

Notice of Meeting and Meeting Agenda Capital Regional District Board

Wednesday, June 14, 2023

1:05 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC

The Capital Regional District strives to be a place where inclusion is paramount and all people are treated with dignity. We pledge to make our meetings a place where all feel welcome and respected.

1. TERRITORIAL ACKNOWLEDGEMENT

2. APPROVAL OF THE AGENDA

3. ADOPTION OF MINUTES

3.1. [23-396](#) Minutes of the May 10, 2023 Capital Regional District Board Meeting

Recommendation: That the minutes of the Capital Regional District Board meeting of May 10, 2023 be adopted as circulated.

Attachments: [Minutes - May 10, 2023](#)

4. REPORT OF THE CHAIR

5. PRESENTATIONS/DELEGATIONS

5.1. Presentations

5.2. Delegations

5.2.1. [23-424](#) Delegation - James David Anderson; Representing Amalgamation Yes: Re: Agenda Item 6.11.: Transportation Governance Concepts and Next Steps.

6. CONSENT AGENDA

6.1. 23-381 Appointment of Officers

Recommendation: The Electoral Areas Committee recommends to the Capital Regional District Board: That for the purpose of Section 233 of the Local Government Act and Section 28(3) of the Offence Act and in accordance with Capital Regional District Bylaw No. 2681, Lance Hurrell, Tony Dobos, Wolfgang Brunnwieser, Maen Rashead, Aya Endrigo, Taelyn Munro, Nathaniel Blondeau, Sam Poffinbarger, Theron Watson, Sean Eversfield, Murray Fyfe, Bradley McQueen, Dana Dawson, and John-Brian Alag be appointed as a Bylaw Enforcement Officers.
(NWA)

Attachments: [Staff Report: Appointment of Officers](#)

6.2. 23-404 2023 Salt Spring Island Local Community Commission Election Results

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

Attachments: [Staff Report: 2023 SSI LCC Election Results](#)

[Appendix A: Declaration of Official Results](#)

[Appendix B: Official Results \(by location\)](#)

[Appendix C: Voter Turnout Percentage by Opportunity](#)

[Appendix D: Ballot Account Summary](#)

6.3. 23-413 Salt Spring Island Local Community Commission Remuneration

Recommendation: The Electoral Areas Committee recommends to the Capital Regional District Board: That the CRD Board Remuneration and Travel Expense Reimbursement Policy be amended to provide remuneration in the amount of ten thousand dollars (\$10,000) annually to a Commissioner of the Salt Spring Island Local Community Commission, as attached at Appendix A.
(NWA)

Attachments: [Staff Report: Salt Spring Island Local Community Commission Remuneration](#)

[Appendix A: Board Remuneration & Travel Expense Reimbursement Policy](#)

6.4. 23-369 Motion with Notice: Household Hazardous Waste Pickup in Electoral Areas (Director Brent)

Recommendation: The Electoral Areas Committee recommends to the Capital Regional District Board: That staff investigate the cost and feasibility of Hartland funding a one-time household hazardous waste (HHW) pickup on the four islands in the Southern Gulf Islands, Juan de Fuca, and also on Salt Spring Island.
(NWA)

6.5. [23-379](#) CRD Participation in a Regional Community Safety and Wellbeing Plan and Council

Recommendation: The Hospitals and Housing Committee recommends to the Capital Regional District Board:

That staff be directed to include \$50,000 in funding in the 2024 Provisional budget to support work towards establishing a Regional Community Safety and Wellbeing Plan and Council.

(NWA)

Attachments: [Staff Report: CRD Participation in a RCSWPC](#)

[Appendix A: Towards a CSWPC for the Capital Region](#)

[Appendix B: Community Health Network Summary](#)

[Appendix C: Violence Prevention Accelerator Actions](#)

6.6. [23-353](#) Greater Victoria Drinking Water Quality - 2022 Annual Report

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

That the Greater Victoria Drinking Water Quality 2022 Annual Report be approved.
(NWA)

Attachments: [Staff Report: Greater Victoria Drinking Water Quality - 2022 Annual Report](#)

[Appendix A: Greater Victoria Drinking Water Quality - 2022 Annual Report](#)

6.7. [23-366](#) Capital Regional District Regional Parks Dam Safety - Critical Infrastructure

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

Attachments: [Staff Report: CRD Parks Dam Safety - Critical Infrastructure](#)

[Appendix A: CRD Parks Dam Portfolio - Map](#)

[Appendix B: Parks Dam Safety Pgmr - Critical Infrastructure Investment Plan](#)

6.8. [23-367](#) CRD Regional Parks Division - 2023 Operational Update

Recommendation: [At the May 24, 2023 Regional Parks Committee meeting, this information report was discussed and the following 2 motions arising were carried:]

The Regional Parks Committee recommends to the Capital Regional District Board:

1. That staff report at the July Capital Regional District Board meeting on adding a pilot to extend the IVB camping season beyond the current end of season on Labour Day.
2. That staff bring forward an information report, when available, on all historical and current information on the issue of the Island View Beach boat launch.

(NWA)

Attachments: [Staff Report: CRD Regional Parks Division - 2023 Operational Update](#)

[Appendix A: Regional Parks Divisional Priorities - Gantt Chart](#)

[Presentation: Parks 2023 Operational Update](#)

6.9. [23-368](#) Motion with Notice: Island View Beach Mosquito Management (Director Windsor)

Recommendation: The Regional Parks Committee recommends to the Capital Regional District Board: That staff be directed to report back on creating an engineering working group with Tsawout First Nation, CRD and Central Saanich to conduct a holistic assessment of the drainage of the Island View Beach area this year so that improvements to the drainage system can be made to address the pest mosquito issues. (NWA)

6.10. [23-357](#) Regional Trails Closure Policy

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

Attachments: [Staff Report: Regional Trails Closure Policy](#)

[Appendix A: CRD Regional Trails Closure Policy](#)

6.11. [23-364](#) Transportation Governance Concepts and Next Steps

Recommendation: [At the May 17, 2023 Transporation Committee meeting, the recommendation was amended to add Island Corridor Foundation as follows:] The Transportation Committee recommends to the Capital Regional District Board: That the CRD Board seek input from local governments, electoral areas, the province, and relevant partner agencies, including Island Corridor Foundation, according to the engagement approach as amended. (NWA)

Attachments: [Staff Report: Transportation Governance Concepts and Next Steps](#)

[Appendix A: Transportation Governance Jurisdictional Scan](#)

[Presentation: Transportation Governance Concepts](#)

7. ADMINISTRATION REPORTS

7.1. [23-373](#) Nils Jensen Memorial Bursary 2023

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

Attachments: [Staff Report: Nils Jensen Memorial Bursary 2023](#)

7.2. [23-374](#) Ed MacGregor Memorial Bursary 2023

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

Attachments: [Staff Report: Ed MacGregor Memorial Bursary 2023](#)

7.3. [23-380](#) Capital Regional District 2022 Statement of Financial Information - Statement of Severance Agreements Amendment

Recommendation: That the Capital Regional District Board approve the amended 2022 Statement of Financial Information - Statement of Severance Agreement as attached in Appendix B. (NWA)

Attachments: [Staff Report: SOFI Stmt of Severance Amendment](#)
[Appendix A: Amended Stmt of Severance Agreement](#)
[Appendix B: Amended 2022 SOFI](#)

7.4. [23-411](#) Bylaw No. 4552: Land Assembly, Housing and Land Banking Loan Authorization - Revision

Recommendation: 1. That third reading of Bylaw No. 4552, "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023", be rescinded;
(WA)
2. That Bylaw No. 4552 be amended as follows:
a. By renumbering section 2 to 3;
b. By inserting the following section in numerical order:
"2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is 30 years."
(NWA)
3. That Bylaw No. 4552 be read a third time as amended; and
(WA)
4. That Bylaw No. 4552 as amended be referred to the Inspector of Municipalities.
(NWA)

Attachments: [Staff Report: Land Assembly, Housing & Land Banking Loan Auth. Revision](#)
[Appendix A: Bylaw No. 4552 \(As Amended\)](#)
[Appendix B: Bylaw No. 4552 \(Redlined\)](#)

7.5. [23-423](#) Grant Acceptance for Regional Water Supply Main No. 4 - Mt. Newton to Highway 17 Section Replacement

Recommendation: 1. That the Capital Regional District Board approves execution of the Strategic Priorities Fund - Canada Community-Building Fund grant agreement for the Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement; and
2. That the Chair and Corporate Officer be authorized to execute the grant agreement on behalf of the Board.
(NWA)

Attachments: [Staff Report: Grant Acceptance for RWS Main No. 4](#)
[Appendix A: Strategic Priorities Fund - RWS Main No. 4](#)

8. REPORTS OF COMMITTEES

Electoral Areas Committee

8.1. [23-414](#) BC Building Energy Step Code Revision - Bylaw 4538, "Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023"

Recommendation: The Electoral Areas Committee recommends to the Capital Regional District Board:
a) That Bylaw 4538, "Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023" be introduced and read a first, second, and third time; and
(NWA)
b) That Bylaw No. 4538 be adopted.
(NWA, 2/3rds on adoption)

Attachments: [Staff Report: BC Bldg Energy Step Code Revision-Amendment Bylaw 4538](#)

[Appendix A: Bylaw No. 4538](#)

[Appendix B: Bylaw No. 3741 \(Redlined\)](#)

Regional Water Supply Commission

8.2. [23-345](#) Bylaw No. 4099 - Water Conservation Amendment: Once-Through Cooling Equipment

Recommendation: The Regional Water Supply Commission recommends to the Capital Regional District Board:
1. That Bylaw No. 4549, "Capital Regional District Water Conservation Bylaw No. 1, 2016, Amendment Bylaw No. 3, 2023", be introduced and read a first, second, and third time; and
(NWA)
2. That Bylaw No. 4549 be adopted.
(NWA, 2/3rds on adoption)
3. That Bylaw No. 4553 "Capital Regional District Ticket Information Authorization Bylaw 1990, Amendment Bylaw No. 76, 2023" be introduced and read a first, second, and third time; and
(NWA)
4. That Bylaw No. 4553 be adopted.
(NWA, 2/3rds on adoption)

Attachments: [Staff Report: Bylaw No. 4099 - Water Cons. Amendment: OTC Equipment](#)

[Appendix A: Bylaw No. 4099 - Consolidated Bylaw 2021](#)

[Appendix B: Bylaw No. 4549](#)

[Appendix C: Bylaw No. 4553](#)

9. BYLAWS

9.1. [23-406](#) Bylaw 4508 - "Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022"

Recommendation: That Bylaw 4508 - "Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022" be adopted.
(NWA)

Attachments: [Bylaw No. 4508](#)

10. NOTICE(S) OF MOTION

11. NEW BUSINESS**12. MOTION TO CLOSE THE MEETING****12.1. 23-400 Motion to Close the Meeting**

Recommendation:

1. That the meeting be closed for Appointments in accordance with Section 90(1)(a) of the Community Charter. [1 item]
2. That the meeting be closed for Labour Relations in accordance with Section 90(1)(c) of the Community Charter. [1 item]
3. That the meeting be closed for Land Acquisition/Disposition under Section (90)(1)(e) of the Community Charter. [1 item]
4. That such disclosures could reasonably be expected to harm the interests of the Regional District. [1 item]

13. RISE AND REPORT**14. ADJOURNMENT****Voting Key:****NWA - Non-weighted vote of all Directors****NWP - Non-weighted vote of participants (as listed)****WA - Weighted vote of all Directors****WP - Weighted vote of participants (as listed)**

Meeting Minutes

Capital Regional District Board

Wednesday, May 10, 2023

1:10 PM

6th Floor Boardroom
625 Fisgard Street
Victoria, BC

PRESENT

DIRECTORS: C. Plant (Chair), M. Alto, J. Bateman (for M. Tait), P. Brent, S. Brice, J. Brownoff, J. Caradonna, C. Coleman, Z. de Vries, B. Desjardins, S. Goodmanson, G. Holman, P. Jones, D. Kobayashi, M. Little, C. McNeil-Smith, K. Murdoch, D. Murdock, L. Szpak, D. Thompson (1:08 pm), S. Tobias, A. Wickheim, K. Williams, R. Windsor

STAFF: T. Robbins, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; K. Lorette, General Manager, Planning and Protective Services; K. Morley, General Manager, Corporate Services; I. Jesney, Acting General Manager, Integrated Water Services; D. Elliot, Senior Manager, Regional Housing; M. Lagoa, Deputy Corporate Officer; S. Orr, Senior Committee Clerk (Recorder)

Regrets: Director M. Tait

The meeting was called to order at 1:06 pm.

