downstream of the Goldstream Water Treatment Plant is sampled daily to monitor the efficacy of the disinfection treatment process. One sample within this reporting period tested positive for total coliform bacteria on April 15: 1 CFU/100 mL. The resample the next day was free of total coliform bacteria. No E.coli bacteria were found in any sample collected from this site.

Main #5 First Customer Sampling Station Total Coliform Bacteria and E.coli. The Main #5 First Customer Sampling Station immediately downstream of the Goldstream Water Treatment Plant is also sampled daily to monitor the efficacy of the disinfection treatment process. No E. coli or total coliform bacteria were found in any sample collected from this site.

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

Secondary Disinfection. Figure 6 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 also consistently achieved except for a very brief period on March 13. Adequate and effective secondary disinfection was provided across the entire system throughout the reporting period.

Figure 6



(b) 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).

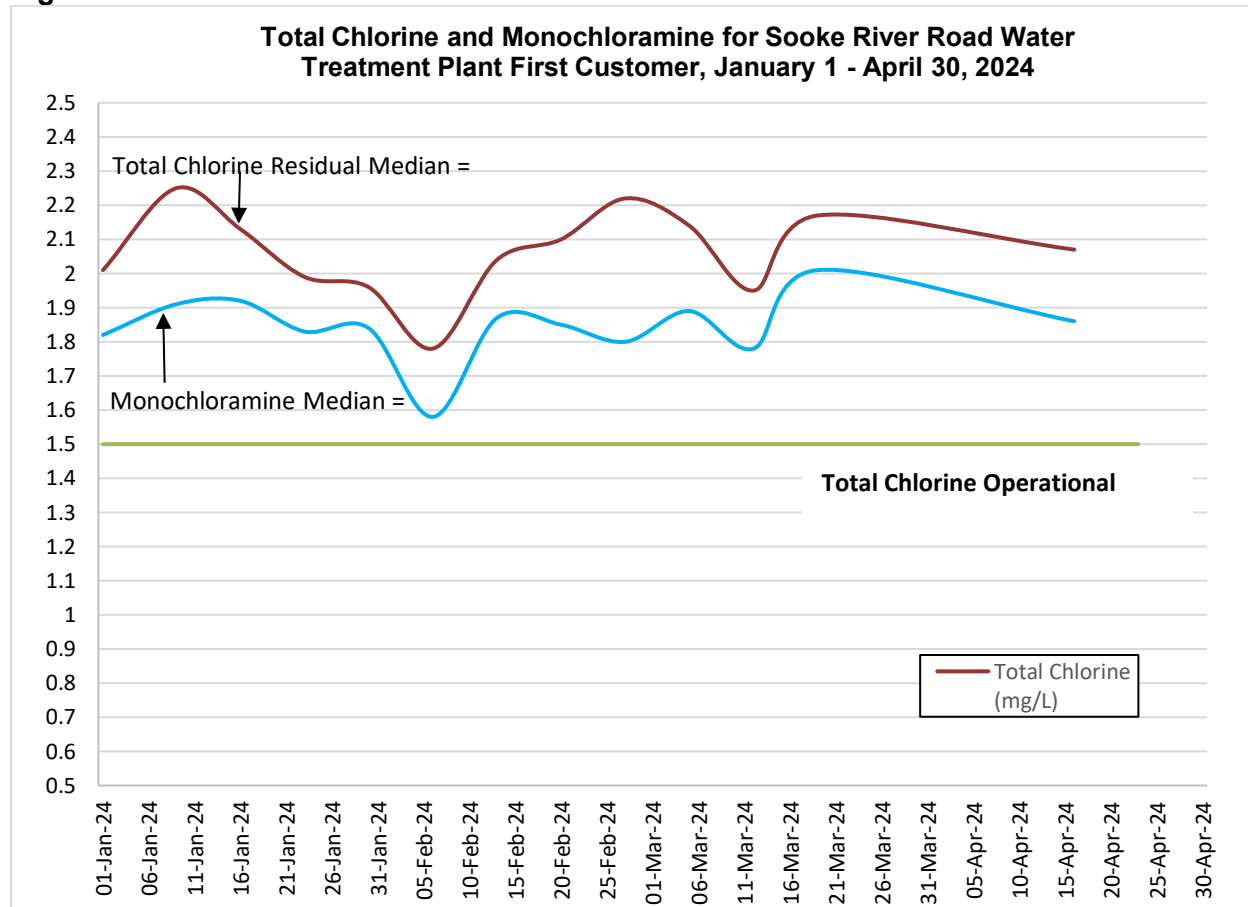
Table 5

Sooke River Road Water Treatment Plant Turbidity - Raw Water	
Samples Collected	13
Minimum	0.15 NTU
Maximum	0.45 NTU
Mean	0.23 NTU

Sooke First Customer Sampling Station Total Coliform Bacteria and E.coli. The Sooke First Customer Sampling Station, immediately downstream of the Sooke Water Treatment Plant, is sampled weekly to monitor the efficacy of the disinfection treatment process. No total coliform or *E.coli* bacteria were found in any sample collected from this site.

Secondary Disinfection. Figure 7 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. The target ratio of 80% monochloramine (older plant, therefore not as precisely controllable) was also consistently achieved. Adequate and effective secondary disinfection was provided across this much smaller distribution system.