1. TERRITORIAL ACKNOWLEDGEMENT

A Territorial Acknowledgement was provided in the preceding meeting.

2. APPROVAL OF THE AGENDA

MOVED by Director Coleman, SECONDED by Director Desjardins,
That the agenda for the May 10, 2023 Session of the Capital Regional District
Board be approved.
CARRIED

3. ADOPTION OF MINUTES

3.1. [23-337](#) Minutes of the April 12, 2023 Capital Regional District Board Meeting

MOVED by Director Murdoch, SECONDED by Director Goodmanson,
That the minutes of the Capital Regional District Board meeting of April 12, 2023
be adopted as circulated.
CARRIED

Director Thompson joined the meeting at 1:08 pm.

4. REPORT OF THE CHAIR

Good afternoon Directors. While I think we have all experienced a cooler than usual spring and it is good to see our water reservoir at 99.8% full, I think it is fair to say the heat is coming. I want to begin by thanking staff and KPMG for their work in delivering the Boards clean and unqualified audits for all of our three entities. When I see audits, it is the one of the few times where no news is largely good news. But seriously, thanks to all involved and I am pleased we can continue to outwardly communicate the Board is judiciously and professionally managing its financial affairs. I would like to report out on the meeting with Minister Kang that Mr. Robbins and I had on April 27, 2023. We discussed several ongoing CRD initiatives such as housing, regional transportation and First Nations relations. It was largely a meeting where we were attempting to develop a relationship with the Minister and senior staff, and it was successful. One of the outcomes was that Mr. Robbins and Minister Kang's staff exchanged contacts and extended a mutual invitation to be in touch and work together. Based on last month's Board motion, I did speak for a great deal of time with the Minister about the Growing Communities Fund and the challenges of ensuring Electoral Area residents are given equal treatment to other residents of municipalities. I would offer the following takeaways on this topic; the Ministry is appreciative of the feedback that we provided; they welcome further written feedback that the Board may wish to provide and they are open to doing things differently in future granting opportunities; there will be no change to the Growing Communities funding requirements and conditions at this time; acknowledgment of the time crunch in getting the funding out. I asked, and they agreed, to consider providing some recommendations or best practices as to how Electoral Areas could be supported in future granting opportunities. As I have said, the meeting was congenial, the Minister showed interest in our region and we committed to keeping our communication channels open moving forward. Two last items; I wish to encourage Directors to attend two upcoming events that the CRD is organizing. The first is our session on Building Local Relationships with First Nations on May 31, 2023, as this is the fifth Wednesday of the month, it is typically when we have a Committee of the Whole but instead we will have this important learning opportunity. I truly hope we can all attend or have your alternate attend. The other invite is for the CRD Staff Summer BBQ being held June 1, 2023 at Hamsterly Beach at the Elk/Beaver regional Park starting at 5 pm. This relaxed environment provides the Board an opportunity to meet and interact with staff in a less formal setting and as a previous year attendant, I have to say it is a lot of fun. Please check your email for this invite and RSVP.

5. PRESENTATIONS/DELEGATIONS

There were no presentations.

5.1. Delegations

5.1.1. [23-360](#) Delegation - Sasha Izard; Resident of Saanich: Re: Agenda Item 6.7.
Capital Regional District External Grants Update
S. Izard spoke to Item 6.7.

6. CONSENT AGENDA

MOVED by Director Alto, **SECONDED** by Director Brice,
That consent agenda items 6.1. through 6.16. be approved.
CARRIED

6.1. [23-284](#) 221 Drake Road, Salt Spring Island, Water Local Area Service
That staff be directed to continue discussions with the owner of 221 Drake Road regarding the establishment of a new local service area to take over the operations and maintenance of a private water system for the proposed Dragonfly Commons development, subject to the owner meeting the CRD's requirements as set out in this report.
CARRIED

6.2. [23-301](#) Solid Waste Management Plan - 2022 Progress Report
This report was received for information.

6.3. [23-298](#) Climate Action - 2022 Progress Report
This report was received for information.

6.4. [23-303](#) Overview of the Capital Regional District's Climate Action Policies
That staff consider increasing the level of ambition in our climate action policies.
CARRIED

6.5. [23-171](#) Capital Regional District 2022 Audit Findings Report and Statement of Financial Information
That the Capital Regional District 2022 Statement of Financial Information be approved
CARRIED

6.6. [23-096](#) Scope of the Financial Statement Audit
This report was received for information.

6.7. [23-169](#) Capital Regional District External Grants Update
This report was received for information.

6.8. [23-190](#) Capital Regional District External Grants 2022 Annual Report
This report was received for information.

6.9. [23-185](#) Operating Reserve Guidelines
This report was received for information.

6.10. [23-331](#) Presentation: A Journey to Reconciliation, Learning from the Central Coast
This report was received for information.

6.11. [23-332](#) Indigenous Employment Project: Findings and Wise Practices
This report was received for information.

6.12. [23-306](#) Inclusive Regional Governance Study Grant
This report was received for information.

6.13. [23-322](#) Motion with Notice: Regional Community Safety and Wellbeing Plan and Council (Director Plant)
That staff be directed to report back to the Hospitals and Housing Committee on the benefits and implications of participating in a regional Community Safety and Wellbeing Plan and Council for the Capital Region.
CARRIED

6.14. [23-285](#) Campus View Redevelopment
1. That a grant in the amount of \$1,425,000 to the Capital Region Housing Corporation be approved to support the development of 119 units of affordable rental housing at 2249 McCoy Road, District of Saanich; and
2. That the Chief Administrative Officer be authorized to do all things necessary to affect the project and take such steps as are required to negotiate, accept the terms, and execute an agreement as required to disburse the funds in accordance with the Regional Housing Trust Fund.
CARRIED

6.15. [23-286](#) Village on the Green Redevelopment
1. That a grant in the amount of \$1,815,000 to the Capital Region Housing Corporation be approved to support the development of 151 units of affordable rental housing at 1132 Johnson Street, City of Victoria; and
2. That the Chief Administrative Officer be authorized to do all things necessary to affect the project and take such steps as are required to negotiate, accept the terms, and execute an agreement as required to disburse the funds in accordance with the Regional Housing Trust Fund.
CARRIED

6.16. [23-327](#) Capital Regional District Regional Parks and Trails - 2022 Progress Report
This report was received for information.

7. ADMINISTRATION REPORTS

7.1. [23-352](#) Capital Regional District 2022 Annual Report

T. Robbins presented Item 7.1. for information.

7.2. [23-324](#) Capital Region Housing Corporation Annual General Meeting

K. Lorette spoke to Item 7.2.

**MOVED by Director de Vries, SECONDED by Director Thompson,
That the unanimous shareholder's resolution attached as Appendix A to the
Capital Region Housing Corporation Annual General Meeting report be
approved, and the Chair and Corporate Officer execute it on behalf of the Capital
Regional District.**

CARRIED

7.3. [23-358](#) Biosolids Update - May 2023

L. Hutcheson presented Item 7.3. for information.

Discussion ensued regarding:

- reclamation of industrial sites and mines
- time frame and terms of contract
- use of biosolids at cement manufacturing plants as an alternative fuel source
- potential leaching at industrial sites and mines
- contractor operations
- contingency planning
- land application at Hartland

7.4. [23-344](#) UBCM Community Emergency Preparedness Fund: Emergency Operations Centres and Training Grant 2023

K. Lorette spoke to Item 7.4.

Director Windsor left the meeting at 1:40 pm.

**MOVED by Director Desjardins, SECONDED by Director Kobayashi,
That the Capital Regional District Board support the application to the UBCM
CEPF Emergency Operations Centres and Training Grant for 2023 and direct staff
to provide overall grant management.**

CARRIED

Director Windsor returned to the meeting at 1:42 pm.

8. REPORTS OF COMMITTEES

Electoral Areas Committee

8.1. [23-269](#) Feedback from Local Service Area Committees - Electoral Areas Water Conservation Bylaw No. 1, 2023 (Bylaw No. 4492)

MOVED by Director Brent, SECONDED by Director Holman,
1. That Bylaw No. 4492, "Capital Regional District Electoral Areas Water Conservation Bylaw No. 1, 2023", be introduced and read a first, second, and third time; and
CARRIED

MOVED by Director Brent, SECONDED by Director Holman,
2. That Bylaw No. 4492 be adopted.
CARRIED

MOVED by Director Brent, SECONDED by Director Holman,
3. That Bylaw No. 4554, "Capital Regional District Ticket Information Authorization Bylaw, 1990, Amendment Bylaw No. 77, 2023", be introduced and read a first, second and third time; and,
CARRIED

MOVED by Director Brent, SECONDED by Director Holman,
4. That Bylaw No. 4554 be adopted.
CARRIED

Environmental Services Committee

8.2. 23-296 Proposed Hartland Bylaw Amendments - Material Stream Diversion

L. Hutcheson spoke to Item 8.2.

Discussion ensued regarding:

- City of Victoria demolition, waste and deconstruction bylaw
- bylaw implementation timeline
- consolidated communications regarding material diversion services in the Juan de Fuca Electoral Area
- impacts of fine increase

MOVED by Director Desjardins, SECONDED by Director Tobias,

1. That the Hartland Landfill Tipping Fee and Regulation Bylaw No. 3881 be amended and come into effect January 1, 2024 to:

- a) Ban wood waste (clean, treated and salvageable), carpet and underlay and asphalt shingles from Hartland's active face, and classify these materials as mandatory recyclable;**
- b) Modernize the tipping fee schedule to align with the proposed tipping fee schedule (Appendix B), including increasing the general refuse tipping fee to \$150/tonne, and introduce a new 'double charge' category for loads of unsorted renovation and demolition materials that contain mandatory recyclables (including wood waste) to motivate source-separation of these materials;**
- c) Introduce hauler incentive rates to promote multi-stream collection, incent voluntary self-reported waste collection data sharing, and minimize the financial impact of increases to the general refuse tipping fees;**

2. That the Ticket Information Authorization Bylaw No. 1857 be amended and come into effect January 1, 2024 to:

- a) increase fine rates for various offences;**
- b) introduce a graduated ticket structure with higher fines for more egregious infractions and/or repeated infractions from a designated source or waste hauler;**
- c) allow for denial of service for chronic repeat offenders;**

3. That service levels be adjusted to enhance enforcement capacity resources to implement the new waste diversion policies, to be reflected in the 2024 preliminary budget; and

4. That staff return with the amended bylaws for Board approval in the fall.

5. Report back on the implications of potentially increasing the proposed fines and fees to a range between the existing staff proposal and levels up to double those rates.

6. That staff report back regularly on the above.

CARRIED

8.3. [23-295](#)

Healthy Waters Project for Tod Creek on the Saanich Peninsula

MOVED by Director Desjardins, SECONDED by Director Tobias,
That staff be directed to identify a source of funding and support the Healthy
Waters project proposal for Tod Creek on the Saanich Peninsula.

Discussion ensued regarding:

- public engagement
- ground water monitoring and testing requirements
- budget impact of proposal
- unintentionally duplicating efforts of other organizations
- funding source for program

MOVED by Director Holman, SECONDED by Director Windsor,
That the main motion be amended by replacing the words "identity a source of
funding and support" with the words "help identify sources of funding and
support for".

Discussion ensued regarding sources of funding.

MOVED by Director Murdoch, SECONDED by Director McNeil-Smith,
That the amendment be amended by replacing the word "support" with
"supports".

CARRIED

The question was called on the amendment:

That the main motion be amended by replacing the words "identity a source of
funding and support" with the words "help identify sources of funding and
supports for".

CARRIED

Discussion ensued regarding:

- supplemental testing and sampling of water sources
- testing of additional contaminants

The question was called on the main motion as amended:

That staff be directed to help identify sources of funding and supports for the
Healthy Waters project proposal for Tod Creek on the Saanich Peninsula.

CARRIED

Opposed: Jones

Motion Arising:

MOVED by Director Windsor, SECONDED by Director McNeil-Smith,
That the Board ask the Environmental Services Committee to give consideration
to what baseline data exists for contamination in Tod Inlet when they report back
to the Environmental Services Committee next meeting.

MOVED by Director Murdoch, SECONDED by Director McNeil-Smith,
That the motion arising be amended as follows:

- replace the words "the Environmental Services Committee to prepare a report to give consideration to" with the words "staff to prepare a report on", and,
- replace the word "in" with the word "including"

CARRIED**Opposed: Jones**

The question was called on the Motion Arising as amended:

That the Board ask staff to prepare a report on what baseline data exists for contamination, including Tod Inlet, when they report back to the Environmental Services Committee next meeting.

CARRIED**Opposed: Jones**

MOVED by Director Windsor, SECONDED by Director Thompson,

That the agenda be amended to consider Item 10. Notice of Motion as the next item.

CARRIED**10. NOTICE(S) OF MOTION****10.1. 23-368**

Notice of Motion: Island View Beach Mosquito Management (Director Windsor)

Director Windsor provided the following Notice of Motion for consideration at the next meeting of the Regional Parks Committee:

"WHEREAS, the Island View Beach region is within the Tsawout First Nation, Capital Regional District, and District of Central Saanich jurisdictions; and WHEREAS, the Island View Beach region has drainage and pest mosquito issues across the three jurisdictions;

THEREFORE BE IT RESOLVED that staff be directed to report back on creating an engineering working group with Tsawout First Nation, CRD and Central Saanich to conduct a holistic assessment of the drainage of the Island View Beach area this year so that improvements to the drainage system can be made to address the pest mosquito issues; and,

That this motion to referred to the next Regional Parks Committee for discussion and voting."

8. REPORTS OF COMMITTEES (Continued)**Finance Committee****8.4. 23-168**

2024 Service and Financial Planning Guidelines

Director Goodmanson left the meeting at 3:08 pm.

N. Chan spoke to Item 8.4.

Discussion ensued regarding:

- cost per capita
- impacts of labour shortage on service delivery

MOVED by Director Brice, SECONDED by Director Murdoch,

That the service and financial planning guidelines as presented be approved and that staff be directed to prepare the draft financial plan review based on the timeline presented.

CARRIED

8.5. [23-248](#) Bylaw No. 4547: Saanich Peninsula Recreation Services (Panorama Heat Recovery System) Loan Authorization Bylaw No. 1, 2023

MOVED by Director Brice, **SECONDED** by Director Windsor,
1. That Bylaw No. 4547, “Saanich Peninsula Recreation Services (Panorama Heat Recovery System) Loan Authorization Bylaw No. 1, 2023”, be introduced and read a first, second and third time.

CARRIED

MOVED by Director Brice, **SECONDED** by Director Windsor,
2. That approval on behalf of the participating areas for Bylaw No. 4547 be obtained through the municipal consent process, according to sections 346 of the Local Government Act, and if successful, that Bylaw No. 4547 be referred to the Inspector of Municipalities for approval.

CARRIED

8.6. [23-249](#) Bylaw No. 4546: Saanich Peninsula Recreation Services (Centennial Park Multi-Sport Box) Loan Authorization Bylaw No. 1, 2023

Director Goodmanson returned to the meeting at 3:21 pm.

MOVED by Director Brice, **SECONDED** by Director Windsor,
1. That Bylaw No. 4546, “Saanich Peninsula Recreation Services (Centennial Park Multi-Sport Box) Loan Authorization Bylaw No. 1, 2023”, be introduced and read a first, second and third time.

CARRIED

MOVED by Director Brice, **SECONDED** by Director Windsor,
2. That approval on behalf of the participating areas for Bylaw No. 4546 be obtained through the municipal consent process, according to section 346 of the Local Government Act, and if successful, that Bylaw No. 4546 be referred to the Inspector of Municipalities for approval.

CARRIED

Director Windsor left the meeting at 3:08 pm.

Hospitals and Housing Committee

8.7. [23-338](#) Future Housing Partnerships Alternative Approval Process and Bylaw Amendments

Discussion ensued regarding:

- alternate approval process
- council consent process

Director Little left the meeting at 3:11 pm.

MOVED by Director Murdoch, SECONDED by Director de Vries,

1. That Bylaw No. 4551, "Land Assembly, Housing and Land Banking Service Establishment Bylaw No. 1, 2010, Amendment Bylaw No. 2, 2023", be introduced, read a first, second, and third time.

CARRIED

MOVED by Director Murdoch, SECONDED by Director de Vries,

2. That Bylaw No. 4552, "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023", be introduced, read a first, second, and third time.

CARRIED

Director Little returned to the meeting at 3:12 pm.

MOVED by Director Murdoch, SECONDED by Director de Vries,

3. That participating area approval for Bylaws No. 4551 and No. 4552 in the municipalities be obtained via council consent on behalf of electors, and by alternative approval process in the electoral areas, and if successful, that staff provide the bylaws to the Inspector of Municipalities for approval.

CARRIED

Director Tobias left the meeting at 3:13 pm.

Juan de Fuca Land Use Committee

8.8. [23-323](#) Public Hearing Report on Bylaw No. 4505, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 157, 2022"

Director de Vries left the meeting at 3:15 pm.

MOVED by Director Wickheim, SECONDED by Director Kobayashi,
1. That the minutes that form the Report of the Public Hearing for Bylaw No. 4505, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 157, 2022", which are certified as a fair and accurate summary of the representations that were made at the public hearing held on March 27, 2023, for Bylaw No. 4505, be received.

CARRIED

MOVED by Director Wickheim, SECONDED by Director Kobayashi,
2. That Bylaw No. 4505 be read a third time.

CARRIED

MOVED by Director Wickheim, SECONDED by Director Kobayashi,
3. That adoption of Bylaw No. 4505 be withheld pending receipt by the CRD of a Preliminary Layout Review from the Ministry of Transportation and Infrastructure for subdivision application SU000753.

CARRIED

Director de Vries returned to the meeting at 3:17 pm.

Regional Water Supply Commission

8.9. [23-300](#) Bylaw No. 4541 Water Supply Local Service Area Establishment Bylaw Amendment

MOVED by Director Coleman, SECONDED by Director Caradonna,
1. That Bylaw No. 4541, "Water Supply Local Service Area Establishment Bylaw No. 1, 1997, Amendment Bylaw No. 5, 2023", be introduced and read a first, second, and a third time.

CARRIED

MOVED by Director Coleman, SECONDED by Director Caradonna,
2. That Bylaw No. 4541 be referred to the service participants for approval by way of council and electoral area director consent on behalf, and that if successful, Bylaw No. 4541 be referred to the Inspector of Municipalities for approval.

CARRIED

9. BYLAWS

There were no bylaws for consideration.

11. NEW BUSINESS

There was no new business.

12. MOTION TO CLOSE THE MEETING

12.1. 23-351 Motion to Close the Meeting

**MOVED by Director Murdoch, SECONDED by Director Murdoch,
That the meeting be closed for Appointments in accordance with Section 90(1)(a)
of the Community Charter.
CARRIED**

The Capital Regional District Board moved to the closed session at 3:19 pm.

13. RISE AND REPORT

The Capital Regional District Board rose from the closed session at 3:22 pm and reported on the following:

In accordance with the Elk/Beaver Lake Recreational Use Advisory Committee Terms of Reference that the following be appointed to the Elk/Beaver Lake Recreational Use Advisory Committee for a term to expire December 31, 2025: William Bennink, Sgt. Brad Brajcich, Dave Cooke, Pat George, Adam Parfitt, Scott Silvestri, Kyle Weins

In accordance with Bylaw No. 3523 that the following be appointed to the Southern Gulf Islands Public Library Commission for a term to expire December 31, 2023: Eleanor Cocker; and for a term to expire December 31, 2024: Mary Greenwood

14. ADJOURNMENT

**MOVED by Director Thompson, SECONDED by Director Desjardins,
That the May 10, 2023 Capital Regional District Board meeting be adjourned at
3:23 pm.
CARRIED**

CHAIR**CERTIFIED CORRECT:**

CORPORATE OFFICER

**REPORT TO ELECTORAL AREAS COMMITTEE
MEETING OF WEDNESDAY, JUNE 14, 2023**

SUBJECT **Appointment of Officers**

ISSUE SUMMARY

This report is to update bylaw enforcement appointments to reflect staff changes in the Capital Regional District (CRD) Bylaw and Animal Care Services Division.

BACKGROUND

Pursuant to Section 233 of the *Local Government Act* and Section 28(3) of the *Offence Act* and in accordance with CRD Bylaw No. 2681, the CRD Board must from time to time make resolutions for persons in new positions.

ALTERNATIVES

Alternative 1

The Electoral Areas Committee recommends to the Capital Regional District Board:

That for the purpose of Section 233 of the *Local Government Act* and Section 28(3) of the *Offence Act* and in accordance with Capital Regional District Bylaw No. 2681, Lance Hurrell, Tony Dobos, Wolfgang Brunnwieser, Maen Rashead, Aya Endrigo, Taelyn Munro, Nathaniel Blondeau, Sam Poffinbarger, Theron Watson, Sean Eversfield, Murray Fyfe, Bradley McQueen, Dana Dawson, and John-Brian Alag be appointed as a Bylaw Enforcement Officers.

Alternative 2

That the Appointment of Officers report be referred back to staff for further information based on Committee direction.

IMPLICATIONS

Service Delivery Implications

These appointments ensure consistent bylaw enforcement in the CRD Bylaw and Animal Care Services Division.

CONCLUSION

The bylaw enforcement appointments reflect staff changes in the CRD Bylaw and Animal Care Services Division.

RECOMMENDATION

The Electoral Areas Committee recommends to the Capital Regional District Board:

That for the purpose of Section 233 of the *Local Government Act* and Section 28(3) of the *Offence Act* and in accordance with Capital Regional District Bylaw No. 2681, Lance Hurrell, Tony Dobos, Wolfgang Brunnwieser, Maen Rashead, Aya Endrigo, Taelyn Munro, Nathaniel Blondeau, Sam Poffinbarger, Theron Watson, Sean Eversfield, Murray Fyfe, Bradley McQueen, Dana Dawson, and John-Brian Alag be appointed as a Bylaw Enforcement Officers.

Submitted by:	Shawn Carby, CD, BHSc, MAL, Senior Manager Protective Services
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**REPORT TO ELECTORAL AREAS COMMITTEE
MEETING OF WEDNESDAY, JUNE 14, 2023**

SUBJECT **2023 Salt Spring Island Local Community Commission Election Results**

ISSUE SUMMARY

To report the results of the 2023 Salt Spring Island Local Community Commission Election held on May 27, 2023 to elect four commissioners.

BACKGROUND

On October 15, 2022, qualified electors in the Salt Spring Island Electoral Area voted in favour of the CRD Board adopting Bylaw 4507, "*Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022*", authorizing the establishment of the SSI Local Community Commission.