Figure 7



3. DISTRIBUTION SYSTEMS

(a) Goldstream Service Area

Table 6

Goldstream Water Treatment Plant Service Area										
Month/Year	Samples Collected	Total Coliforms (CFU/mL)				E.coli (CFU/100mL) Samples > 0	Turbidity		Chlorine Residual Median mg/L as CL2	Water Temp. Median °C
		Samples TC > 0	Percent TC > 0	Resamples TC > 0	Samples TC > 10		Samples Collected	Adverse > 1 NTU		
Jan-24	390	0	0	0	0	0	33	1	1.64	7.5
Feb-24	383	0	0	0	0	0	37	1	1.68	8
Mar-24	373	0	0	0	0	0	29	0	1.69	8.2
Apr-24	395	0	0	0	0	0	32	0	1.63	10.3
Total:	1553	0	0.0	0	0	0	131	2	1.66	8.1

Total Coliform Bacteria and E.coli. None out of the 1,553 bacteriological distribution system samples tested positive for total coliform bacteria during the entire reporting period. No sample tested positive for *E.coli* bacteria (Table 6).

Turbidity. Two of the 131 turbidity samples registered higher than 1 NTU (Table 6), likely as a result of water main flushing activities in the winter/spring. Overall, these results are an indication of good drinking water quality.

Total Chlorine Residual. A median total chlorine residual concentration of 1.66 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 consistently below the aesthetic objective in the *Canadian Drinking Water Quality Guidelines* (15°C).

Water Chemistry. The average pH of the drinking water in the Goldstream Service Area was 7.7 during the reporting period. The pH ranged from 6.7 to 8.5, which is typical when operating the hypochlorite chlorination equipment. The average alkalinity was 16.9 mg/L. Both pH and alkalinity have increased since the commissioning of the hypochlorite chlorination equipment.

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 - Goldstream WTP Service Area						
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	MAC (Maximum Acceptable Concentration)
Haloacetic Acids (HAAs)	8	ug/L	5.4	19.0	12.9	80
Trihalomethanes (THMs)	8	ug/L	12.0	20.0	16.4	100
NDMA	8	ng/L	<1.9	<2.1	<1.93	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, five are monitored particularly closely: iron, manganese, lead, aluminum and copper. All metal concentrations were below the respective Health Canada maximum acceptable concentration or the aesthetic objective (Table 8).

Table 8

Metals - Goldstream WTP Service Area								
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	AO (Aesthetic Objective)	OG (Operational Guideline)	MAC (Maximum Acceptable Concentration)
Aluminum	7	ug/L	8.8	16.1	13.0		100	2900
Copper	7	ug/L	2.8	14.2	6.9	1000		2000
Iron	7	ug/L	10.2	30.2	18.8	300		
Lead	7	ug/L	<0.2	<0.2	<0.2			5
Manganese	7	ug/L	1.7	2.6	2.1	20		120

(b) Sooke Service Area

Table 9

Sooke River Road Water Treatment Plant Service Area										
Month/Year	Samples Collected	Total Coliforms (CFU/mL)				E.coli (CFU/100mL) Samples > 0	Turbidity		Chlorine Residual Median mg/L as CL2	Water Temp. Median °C
		Samples TC > 0	Percent TC > 0	Resamples TC > 0	Samples TC > 10		Samples Collected	Adverse > 1 NTU		
Jan-24	35	0	0	0	0	0	6	0	1.31	7.1
Feb-24	37	0	0	0	0	0	8	0	1.26	7.5
Mar-24	33	0	0	0	0	0	6	0	1.26	7.7
Apr-24	30	0	0	0	0	0	7	0	1.39	9.9
Total:	135	0	0.0	0	0	0	27	0	1.29	7.6

Total Coliform Bacteria and E.coli. No bacteriological sample from the Sooke Service Area tested positive for total coliform or E.coli bacteria during the entire reporting period (Table 9).

Turbidity. None of the 27 turbidity samples registered above 1 NTU (Table 9). This is an indication of good drinking water quality.

Total Chlorine Residual. A median total chlorine residual concentration of 1.29 mg/L across the system indicates an effective secondary disinfection protecting the potability of the treated drinking water as it flows throughout the system (Table 9).

Water Temperature. The temperature of the drinking water in the system during this reporting period was consistently below the aesthetic objective in the *Canadian Drinking Water Quality Guidelines* (15° C).

Water Chemistry. The average pH of the drinking water in the Sooke Service Area was 7.6 during the reporting period. The pH ranged from 7.4 to 8.0 and is typically very stable and consistent across this system. The average alkalinity was 16.1 mg/L.

Disinfection Byproducts. The three typically monitored disinfection byproducts in a drinking water system have all been well below the Health Canada established health limits in the Sooke Service Area (Table 10).

Table 10

Disinfection Byproducts - Sooke River Road WTP Service Area						
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	MAC (Maximum Acceptable Concentration)
Haloacetic Acids (HAAs)	2	ug/L	21.0	27.0	24.0	80
Trihalomethanes (THMs)	2	ug/L	26.0	28.0	27.0	
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, five are monitored particularly closely: iron, manganese, lead, aluminum and copper. All metal concentrations were well below the respective Health Canada maximum acceptable concentration or the aesthetic objective (Table 11).