In accordance with the *Local Government Act*, on Saturday, May 27, 2023, the CRD held general voting to elect four commissioners to the newly established Salt Spring Island Local Community Commission. Pursuant to section 158 of the *Local Government Act*, the Chief Election Officer (CEO) must submit a report of the election results to the local government within 30 days after the declaration of the official results under Section 146, including a compilation of the information on the ballot accounts for the election.

Advance Voting opportunities were available in two locations on Wednesday, May 17 and 24, 2023. General Voting Day was Saturday, May 27, 2023 with 3 voting locations. In addition to the voting opportunities, the CRD also offered mail ballot voting to any elector that applied requesting a mail ballot package. The CRD received a total of 55 requests for mail ballots and had a response rate of 87%.

Attached as Appendix A is the Declaration of Official Results dated May 30, 2023, for the Salt Spring Island Local Community Commission. Appendix B is the Official Results by voting location. Appendix C is a table showing voter turnout at advance, general and mail ballot (overall voter turnout was 32%). Appendix D is a ballot account summary for all voting locations.

CONCLUSION

On October 15, 2022, qualified electors in the Salt Spring Island (SSI) Electoral Area voted in favour of the Capital Regional District (CRD) Board adopting Bylaw 4507, "*Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022*", authorizing the establishment of the SSI Local Community Commission. On Saturday, May 27, 2023, the CRD held general voting to elect four commissioners to the SSI Local Community Commission in accordance with the *Local Government Act*. Pursuant to section 158 of the *Local Government Act*, the Chief Election Officer (CEO) must submit a report of the election results to the local government within 30 days after the declaration of the official results. Attached to the report is the declaration of official results, results by voting location, and voter turnout at advance, general and mail ballot voting opportunities.

RECOMMENDATION

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

Submitted by:	Marlene Lagoa, Manager, Legislative Services & Deputy Corporate Officer
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Declaration of Official Results

Appendix B: Official Results (by location)

Appendix C: Voter Turnout Percentage by Opportunity – Advance, General, Mail

Appendix D: Ballot Account Summary

CAPITAL REGIONAL DISTRICT

DECLARATION OF OFFICIAL ELECTION RESULTS

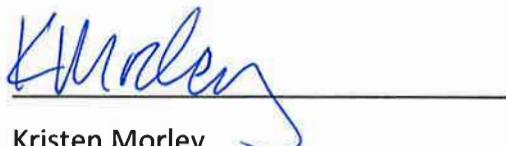
SALT SPRING ISLAND LOCAL COMMUNITY COMMISSION – 2023

I, Kristen Morley, Chief Election Officer for the Capital Regional District, do hereby declare, pursuant to section 146 of the *Local Government Act*, the following candidates received the highest number of valid votes and are hereby declared elected:

Office of **Salt Spring Island** Local Community Commissioner: (four persons to be elected)

Surname	Given Name
BAKER	Gayle
WEBSTER	Brian
ROOK	Earl
CORNO	Benjamin

Given under my hand at Victoria, British Columbia, this 30th day of May, 2023.



Kristen Morley

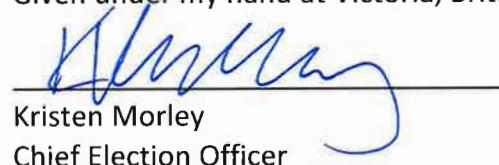
Chief Election Officer

OFFICIAL RESULTS

Salt Spring Island Local Community Commission - 4 Commissioners to be Elected

Candidates to be elected in **BOLD**

RACE	CANDIDATES	SSI Public Library (1)	SSI Gospel Church (2)	SSI Fulford Harbour (3)	CRD HQ - Mail Ballots (4)	TOTAL
SSI - LCC Commissioner	BAKER Gayle	867	793	284	33	1977
SSI - LCC Commissioner	BROWN Jesse	153	170	45	7	375
SSI - LCC Commissioner	COATES Kylie	114	131	35	5	285
SSI - LCC Commissioner	CORNO Benjamin	463	311	136	9	919
SSI - LCC Commissioner	COURTNEY David	104	142	32	6	284
SSI - LCC Commissioner	CUDMORE Lloyd	262	417	67	7	753
SSI - LCC Commissioner	GUERMOUDI Nejmah	350	235	89	6	680
SSI - LCC Commissioner	HARRIS Jamie	298	448	85	11	842
SSI - LCC Commissioner	KERRIGAN Jennifer	286	424	72	8	790
SSI - LCC Commissioner	LANNAN Jennifer	392	338	117	16	863
SSI - LCC Commissioner	MARCH Eric G.	78	49	16	3	146
SSI - LCC Commissioner	MARCOTTE Donald	226	356	57	10	649
SSI - LCC Commissioner	MCCLEAN Jenny	159	102	35	0	296
SSI - LCC Commissioner	ROOK Earl	662	639	211	26	1538
SSI - LCC Commissioner	WEBSTER Brian	858	792	286	38	1974
TOTAL VOTERS		1395	1406	413	48	3262

Given under my hand at Victoria, British Columbia, this 30th day of May, 2023.


Kristen Morley
Chief Election Officer

Voter Turnout by Opportunity - Advance, General, and Mail Voting

Location/Tabulator	Advance May 17	Advance May 24	General May 27	TOTAL BALLOTS CAST	Voter Turnout % by Location
CRD Headquarters Mail Ballots			48	48	0.47%
SSI - Salt Spring Island Community Gospel Chapel	167	405	834	1,406	14%
SSI - Salt Spring Island Fulford Hall Senior's Centre			413	413	4%
SSI - Salt Spring Island Public Library	226	535	634	1,395	14%
Total	393	940	1,929	3,262	32%
Voter Turnout % (SSI EA Electors = 10,033)	4%	9%	19%	32%	

Additional Notes:

1. Advance Voting Turnout for both days was 13%
2. Mail Ballot Voting Turnout was 0.5%

NRPE - 128 Electors

5 new

RPE - 9,905 Electors

181 new

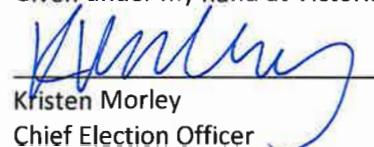
UPDATED VOTER COUNT

10,219

CAPITAL REGIONAL DISTRICT 2023 SSI LCC ELECTION BALLOT ACCOUNT SUMMARY		SSI Community Gospel Chapel	SSI Fulford Hall - Seniors Centre Oct 15 only	SSI Public Library	CRD Mail Ballots	TOTAL
A	Number of Ballots Issued by CEO to Polls	3,000	995	3,000	212	7,207
B	Number of Ballots Issued to Voters	1415	415	1403	54	3,287
C	Number of Valid Ballots Cast (processed through ImageCast vote tabulator)	1406	413	1395	48	3,262
D	Number of Ballots Spoiled and Replaced	9	2	8	0	19
E	Number of Unused Ballots Returned to CEO	1,585	580	1,597	158	3,920
F	Number of Ballots Not Accounted For/Mail Ballots not returned by close on May 25 at 4 PM)	0	5	0	6	11
G-1	TOTAL (equals B + E + F)	3,000	1,000	3,000		7,000
G-1	TOTAL - Mail Ballots Only (equals C + E + F)				212	212
H	GRAND TOTAL	3,000	1,000	3,000	212	7,212

Notes: Logic & Accuracy Testing Ballots 248
 Extra Ballots - not distributed to Polls 600
 Total Ballots Printed for Election 8,060

Given under my hand at Victoria, British Columbia, this 30th day of May, 2023.


 Kristen Morley
 Chief Election Officer

**REPORT TO ELECTORAL AREAS COMMITTEE
MEETING OF WEDNESDAY, JUNE 14, 2023**

SUBJECT **Salt Spring Island Local Community Commission Remuneration**

ISSUE SUMMARY

To amend the Capital Regional District's Board Remuneration and Travel Expense Reimbursement Policy to include payment provisions for the Salt Spring Island (SSI) Local Community Commission (LCC).

BACKGROUND

Effective January 1, 2016, the CRD Board approved a remuneration policy for CRD Board Directors and Alternates ("CRD Board Remuneration and Travel Expense Reimbursement" policy). This Policy outlines remuneration rates for CRD Board Directors and their Alternates, and prescribed Commission members.

In December 2022, by Bylaw 4507, the CRD Board established the Salt Spring Island Electoral Area Local Community Commission. By its establishing Bylaw, "*Commissioners [of the LCC] shall receive an annual stipend or payment per meeting, and shall be reimbursed for necessary expenses incurred in the course of carrying out Commission business, as per applicable CRD Board policies.*" (Bylaw 4507 Part 10, Remuneration and Expenses).

On May 27, 2023, four (4) Commissioners were elected to the LCC, with the first meeting to be held on June 20, 2023. A remuneration payment of ten thousand dollars (\$10,000) annually per Commissioner is recommended and has been included in the SSI budget. For 2023, the payment will be pro-rated to reflect a June start date for Commissioners. To formalize payments for the LCC, the CRD's Board Remuneration and Travel Expense Reimbursement policy has been updated as attached at Appendix A.

ALTERNATIVES

Alternative 1

The Electoral Areas Committee recommends to the Capital Regional District Board:
That the CRD Board Remuneration and Travel Expense Reimbursement Policy be amended to provide remuneration in the amount of ten thousand dollars (\$10,000) annually to a Commissioner of the Salt Spring Island Local Community Commission, as attached at Appendix A.

Alternative 2

That staff be requested to provide additional information.

IMPLICATIONS

Alternative 1

LCC Commissioner remuneration is provided for through the Salt Spring Island Electoral Area Services budget and is within current requisition. Consistent with other Commissioners who may receive payments, this remuneration would not be indexed. Payment for the Electoral Area Director sitting on the LCC is already included in the Electoral Area Director responsibilities under the Board remuneration policy and would not be adjusted.

Alternative 2

The SSI LCC commences meetings on June 20, 2023. A delay in amending the policy could delay remuneration payments to the LCC members.

CONCLUSION

The CRD Board has established a policy on CRD Board remuneration, which the Board may update from time to time. The Board Remuneration Policy governs the payment of remuneration to Directors and Commissioners and requires updating to include compensation for LCC Commissioners.

RECOMMENDATION

The Electoral Areas Committee recommends to the Capital Regional District Board:
That the CRD Board Remuneration and Travel Expense Reimbursement Policy be amended to provide remuneration in the amount of ten thousand dollars (\$10,000) annually to a Commissioner of the Salt Spring Island Local Community Commission, as attached at Appendix A.

Submitted by:	Chris Neilson, MBA, CPHR, Senior Manager Human Resources & Corporate Safety
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence	Ted Robbins, B.Sc, C.Tech, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Board Remuneration and Travel Expense Reimbursement Policy, Schedule (amendments noted for reference)



**CAPITAL REGIONAL DISTRICT
BOARD POLICY**

Policy Type	Board		
Section	Policies, Procedures, Manuals		
Title	Board Remuneration and Travel Expense Reimbursement		
Adoption Date	September 9, 2015	Policy Number	BRD03
Last Amended	February 2, 2021	Amended By	HR
Policy Owner	Human Resources		

1. POLICY:

Board of Directors Remuneration and Travel Expense Policy.

2. PURPOSE:

To outline the Board remuneration and travel expense reimbursement guidelines. The CRD Board approved a new Board remuneration framework on September 9, 2015. A primary driver for establishing a CRD Board remuneration philosophy was to recognize the significant amount of commitment required of Directors and to design an approach that would assist with engagement as well as attendance.

3. SCOPE:

The policy applies to all CRD Board Directors, Commission members, First Nations Members and certain Board appointees to external Boards.

4. DEFINITIONS:

“board remuneration” means any compensation paid to Board Directors, certain Commission members, First Nations Members and Board appointees to external Boards as approved by the CRD Board in exchange for undertaking CRD business activities.

5. RESPONSIBILITIES:

Human Resources, in consultation with Finance and Technology and Corporate Services, is responsible for the control, coordination, and implementation of the policy. Modifications to the overall policy are to be approved by the Capital Regional District (CRD) Board.

6. PROCEDURE:

1. All Board Directors, certain Commission members, Municipal Councillors, First Nations Members and certain Board appointees to external Boards shall receive an annual stipend and/or a payment per meeting and travel expenses as per CRD Board Remuneration and Travel Expense Policy - Schedule 1.

2. ~~Eligibility for payments is defined in CRD Directors Appointments by Committees, Commissions to External Board - Schedule 2.~~

3. The remuneration amounts will be adjusted annually, by Financial Services, based on the Consumer Price Index for the Victoria area for the twelve months ending December 31 of the preceding year – Schedule 3.

4. The remuneration structure will be reviewed periodically as directed by the Board.

7. SCHEDULE:

- A. Schedule 1 – CRD Board Remuneration and Travel Expense Policy
- B. Schedule 2 – Remuneration Eligibility Table
- C. Schedule 3 – CRD Board Remuneration Philosophy

8. AMENDMENT(S)

Adoption Date	Description
September 9, 2015 (Revised April 18, 2016)	<i>Approved by the Board</i>
April 12, 2017 (eff. January 1, 2017)	<i>Amendment 1, approved by the Board</i>
May 9, 2018 (eff. January 1, 2019)	<i>Amendment 2, approved by the Board</i>
February 10, 2020 (Schedule 1 and 2 updates)	<i>Amendment 3, approved by Human Resources (eff Jan.2020 Schedule 1; Dec.2019 Schedule 2)</i>
January 13, 2021 (Schedule 2 update)	<i>Amendment 4, approved by the Board</i>
February 2, 2021 (Schedule 1 update)	<i>Amendment 5, approved by Human Resources (eff. Jan.2021)</i>
January 24, 2022 (Schedule 1 update)	<i>Amendment 6, approved by Human Resources (eff. Jan.2022)</i>
January 20, 2023 (Schedule 1 update)	<i>Amendment 7, approved by Human Resources (eff. Jan.2023)</i>
<u>June 2023</u>	<u><i>Amendment 8, approved by the Board (eff. June 2023)</i></u>

9. REVIEW(S)

Review Date	Description:

Annually	<i>Review annually for schedule(s) update</i>
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10. RELATED POLICY, PROCEDURE OR GUIDELINE:

Bylaw No. 3828, "Board Procedures Bylaw, 2012" - No. 3828

CRD Board Remuneration and Travel Expense Policy – Schedule 1
Effective January 1, 2023

		REMUNERATION	EXPENSE ALLOWANCE	TOTAL
ANNUAL STIPENDS				
Paid periodically throughout the year (currently, biweekly)				
1	CRD / CRHD Board Directors <i>Includes all CRD/CRHD Board meetings, Committee of the Whole Meetings, and two Standing Committee* commitments</i> <i>*where defined as a standing committee in bylaws or terms of reference AND members are appointed by the Board Chair</i>	15,034	7,517	22,551
2	Electoral Area Directors (additional)	28,980	14,490	43,470
3	CRD Board Chair (additional)	22,110	11,055	33,165
4	CRD Board Vice-Chair (additional)	4,421	2,211	6,632
5	CRHD Board Chair (additional) <i>(Not paid if the CRHD Board Chair is also the CRD Board Vice-Chair)</i>	4,421	2,211	6,632
6	Board Standing Committee Chair, CRD Arts Commission Chair & Solid Waste Advisory Commission Chair (additional) (when appointed by CRD Board Chair)	2,211	1,106	3,317
7	Additional Board Standing Committee(s) (additional) <i>(Payable if Standing Committee Membership exceeds the two remunerated in Section 1)</i>	4,421	2,211	6,632
8	Salt Spring Island Local Community Commissioner <i>(Payable to all elected LCC commissioners, except the Electoral Area Director)</i>	<u>6,667</u>	<u>3,333</u>	10,000
PER MEETING PAYMENTS				
Paid for scheduled attendance at a meeting, except where such meeting has been cancelled in advance (see Footnote 2 – Eligibility Verification)				
9	Alternate CRD/CRHD Board Director and Acting Standing Committee Chair	73	37	110
10	CRD Board Directors - Local & Sub-Regional Commission/Committee Meetings Does not apply when: i. Commission /Committee within the responsibilities of the Electoral Area Director ii. Remuneration is already paid by the Commission iii. The Committee/Commission is not eligible for payment by Act, Regulation, Bylaw or other	73	37	110
11	First Nation Member appointees to eligible CRD Committee	73	37	110

12	CRD Board Directors – appointed by CRD to External Board Does not apply when:	73	37	110
	i. External Board falls within the responsibilities of the Electoral Area Director			
	ii. Remuneration is already paid by the External Board			
	iii. The External Board is not eligible for payment by Act, Regulation, Bylaw or other			
13	CRD Municipal Directors who vote on Part 26 Decisions of Juan de Fuca Electoral Area Applies only when:	73	37	110
	a. Attendance at a JDFEA land use committee meeting of which the director is a member			
	b. Attendance at any land use public hearing of the JDFEA regarding an area where the director is eligible to vote on decisions at the CRD Board			
	Does not apply to the Electoral Area Director			
14	Alternate CRD Electoral Area Director attending formal Local and Sub-Regional Commission meetings in place of the Electoral Area Director	73	37	110
15	All Commissioners - Regional Water Supply Commission	73	37	110
16	Forum of Councils – First Nations, Municipal Councilors and Directors	73	37	110
TRAVEL EXPENSES (see Footnote 3 regarding claim process)				
17	All Director, <u>LCC Commissioner</u>, or First Nation Member Travel - to and from meetings where the Director, <u>LCC Commissioner</u> or First Nation Member is a member	\$0.62	Per km. for regularly constituted meetings of Board, Commissions, Standing, and Select Committees	
DIRECTOR TRAVEL Within Capital Region/Vancouver Island and Lower Mainland				
18	Travel by Personal Automobile	\$0.62	Per kilometre	
19	Travel by Bus, Train, Ferry, Air (economy class)	Actual expense	Payable upon receipt	
DIRECTOR TRAVEL Outside Capital Region/Vancouver Island and Lower Mainland				
20	Travel by Personal Automobile	\$0.62	Per kilometre	
21	Travel by Bus, Train, Ferry, Air (economy class), Car Rental (mid-size)	Actual expense	Payable upon receipt	
22	Electoral Area Director Travel - within Electoral Area	\$0.62	For travel greater than 10km from EA Director's residence within the EA or their office, provided the destination is a place to conduct EA business	

23	CRD Board Chair, CRHD Board Chair, Standing Committee Chair - including Acting Chairs	\$0.62	For any business travel of the Board or Standing Committee, provided the expenses are incurred outside the municipality or EA which the Chair represents
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MEALS

24	For Travel Requiring Greater-Than 24 Hours from Place of Residence	\$63	Per diem allowance for meals, gratuities, parking, local calls
For Travel Requiring Less-than 24 Hours from Place of Residence			
25	- Breakfast	\$10.50	See Footnote 1
26	- Lunch	\$21.00	See Footnote 1
27	- Dinner	31.50	See Footnote 1

OTHER

28	Seminars, Courses, Conferences, Meetings	Actual Cost	Registration Fees paid for single participation (Receipt required)
29	Accommodation	Actual Cost	Based on single occupancy
30	Taxi Expenses	Actual Cost	Receipts are required
31	Long Distance Telephone Calls	Actual Cost	Receipts are required

FOOTNOTES

(1) Meal payments will be paid as follows:

If Departure Prior to:	7:00am	Breakfast, Lunch, Dinner
	12:00noon	Lunch, Dinner
	6:00pm	Dinner
If Return After:	12:30pm	Breakfast, Lunch
	6:00pm	Breakfast, Lunch, Dinner

(2) Eligibility Verification:

For attendance at meetings, seminars, courses, conferences and/or meetings outside of CRD facilities, claimants will confirm their attendance on the CRD Travel Expense Report Claim form and eligibility of expense claims will be approved by Legislative Services.

(3) Travel Expense Claims Process:

Claims for travel expenses are submitted to *Legislative Services* for approval on the CRD Travel Expense Report Claim form within thirty (30) *calendar days* of the period in which the expenses were incurred.

CRD Board Remuneration and Travel Expense Policy – Schedule 2

Remuneration Eligibility Table

Regional Board and Standing Committees	See Footnote
Capital Regional District Board	1
Capital Regional Hospital District Board	1
Capital Region Housing Corporation Board	1, 6
Climate Action Inter-Municipal Task Force	7
Committee of the Whole	1
Core Area Liquid Waste Management Committee	1, 2, 8
Electoral Areas Committee	1, 2, 8
Environmental Services Committee	1, 2, 8
First Nations Relations Committee	1, 2, 8
Finance Committee	1, 2, 8
Governance Committee	1, 2, 8
Hospitals and Housing Committee	1, 2, 8
Planning and Protective Services Committee	1, 2, 8
Regional Parks Committee	1, 2, 8
Solid Waste Advisory Committee	7
Transportation Committee	1, 2, 8

Footnotes:

1. *Within Director's core responsibilities*
2. *Eligible for additional Standing Committee payment, if Director already sits on two (2) Standing Committees*
3. *Eligible for per meeting payment*
4. *Not eligible for payment: Commission/Board falls within the responsibilities of an Electoral Area Director*
5. *Not eligible for payment: Commission/Board already makes a payment for attendance*
6. *Not eligible for payment: Commission/Board ineligible by Act, Regulation, Bylaw or other*
7. *Not eligible for payment: Sub-Committee to a Standing Committee or other*
8. *Payments to be made to respective First Nations Governments on behalf of First Nation Member appointees following attendance at the meeting. Payments for attendance and expenses shall not exceed \$8,250 per year per First Nation. Note that First Nation participation is only permitted where the specific Committee Terms of Reference allow.*

Director Appointments to Local & Subregional Commissions	See Footnote
Arts Commission	3
East Sooke Fire Protection and Emergency Response Service Commission	4
East Sooke Advisory Planning Commission	4
Fernwood Dock Management Commission	4
Galiano Island Parks and Recreation Commission	4
Juan de Fuca Board of Variance	4
Juan de Fuca Electoral Area Parks and Recreation Advisory Commission	4
Juan de Fuca Land Use Committee	4
Juan de Fuca Water Distribution Commission	3, 4
Lyall Harbour/Boot Cove Water Local Services Committee	4
Magic Lake Estates Water and Sewer Committee	4
Mayne Island Parks and Recreation Commission	4
North Galiano Fire Protection and Emergency Response Service Commission	4
Otter Point Advisory Planning Commission	4
Otter Point Fire Protection and Emergency Response Service Commission	4
Pender Islands Parks and Recreation Commission	4
Peninsula Recreation Commission	3
Port Renfrew Fire Protection and Emergency Response Service Commission	4
Port Renfrew Utility Services Committee	4
Regional Housing Trust Fund Commission	3
Regional Water Supply Commission	5
Saanich Peninsula Wastewater Commission	3
Saanich Peninsula Water Commission	3
Salt Spring Island Local Community Commission	1.4
Salt Spring Island Community Economic Development Commission	4
Salt Spring Island Electoral Area Emergency Program Advisory Commission	4

Footnotes:

1. *Within Director's core responsibilities*
2. *Eligible for additional Standing Committee payment, if Director already sits on two (2) Standing Committees*
3. *Eligible for per meeting payment*
4. *Not eligible for payment: Commission/Board falls within the responsibilities of an Electoral Area Director*
5. *Not eligible for payment: Commission/Board already makes a payment for attendance*
6. *Not eligible for payment: Commission/Board ineligible by Act, Regulation, Bylaw or other*
7. *Not eligible for payment: Sub-Committee to a Standing Committee or other*