Table 11

Metals - Sooke River Road WTP Service Area								
Parameter	Samples Collected	Unit of Measure	Minimum	Maximum	Mean	AO (Aesthetic Objective)	OG (Operational Guideline)	MAC (Maximum Acceptable Concentration)
Aluminum	2	ug/L	9.8	14.8	12.3		100	2900
Copper	2	ug/L	5.8	6.5	6.1	1000		2000
Iron	2	ug/L	24.4	26.3	25.4	300		
Lead	2	ug/L	0.24	0.33	0.29			5
Manganese	2	ug/L	1.8	1.9	1.85	20		120

CONCLUSION

During this winter and spring reporting period (January-April 2024), 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. There were no water quality affecting events during this reporting period.

The multi-barrier approach applied to the Greater Victoria Drinking Water System ensures the excellent drinking water quality achieved during the reporting period.



Capital Regional District

HOTSHEET AND ACTION LIST

Juan de Fuca Water Distribution Commission

Tuesday, July 2, 2024

12 PM

Goldstream Meeting Room
479 Island Highway
Victoria, BC

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. A name has been identified beside each item for further action and follow-up.

3. ADOPTION OF MINUTES

The minutes of the May 7, 2024 Juan de Fuca Water Distribution Commission meeting were adopted as circulated.

7. COMMISSION BUSINESS

The following reports were received for information:

- 7.1 Juan de Fuca Water Service 2024 Mid-Year Capital Projects and Operations Update
- 7.2 Summary of Recommendations from Other Water Commissions
- 7.3 Water Watch Report

9. NEW BUSINESS

9.1 Stipend for Juan de Fuca Water Distribution Commissioners

That staff bring forward the June 2, 2020 meeting material regarding stipends for Juan de Fuca Water Distribution Commissioners to the next meeting.

CARRIED

CAPITAL REGIONAL DISTRICT - INTEGRATED WATER SERVICES**Water Watch**

Issued July 08, 2024

Water Supply System Summary:**1. Useable Volume in Storage:**

Reservoir	July 31 5 Year Ave		July 31/23		July 7/24		% Existing Full Storage
	ML	MIG	ML	MIG	ML	MIG	
Sooke	75,864	16,690	73,988	16,277	80,684	17,750	87.0%
Goldstream	7,493	1,648	8,413	1,851	9,359	2,059	94.4%
Total	83,357	18,338	82,401	18,128	90,043	19,810	87.7%

2. Average Daily Demand:

For the month of July	210.8 MLD	46.38 MIGD
For week ending July 07, 2024	210.8 MLD	46.38 MIGD
Max. day July 2024, to date:	230.4 MLD	50.68 MIGD

3. Average 5 Year Daily Demand for July

Average (2019 - 2023)	202.4 MLD ¹	44.52 MIGD ²
-----------------------	------------------------	-------------------------

¹MLD = Million Litres Per Day ²MIGD = Million Imperial Gallons Per Day**4. Rainfall July:**

Average (1914 - 2023):	22.2 mm
Actual Rainfall to Date	0.0 mm (0% of monthly average)

5. Rainfall: Sep 1- Jul 7

Average (1914 - 2023):	1,590.2 mm
2023/2024	1,334.7 mm (84% of average)

6. Water Conservation Action Required:

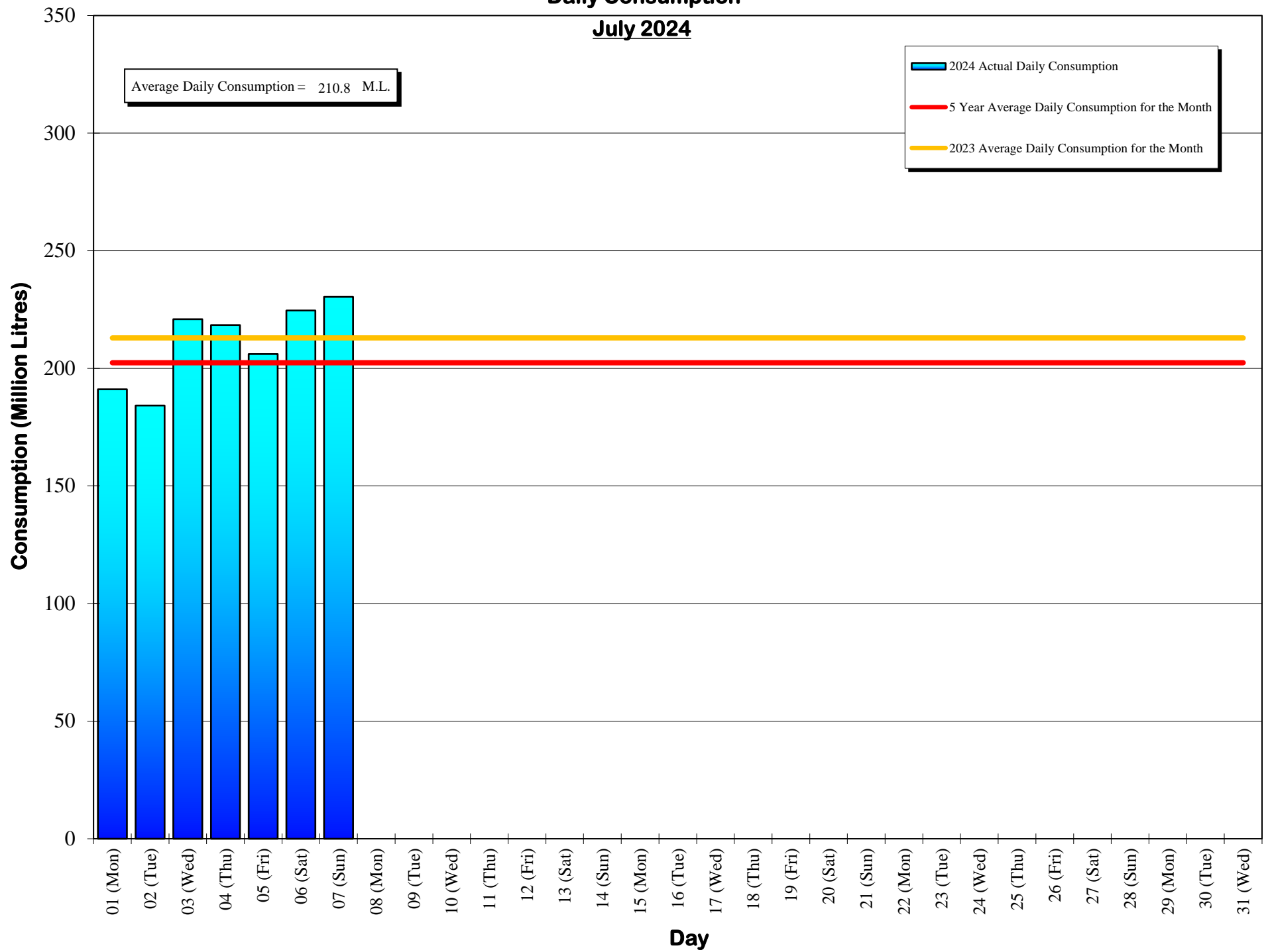
CRD's Stage 1 Water Conservation Bylaw is now in effect through September 30, 2024
 Visit our website at www.crd.bc.ca/water for more information.

If you require further information, please contact:

Alicia Fraser, P. Eng.
 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
July 2024



Daily Consumptions: - July 2024

Date	Total Consumption		Air Temperature @ Japan Gulch		Weather Conditions	Precipitation @ Sooke Res.: 12:00am to 12:00am			
	(ML) ^{1.}		(MIG) ^{2.}			Rainfall (mm)	Snowfall ^{3.} (mm)	Total Precip.	
01 (Mon)	191.1		42.0	24	12	Sunny	0.0	0.0	0.0
02 (Tue)	184.2	<=Min	40.5	22	11	Sunny	0.0	0.0	0.0
03 (Wed)	220.9		48.6	23	10	Sunny	0.0	0.0	0.0
04 (Thu)	218.4		48.1	27	12	Sunny	0.0	0.0	0.0
05 (Fri)	206.1		45.3	30	14	Sunny	0.0	0.0	0.0
06 (Sat)	224.6		49.4	29	15	Sunny	0.0	0.0	0.0
07 (Sun)	230.4	<=Max	50.7	32	15	Sunny	0.0	0.0	0.0
08 (Mon)									
09 (Tue)									
10 (Wed)									
11 (Thu)									
12 (Fri)									
13 (Sat)									
14 (Sun)									
15 (Mon)									
16 (Tue)									
17 (Wed)									
18 (Thu)									
19 (Fri)									
20 (Sat)									
21 (Sun)									
22 (Mon)									
23 (Tue)									
24 (Wed)									
25 (Thu)									
26 (Fri)									
27 (Sat)									
28 (Sun)									
29 (Mon)									
30 (Tue)									
31 (Wed)									
TOTAL	1475.7 ML		324.64 MIG				0.0	0	0.0
MAX	230.4		50.68	32	15		0.0	0	0.0
AVG	210.8		46.38	26.7	12.7		0.0	0	0.0
MIN	184.2		40.52	22	10		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 July (1914-2023)	22.2 mm
Actual Rainfall: July	0.0 mm
% of Average	0%
Average Rainfall (1914-2023): Sept 01 - Jul 07	1,590.2 mm
Actual Rainfall (2023/24): Sept 01 - Jul 07	1,334.7 mm
% of Average	84%