Director Appointments to Local & Subregional Commissions (con't)

See
Footnote

Salt Spring Island Parks and Recreation Advisory Commission	4
Salt Spring Island Transportation Commission	4
Saturna Island Parks and Recreation Commission	4
Shirley Fire Protection and Emergency Response Service Commission	4
Shirley/Jordan River Advisory Planning Commission	4
Skana Water Service Committee	4
Sooke and Electoral Area Parks and Recreation Commission	3, 4
Southern Gulf Islands Community Economic Sustainability Commission	4
Southern Gulf Islands Electoral Area Emergency Advisory Commission	4
Southern Gulf Islands Harbours Commission	4
Southern Gulf Islands Public Library Commission	4
SSI - Beddis Water Service Commission	4
SSI - Cedar Lane Water Service Commission	4
SSI - Cedars of Tuam Water Service Commission	4
SSI - Fernwood Water Local Service Commission	4
SSI - Fulford Water Service Commission	4
SSI - Ganges Sewer Local Services Commission	4
SSI - Highland Water and Sewer Services Commission	4
SSI - Salt Spring Island Liquid Waste Disposal Local Service Commission	4
Sticks Allison Water Local Service Committee	4
Surfside Park Estates Water Service Committee	4
Traffic Safety Commission	3
Victoria Family Court and Youth Justice Committee	3
Water Advisory Committee	6
Wilderness Mountain Water Service Commission	4
Willis Point Fire Protection and Recreation Facilities Commission	4

Footnotes:

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7. Not eligible for payment: Sub-Committee to a Standing Committee or other

Regional Board Appointments to External Boards	See Footnote
Capital Regional Emergency Services Telecommunications	5
Greater Victoria Coalition to End Homelessness Society	6
Greater Victoria Harbour Authority Board	5
Greater Victoria Labour Relations Board	3
Gulf Islands National Park Reserve Advisory Board	4
Island Corridor Foundation Board	5
Municipal Finance Authority	5
Pender Islands' Fire Protection Society	4
Regional Representative to the Treaty Table	3
Royal and McPherson Theatres Society Advisory Committee	7
Royal and McPherson Theatres Society Board	3
Salt Spring Island Ferry Advisory Committee	4
Sooke Historical Society	4
Southern Gulf Islands Ferry Advisory Committees	4
Vancouver Island Regional Library	4

Footnotes:

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2. *Eligible for additional Standing Committee payment, if Director already sits on two (2) Standing Committees*
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7. *Not eligible for payment: Sub-Committee to a Standing Committee or other*

CRD Board Remuneration and Travel Expense Policy – Schedule 3

CRD Board Remuneration Philosophy

(Effective January 1, 2016)

- a base Director annual stipend as the average paid to CRD member councillors, which recognizes attendance at all Board meetings and Committee of the Whole meetings plus two Standing Committee commitments; and
- an additional annual stipend to Electoral Area Directors which recognizes all additional Electoral Area work including Electoral Area Commission commitments; and
- an additional annual stipend to the CRD Board Chair consistent with payments made by other Regional Districts, which recognizes all Board Chair responsibilities including all ex-officio responsibilities on Standing Committees; and
- additional annual stipends to recognize the additional commitments of the: CRD Board Vice-Chair; Capital Region Hospital District Chair; Standing Committee Chairs; CRD Directors appointed as a Commission Chair, when such Commission Chair appointment is made directly by the CRD Board Chair *[amended effective January 1, 2017]*; and CRD Directors who are involved on more than two Standing Committees; and
- per meeting payments to CRD Directors appointed to local and sub-regional Commissions and external boards (except where remuneration is already paid and/or not eligible); and
- per meeting payments to Alternate Directors consistent with payments made by other Regional Districts; and
- that the annual cost of living adjustment based on the Victoria Consumer Price Index continue to be applied, and that a regular review be undertaken every three (3) to five (5) years to ensure remuneration remains comparable.



Capital Regional Hospital District

REPORT TO HOSPITALS AND HOUSING COMMITTEE MEETING OF WEDNESDAY, JUNE 07, 2023

SUBJECT CRD Participation in a Regional Community Safety and Wellbeing Plan and Council

ISSUE SUMMARY

This report outlines the benefits and implications of participating in a Regional Community Safety and Wellbeing Plan and Council (RCSWPC) for the capital region. The Capital Regional District (CRD) Healthy Communities Program under the Health and Capital Planning Strategies Division could be expanded to allow for participation in this project but would require additional resources.

BACKGROUND

On April 12, 2023, a delegation presented at the CRD Board meeting about violence prevention and the social determinants of health (Appendix A). They identified the potential convening role the CRD could play in work related to violence prevention and wellbeing. The following motion was referred to the Hospital and Housing Committee on May 3, 2023, and subsequently the motion was passed:

“That staff be directed to report back to the Hospitals and Housing Committee on the benefits and implications of participating in a Regional Community Safety and Wellbeing Plan and Council for the capital region.”

Because the RCSWPC work is related to the social determinants of health, it would most closely align with the work being done in the Healthy Communities Program within the CRD. The Healthy Communities Program works on the social and structural determinants of health by coordinating the Community Health Network (CHN) (Appendix B) and developing public health bylaws. The CHN’s work relies on knowledge translation and partnership development to identify and fill gaps in the community health landscape across the region. One goal area of the CHN is Healthy and Safe Environments for which a subgroup exists.

ALTERNATIVES

Alternative 1

The Hospitals and Housing Committee recommends to the Capital Regional District Board: That staff be directed to include \$50,000 in funding in the 2024 Provisional budget to support work towards establishing a Regional Community Safety and Wellbeing Plan and Council.

Alternative 2

That the CRD Participation in a Regional Community Safety and Wellbeing Plan and Council report be referred back to staff based on Hospitals and Housing Committee Direction.

IMPLICATIONS

Intergovernmental Implications

Violence prevention councils exist to bring communities together to address the root causes of violence. One prime example is the Region of Waterloo’s Region Crime Prevention Council (WRCPCC). The WRCPCC has received core funding from the Region of Waterloo since 1994 to

generate greater public understanding of the root causes of crime, creating a deeper community commitment to prevention. They are not a direct service provider. Instead, they engage and connect citizens, decision makers and service providers through community engagement, knowledge mobilization and backbone support. The CRD could convene the municipalities and organizations involved in not only violence prevention, but community safety and wellbeing, to determine the viability of establishing a RCSWPC.

Social Implications

Much like there are social determinants of health, there are also social determinants of justice which closely align with the social determinants of health. The social determinants of justice are clear based on the shared characteristics of many of the people who are involved in our justice systems. The social determinants of justice include early abuse, systemic racism and discrimination, unequal access to resources, experiences of homelessness, lack of access to health resources and poor education. Communities that address these social determinants of justice in a holistic manner experience lower levels of violent crime.

A violence prevention presentation by Dr. Irvin Waller at Camosun College, which was open to elected officials in the CRD, on May 5, 2023 (Appendix C) identified the benefits of violence prevention and that taking a social determinants of justice approach can lead to a decrease in violent crime.

Financial Implications

To work towards developing a RCSWPC, staff will require resources to facilitate and convene two to three meetings with those involved in violence prevention in the region, all municipalities as well as a consultant to identify the current work in the region on violence prevention, gaps, and next steps towards establishing a RCSWPC.

The CRD currently has a Healthy Communities Planner position which is grant funded by Island Health. To support establishing a RCSWPC will require an addition \$50,000 to hire a consultant to support convening the regional stakeholders working in violence prevention and map out next steps toward establishing a RCSWPC.

Alignment with Board & Corporate Priorities

Social determinants of health and justice are woven throughout the goals of the CRD's 2023-2026 *Corporate Plan*. In particular, they are related to the following goals:

- 5f: "Support health through public health bylaws and education"
- 5g: "Facilitate knowledge mobilization & partnerships to support community health and healthy public policy"
- 5c: "regional response to homelessness"

Because the proposed approach to violence prevention is based on the social determinants of health and justice, work in this area will move us towards the goals of the CRD's 2023-2026 *Corporate Plan*.

Service Implications

Facilitating and convening stakeholders and municipalities to discuss the development of a RCSWPC will require some additional resources to hire a consultant but does not require a new service to be developed. Once these discussions and a report identifying next steps has been developed the information will be brought back to the Board with a recommendation outlining what resources would be required to implement the RCSWPC.

CONCLUSION

The work of supporting a RCSWPC most closely aligns with the CRD's Healthy Communities Program. In order to support this work, additional resources would need to be allocated in the 2024 Provisional budget.

RECOMMENDATION

The Hospitals and Housing Committee recommends to the Capital Regional District Board:
That staff be directed to include \$50,000 in funding in the 2024 Provisional budget to support work towards establishing a Regional Community Safety and Wellbeing Plan and Council.

Submitted by:	Michael Barnes, MPP, Senior Manager, Health and Capital Planning Strategies
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

Appendix A: Towards a Community Safety and Wellbeing Plan and Council for the Capital Region

Appendix B: Community Health Network Summary

Appendix C: Violence Prevention Accelerator Actions (PowerPoint)

Towards a Community Safety and Wellbeing Plan and Council for the Capital Region

**Trevor Hancock
Christiane Sadeler
Shannon Turner
Steve Woolrich**



12 April 2023

Who we are

- **Trevor Hancock**
 - Internationally recognised leader on Healthy Communities, Emeritus Professor of Public Health and Social Policy, UVic
- **Christiane Sadeler**
 - Long-time Director of the Waterloo Region Crime Prevention Council and Founding Chair, Canadian Municipal Network on Crime Prevention
- **Shannon Turner**
 - Co-Chair, Prevention of Violence Canada and Executive Director, Public Health Association of BC
- **Steve Woolrich**
 - Vice-President, Crime Prevention Through Environmental Design – Canada and co-founder, Placemaking Network of Victoria

Our three key points

- 1. Community safety is about much more than just policing**
- 2. Community safety is an issue for the whole region**
- 3. The CRD could use its convening power to move this agenda forward**

“Public safety is not just about people being safe but also their feeling safe. It is a perception grounded in freedom from harm and the consequences of crime and disorder in our homes, workplaces, and communities. It comes from the confidence that government and public safety agencies will respond effectively to emergencies, whether caused by acts of nature or human beings.” (p 110)

**Final Report of the [NS]
Mass Casualty Commission**

March 2023

1. Community safety is about much more than just policing

- “We must invest in a public safety system that is about more than police services, where multiple partners work together every day with substantial community engagement.”**

Final Report of the [NS]
Mass Casualty Commission

March 2023

- “We conclude that rather than starting with questions about the role of policing, we need to recalibrate the question and start with community.” (p 126 – 7)
- “The community, not the police, needs to be at the centre of a modernized community safety and well-being model, with the police serving as a collaborative partner, not as the primary actor in this social system.” (p 195)

Final Report of the [NS]
Mass Casualty Commission
March 2023

2. Community safety is an issue for the whole region

This national framework would be based on guiding principles central to the delivery of public services that include:

- (i) the centrality of **a commitment to equality and inclusion** as foundational principles for community safety and well-being;
- (ii) **a prevention-first approach to safety;**
- (iii) **an understanding that social determinants of health are also the social determinants of community safety and well-being;**
- (iv) **an understanding that police and corrections are layers of this approach to community safety and well-being as decentred and collaborative partners;**