Number days with precip. 0.2 or more
0

Water spilled at Sooke Reservoir to date (since Sept. 1) =

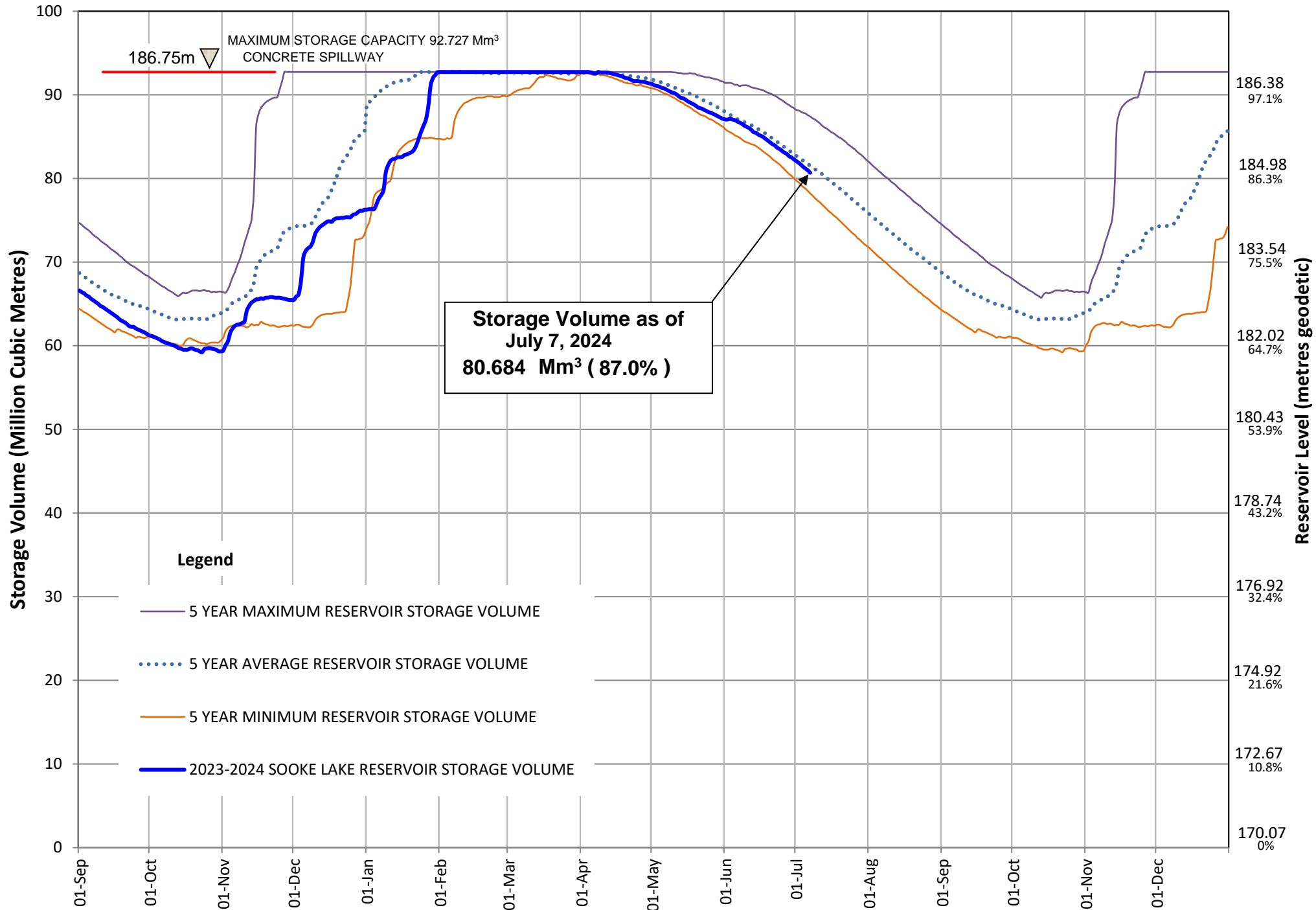
2.46 Billion Imperial Gallons

=

11.20 Billion Litres

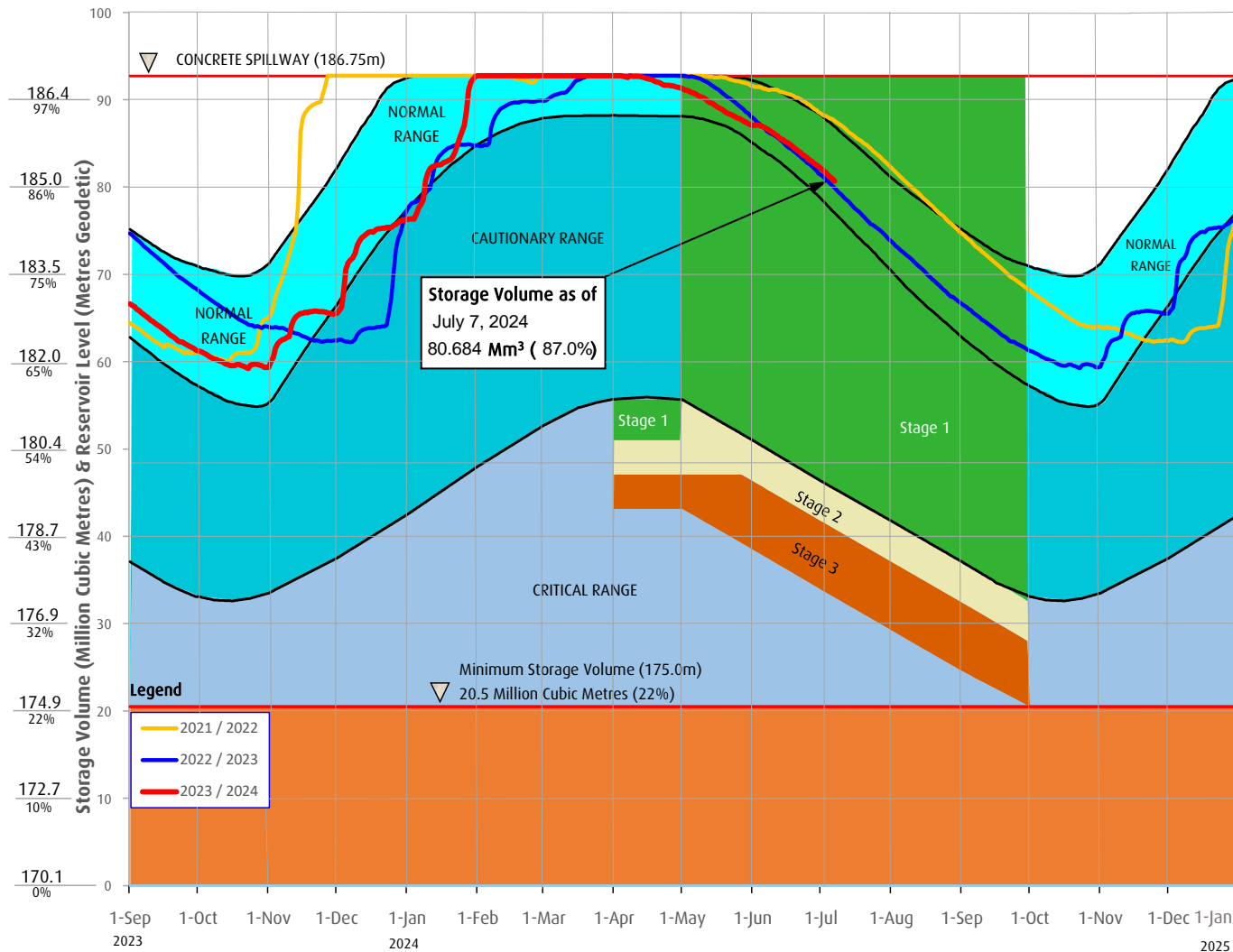
SOOKE LAKE RESERVOIR STORAGE SUMMARY

2023 / 2024