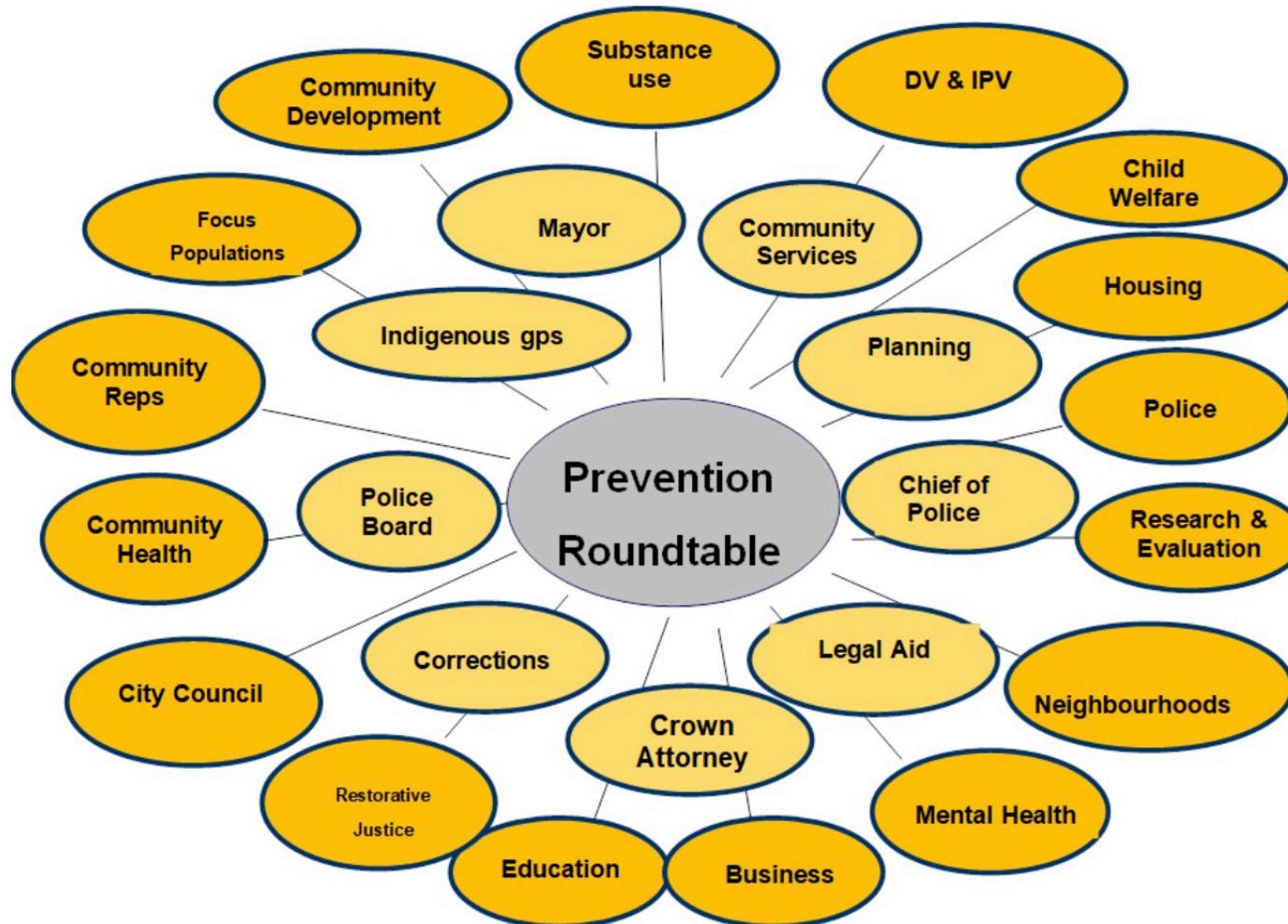
- The Commission recommends that “provincial and territorial governments should each enact laws within a year to create a statutory framework for community safety and well-being initiatives. These frameworks should include provision for (*among other things*):

- (ii) municipalities (individually or jointly) to prepare and adopt community safety and well-being plans in partnership with a multi-sectoral advisory committee;
- (iii) community safety planning to address four areas: social development, prevention, early intervention, and incident response; [L]
[SEP]

Final Report of the [NS] Mass Casualty Commission

March 2023

3. The CRD could use its convening power to move this agenda forward



Source: Waterloo
Region Crime
Prevention
Council

- “The community safety ecosystem is a framework of governmental, institutional, and agency and service provider relationships, including processes for community engagement.” (p 103)

Final Report of the [NS]
Mass Casualty Commission
March 2023



A chance to hear from Prof. Irvin Waller

Irvin Waller is an Emeritus Professor of Criminology at University of Ottawa. He is an internationally acclaimed expert on community safety, violence prevention and victim's rights. He has served on national commissions in Canada, South Africa, the UK and the USA.

He pioneered the UN General Assembly Resolution on Principles of Justice for Victims.

Professor Waller is in the area on vacation in May and has agreed to two presentations on Friday May 5th

- 1. A lunch and discussion with local Mayors**
- 2. A presentation and discussion with invited community leaders in the early afternoon**

Details and invitations will follow

Contacts

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Shannon Turner

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Steve Woolrich

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RÉSEAU MUNICIPAL
CANADIEN EN PRÉVENTION
DE LA CRIMINALITÉ | CANADIAN MUNICIPAL
NETWORK ON CRIME
PREVENTION
Ensemble pour des villes canadiennes plus sécuritaires | Together for Safer Canadian Cities



Prevention of Violence Canada
Prévention de la Violence Canada

Public Health Association of British Columbia



CPTED
CANADA
CRIME PREVENTION
THROUGH ENVIRONMENTAL DESIGN

Community Health Network Summary

The Capital Regional District Community Health Network (CRD CHN) brings together a wide range of non-profit, government, education and health organizations to work on social and structural determinants of health and wellness in our region. Through this network, we identify gaps in the community health and wellness landscape by engaging with the community directly. Once a gap is identified, the Network supports partnership development and research to create programs that will fill that gap and create healthier communities across the CRD.

The CRD CHN is continually reviewing and expanding membership to ensure it is reflective of the demographics of our region and the areas we wish to focus on. At present our membership includes:

- Government of BC
- Island Health
- Power To Be
- Victoria Foundation
- Take a Hike Foundation
- Royal BC Museum
- Sooke Region Community Health Network
- Rainbow Health Coop
- Foodshare Network
- United Way of Southern Vancouver Island
- Salt Spring Health Advancement Network
- University of Victoria
- Community Social Planning Council
- Together Against Poverty
- Greater Victoria Alliance for Literacy
- Alliance to End Homelessness in the Capital Region
- City of Victoria
- Mental Health Recovery Partners
- Rick Hansen Foundation
- Victoria Native Friendship Centre
- Canadian Mental Health Association
- Cool Aid
- Intercultural Association
- Southern Gulf Island Community Resource Centre
- Capital Bike
- North Park Neighbourhood Association
- Building Resilient Neighbourhoods
- Power To Be
- Greater Victoria Public Library
- Royal Roads University
- Capital Bike
- Seniors Serving Seniors
- Disability Resource Centre
- Human Nature Counselling
- School District 62
- Songhees Nation
- Foundry
- Quadra Village Community Centre
- Central Saanich
- Sidney
- Esquimalt
- BC Healthy Communities
- University of Victoria
- Community Social Planning Council
- Saanich
- Colwood
- Sooke

How to Halve Violent Crime Before 2030: Accelerator Actions Needed Now (SDG16.1-2, 5.2)

Irvin Waller, Ph.D.

Author, Science and Secrets of Ending Violent Crime

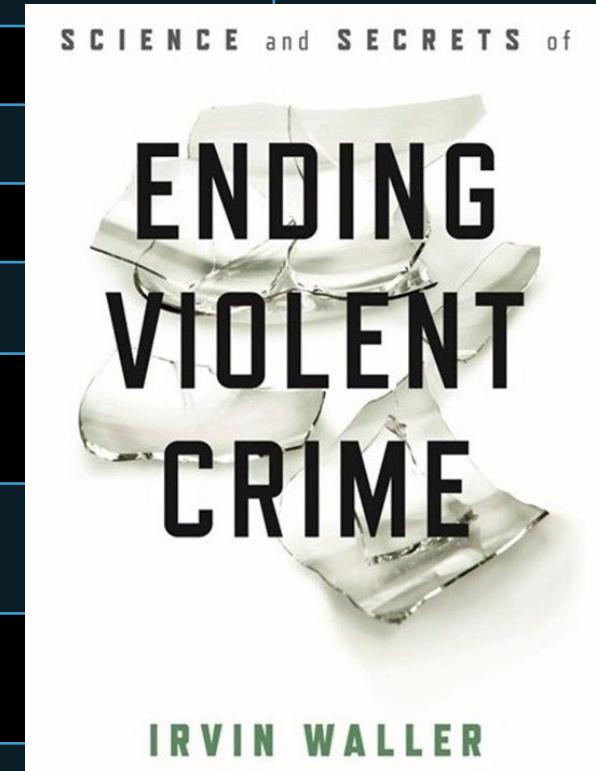
iwaller@uottawa.ca www.irvinwaller.org Twitter @irvinwaller



50% less violence by 2030

To halve violent crime before 2030 requires accelerators to make the change and investment in what is proven

Accelerators to make the change	Toronto	Canada
A. Violence reduction units		
B. Professional development and training for prevention		
C. Data and tools to measure outcomes, epidemiology ...		
D. Raising awareness of solutions		
Sustained investment in programs proven to work		
1. Outreach to Young Men (street workers, hospital emergency, mentoring, mediation ..)		
2. Attitude, Emotional Control and Achievement (SNAP, life skills, help to complete school, ...)		
3. Changing Culture in Schools, Universities and Colleges (Bystander intervention, 4th R, anti-bully ...)		
4. Family and Parenting Support and Preschool (Headstart, Triple P, Functional Family, Multi-systemic ...),		
5. Jobs and Training		
Total to Halve Violent Crime Before 2030	\$100 million	\$2 billion





SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

In 2015, world leaders committed to significant reductions in homicides and violence against women and children by 2030

Set measurable targets and change to achieve them

Invest for results to achieve outcomes
Monitor performance and network

5 GENDER EQUALITY



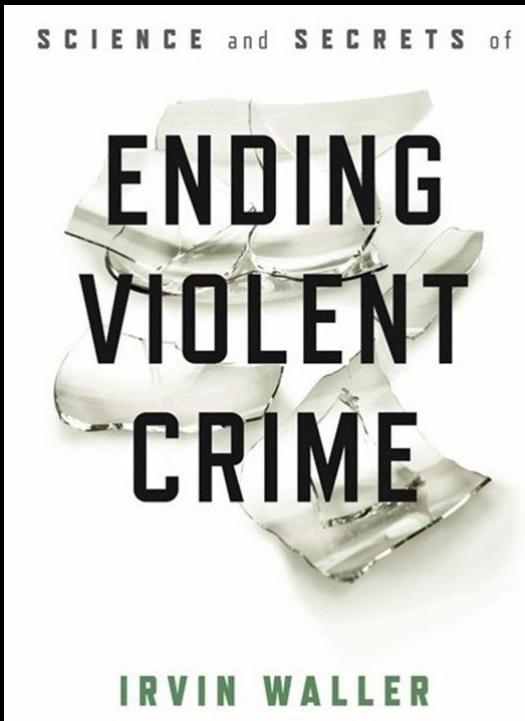
SDG16.1, 16.2, 16.3 and 5.2



50% less violence by 2030

16 PEACE, JUSTICE AND STRONG INSTITUTIONS





Solid science confirms violence is preventable

- Consensus on what works – crimesolutions.gov, WHO ...
- Focused prevention reduces violence by 50% within a few years
- General prevention (e.g. social safety net) also reduces violence