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.

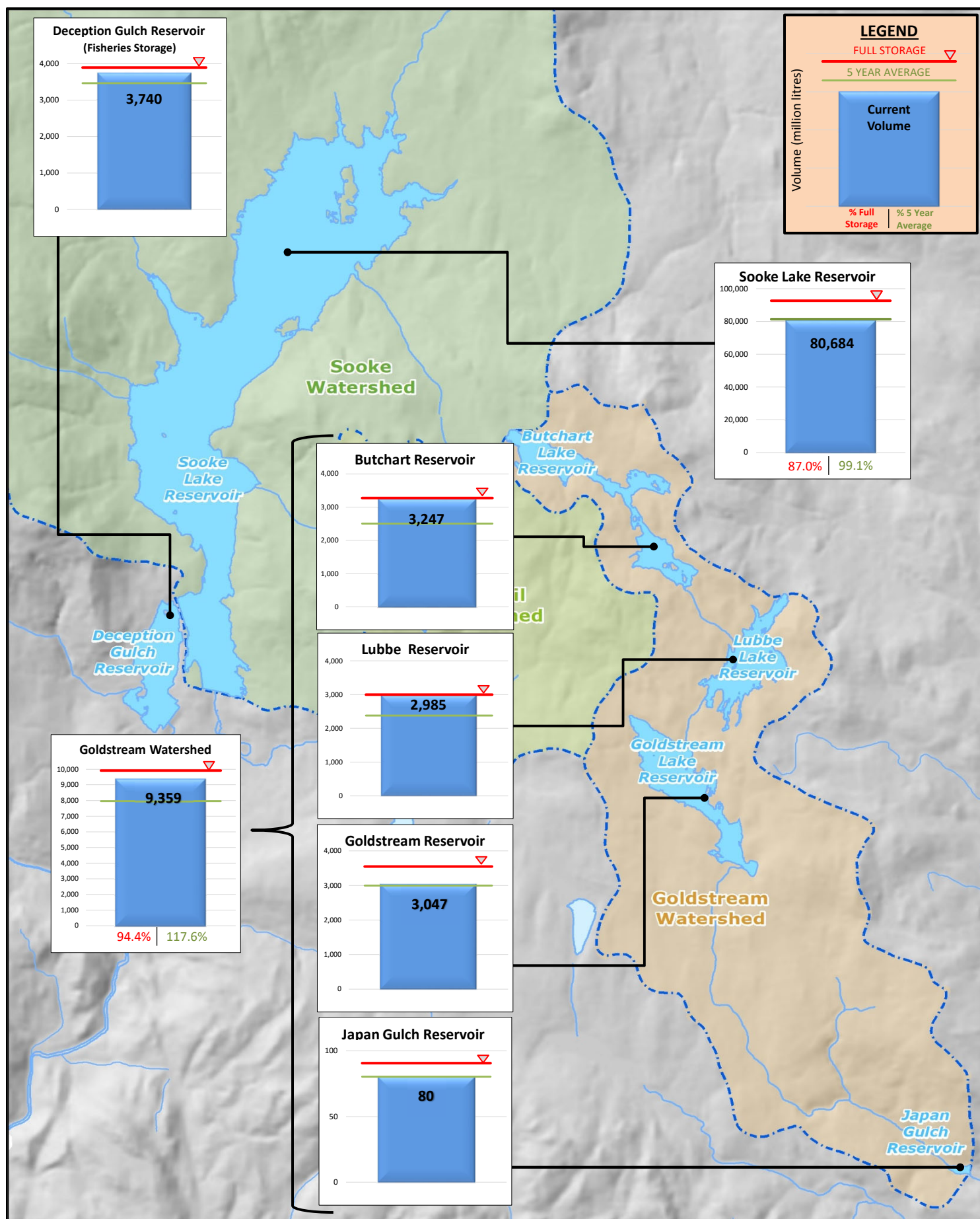
Stage 2 is initiated when it is determined that there is an acute water supply shortage. During this time, lawn water is permitted once a week at different times for even and odd numbered addresses.

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 July 07, 2024



Date July 9, 2024

To: The Regional Water Supply Commission, July 17, 2024

From: Jack Hull, former General Manager, Integrated Water Services 1992 – 2010

At the meeting of the Regional Water supply Commission on July 20, 2022, the following motion was moved, seconded and passed:

That the Regional Water Supply Commission:

1. Approve the 2022 Master Plan, **as a guide to future water supply planning:** and
2. Recommend that the Capital Regional District Board approve the 2022 Master Plan, **as a guide to future water supply planning.** (Emphasis added).

The motion to defer approval until Commissioners had an opportunity to review the report was defeated. The Commission adopted the 2022 Master Plan without having reviewed it.

With the proposed introduction of the Regional development cost charge and recent media reports it would appear that the Master Plan is not being used as a guide to future water supply planning, but as a plan to be implemented. This opinion is supported by the lack of interest in substantiating the assumptions on which the Master Plan is based. Substantiating the assumptions could result in the deferral of significant capital expenditures.

Two media reports (Victoria NEWS and Chek TV) the week of June 10 suggested that a major fire in the water supply watersheds was inevitable requiring construction of a \$1.1 billion filtration facility and that an incident like the one in Calgary could occur here. The 2022 Master Plan identified various risks, but failed to quantify those risks and assumed, based on those risks that a \$1.1 billion filtration facility would be required by the mid 2030's.

Risk – Wild Fires

In the Victoria News letter the Vice-Chair of the Regional Water Supply Commission states 'But the most immediate threat is on our doorstep: wildfires' and '..it is a question not if but when.' The suggested inevitability of a major fire is justification in part for construction of the \$1.1 billion filtration plant

There are two causes of wild fires in British Columbia, by humans (42%) and lightening strikes (58%). The human caused fire risk is minimal as public access to the Sooke Lake and Goldstream watersheds is prohibited. Out of an abundance of caution the decision to allow public access to the Leech watershed, particularly during fire season, should be rescinded.

The CRD water supply lands are the most intensively monitored and patrolled watersheds likely anywhere in Canada. The keys to preventing a major wildfire are early detection and rapid response to ignition sites, (reference the response to the 2021 lightening strike and subsequent fire). The CRD monitors lightening strikes and identifies locations and carries out on-site inspections for any evidence of ignition. CRD Staff are fully trained and equipped to respond to a fire either on CRD property or adjacent lands. Use of new technology such as drones would further enhance early detection and response capability. The CRD also has a mutual aid agreement with the Province to assist with fire fighting, if necessary.

However, the legacy plantation forests do represent a higher risk than old growth forests. This risk can be minimized by applying appropriate management practices including accumulated fuel management and by thinning the dense legacy plantations by a factor of ten to restore old growth density and characteristics. With targeted watershed management and response strategies, appropriately funded, a major wildfire that would degrade water quality in the Sooke Lake Reservoir is not inevitable.

Risks – Climate Change

Under climate change modelling milder, wetter winters and warmer drier summers are predicted. The Master Plan presents a list of generic potential impacts that could affect water quality including, runoff/flooding, increased erosion etc. No analysis of the impact of previous storm events was undertaken or the impact on water quality during the 5-year process of filling the expanded reservoir. Large areas of cleared forest were exposed to the elements during that filling process without adverse effects on water quality. Even under the most intense rainfall events in the past, water quality continued to meet criteria to remain unfiltered.

Landslides are cited as a risk due to more intense precipitation. There is no history of landslides in the Sooke Lake Watershed, even under intense rainstorms. The gently sloping terrain, low elevation, and thin, coarse (permeable) soils mitigate the risk of a landslide that would require construction of a filtration facility.

Risk – Regulatory

As stated in the 2022 Master Plan ‘The CRD drinking water quality from Sooke lake Reservoir is very good and it is difficult to provide economic justification for construction of filtration at this time’. The CRD water supply and treatment system currently meets Island Health criteria and the Provincial regulations to remain unfiltered. As long as that is the case, there is no economic or public health necessity to build a filtration facility. Should regulations change in the future, water purveyors will be given time to comply. Of course, water quality should continue to be monitored for adverse trends that would trigger the need for filtration or other treatment process.

In a letter dated February 6, 2024, Island Health stated, ‘At this point in time, maintaining the filtration exemption is appropriate, but this will change if drinking water

safety issues occur that could be mitigated by filtration and/or evidence for the risk of adverse source water quality increases.’ In the letter Island Health clearly linked filtration to introduction of the Leech River into the water supply system and appropriately recommended ‘planning now in order to implement before turbidity events occur.’

Impact of a Filtration Facility

Construction of a filtration facility will have a profound impact on our water supply system, transforming it from a low-cost, low energy system to a high cost, high energy system. The proposed system will rely on pumps to deliver water with an energy capacity of over 20 megawatts. Proposed future additions will add likely double the needed power capacity.

System Vulnerability to a Major Failure

The report on Chek TV News the week of June 10, suggested that our water supply system was vulnerable to an incident like the one in Calgary. CRD Board Chair, stated with reference to the Calgary feeder main break, that while he hopes a massive watermain break doesn’t happen here ‘it’s possible’. While no system is risk free, the CRD water supply system is much more resilient than implied in the media report and certainly more so than Calgary’s.

Our infrastructure is very different. Here feeder mains are made of steel. The feeder main that failed in Calgary was made of a combination of prestressed concrete and steel which is very difficult to repair as evidenced by the time it took to repair in Calgary. The failed section in Calgary was repaired with steel pipe of the type used here.

Rather than us learning from Calgary’s experience, perhaps Calgary could learn from ours. Coated and lined steel pipes with cathodic protection provide a more resilient and manageable conduit, with a lifespan of at least 100 years.

Regional Water Supply Infrastructure Resiliency

The Chek TV report stated that a single pipe connects the Sooke Reservoir to the feeder Mains. That is not correct. Water from the Sooke Lake Reservoir Intake tower is conveyed to the Kapoor tunnel via two steel pipes. These pipes are connected to the Kapoor tunnel (via the Head Tank), a lined tunnel constructed in bedrock. It could not rupture like the feeder main in Calgary. The tunnel is ultimately connected to steel feeder mains that convey water to the municipalities. In the unlikely event of a rupture, feeder mains made of steel are relatively easy to repair, in days not weeks. Steel is also the right choice in an earthquake zone due to its flexibility.

The Chek TV report failed to mention the alternative source of supply namely, the Goldstream Reservoirs, with capacity to supply the region for two months, longer with stage 3 or 4 restrictions. The Goldstream source of supply is activated annually to allow entry to the Kapoor Tunnel for the annual inspection.

The news report also stated that the CRD is planning to move ahead with a bypass to the connection from the Sooke Lake Reservoir to the UV treatment plant to provide redundancy in the event of a failure of the Kapoor Tunnel. According to the 2020 Master Plan the cost is estimated at over \$300 Million, with power capacity for pumps of as much as 18 megawatts. Initially the bypass would only be needed in the unlikely event of the Kapoor Tunnel failure. The Master Plan indicated the 2045-2050 timeframe for additional capacity, rather than for redundancy.

Before embarking on the redundancy bypass project, a risk assessment of the Kapoor Tunnel should be undertaken to quantify the likelihood and possible extent of a tunnel failure during a major earthquake, that would justify this level of expenditure on a second backup system, the Goldstream reservoirs being the first.

Infrastructure Deficit

Over a fifteen-year period, starting in the mid 1990's, The CRD invested over \$150 million to address water supply capacity, water treatment, and to eliminate the accumulated infrastructure deficit (i.e. deferred investment and maintenance), in the Regional water supply infrastructure and to expand ownership of current and future water supply lands. The most vulnerable feeder main (e.g., No. 1 Main) was replaced and seismic upgrades undertaken (e.g., Goldstream dams). To ensure a new infrastructure deficit would not develop a comprehensive maintenance management programme was introduced to systematically service the infrastructure resulting in significant savings in operating and maintenance costs.

With the addition of ultraviolet treatment, the CRD water supply system was brought into compliance with Island Heath and provincial regulations for drinking water quality.

Demand Management

A demand management program was implemented that has resulted in the deferral of major growth-related projects for decades. As stated in the 2022 Master Plan, total demand is at a level last seen in the 1980's when the population was half what it is today. The Master Plan also noted that if per-capita demand was reduced to 300 litres per capita per day (l/c/d), the Leech Diversion could be deferred until 2060. (Diversion of the Leech River will almost certainly require construction of a filtration facility). Unfortunately, the Master Plan made no suggestions as to how that could be achieved.

The Master Plan did not analyse the per-capita use in new developments or in multi-family units in its projections but assumed, based on the average of the previous five years of declining per capita demand, no future change in per-capita demand. Edmonton, for example, found that new developments use 15% less water than average. Water use data should be analysed to project future per capita demand based on the available data rather than an assumption. Such an analysis could more accurately predict future demand likely allowing future capacity related projects to be deferred.

The capital program of \$2 billion proposed in the 2022 Master Plan will have an economic impact on the Region. Housing costs will rise, and drinking water will be considerably more expensive. It is in the public interest to study the economic impact study of the CRD water rate increasing by a factor of 3, rather than assuming constant per-capita demand. Rate increases of this magnitude may result in a reduction in discretionary water use, outdoor water use, for example. The study (price elasticity of demand) would provide a more credible estimate of future demand for planning purposes.

Given the profound impact implementing the 2022 Master Plan in the time frame presented will have on the drinking water system, it is surely in the public interest for the CRD to quantify the identified risks to our water supply, rather than proceed based on assumptions. The decision to proceed with a filtration plant should be based on actual water quality data and not on conjecture about possible risks. Obviously, sampling and analysis of water in the Sooke and Leech watersheds should be done given that future diversion of the Leech River will require some form of treatment.

Based on the assumptions, the 2022 Master Plan does provide a reasonable guide to future water supply planning. However, similar assumptions in the 1995 Long Term Water Supply Plan were quickly shown to be inaccurate, resulting in the deferral, for several decades, of many of the growth-related projects that are included in the current Master Plan. It is in the public interest for the Commission to exercise due diligence and undertake the analyses suggested above to reduce the uncertainty around the assumptions on which the 2022 Plan is based. The public could then be assured that decisions on investments in the Regional water system are based on validated data and not general assumptions.