International guidelines show essentials for successful action

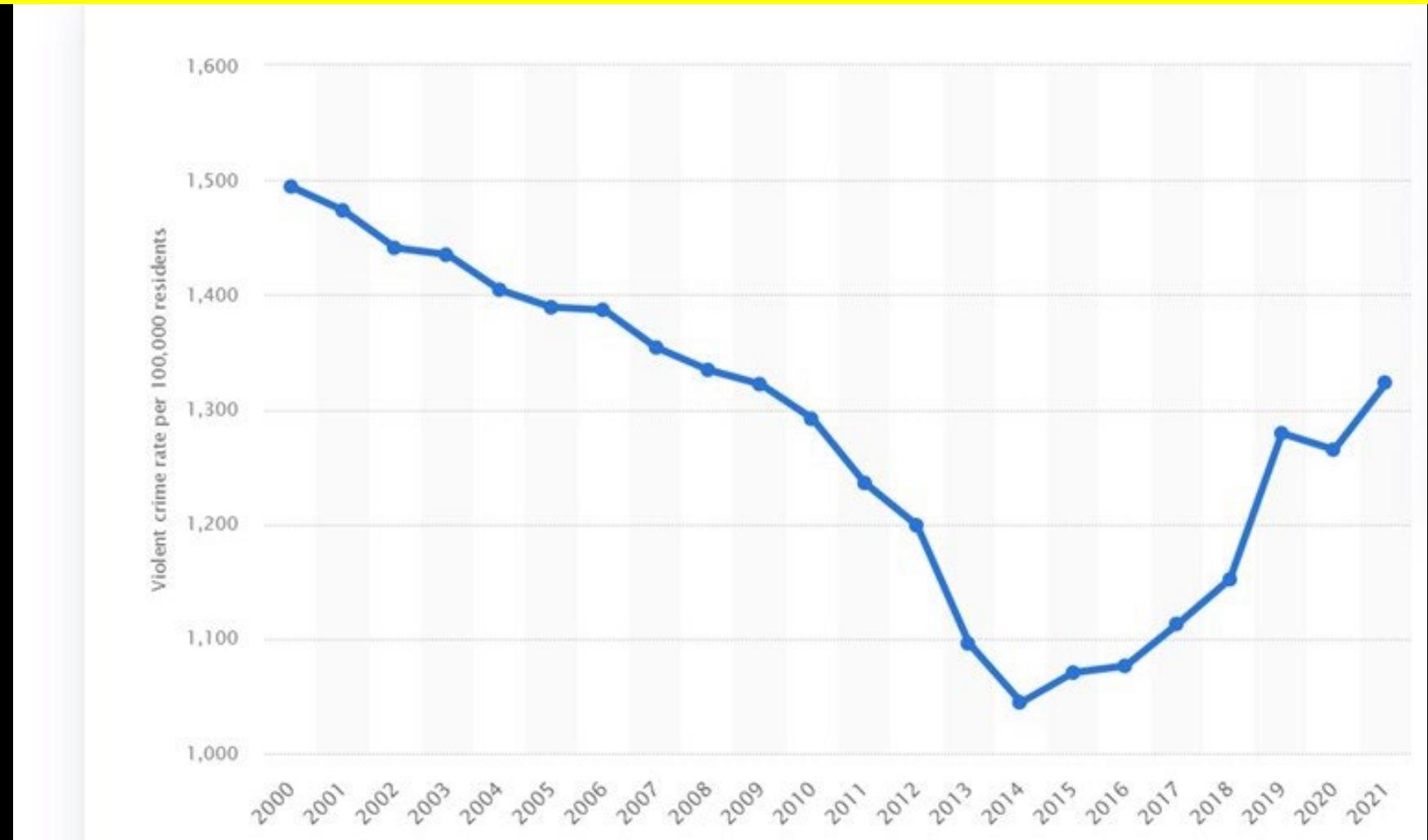
- Office to diagnose, plan, evaluate and mobilise key sectors
- Sustained and adequate investment
- Learning from cities that succeed

Secrets of getting buy in

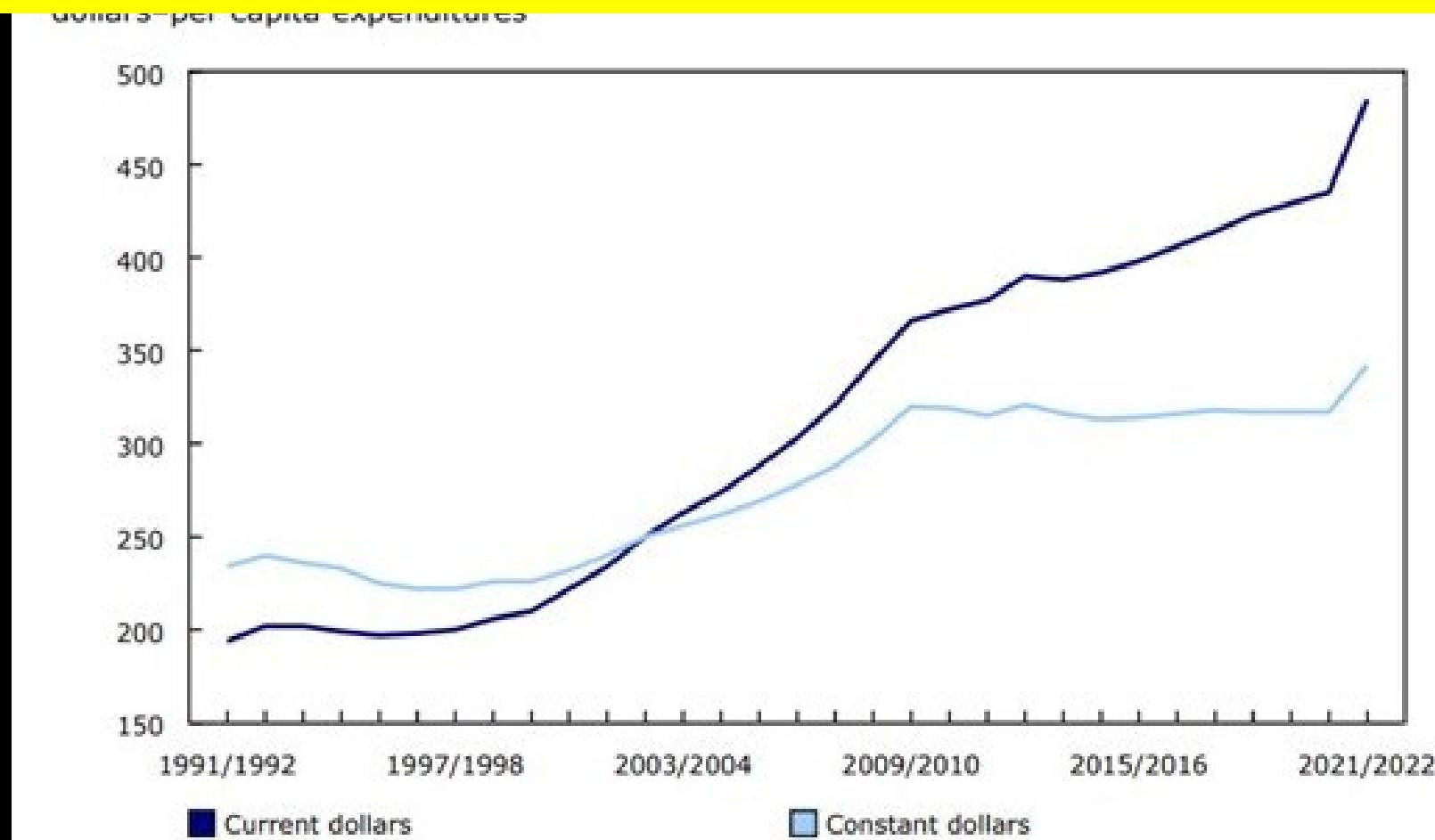
- Training decision makers and practitioners and providing tools
- Making case for saving lives and stopping trauma
- Investing adequately and sustainably

Violent crime recorded by police in Canada from 2000 -2021

rate per 100,000 residents



Expenditures on policing per capita, current and constant dollars 1988/89-2021/2022



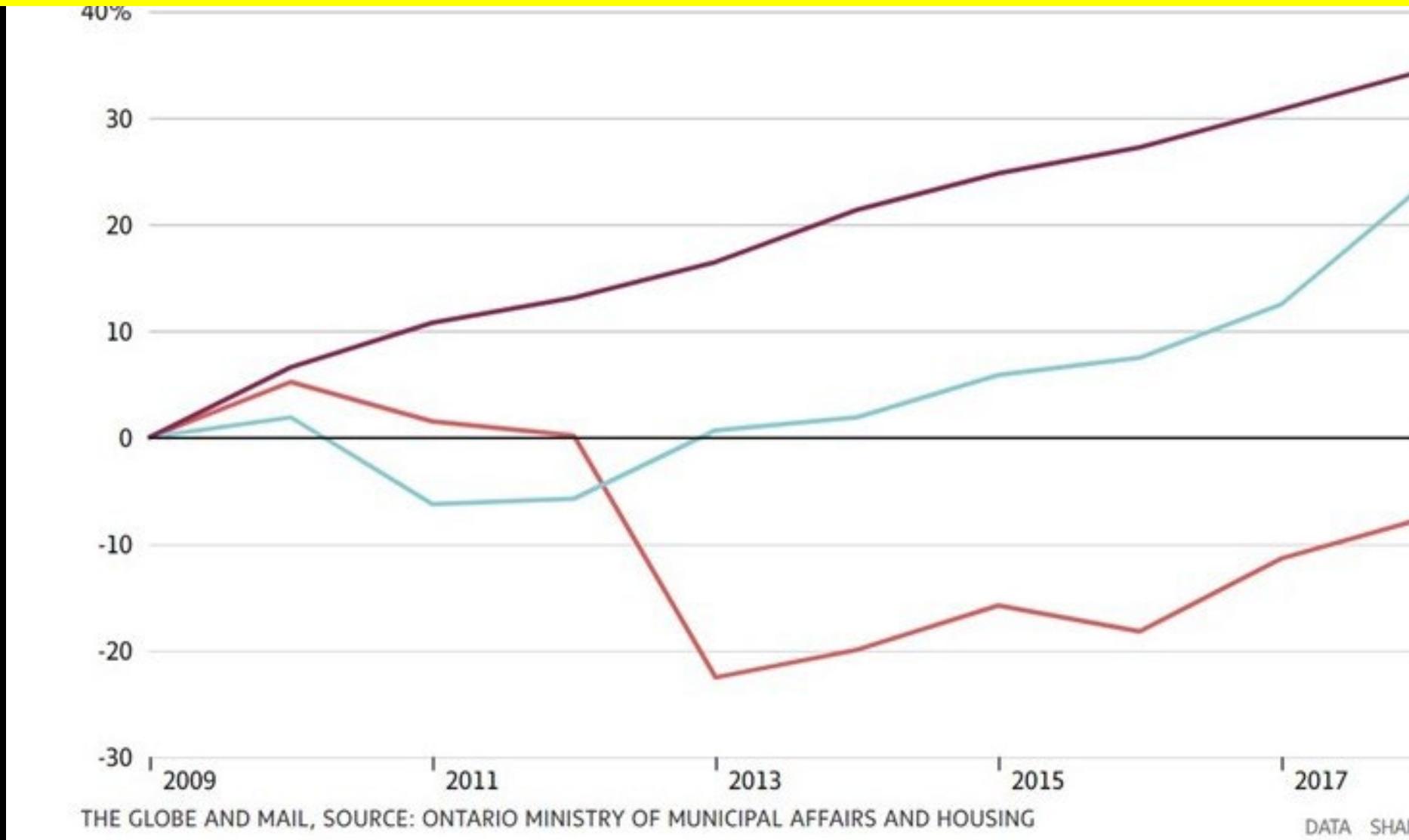
... not applicable

Note(s): Current dollars express the cost of items in terms of the year in which the expenditure occurs. Constant dollars are adjusted (by inflation or deflation) to show changes in the purchasing power of the dollar. The Consumer Price Index was used to calculate constant dollars over 1988/89-2021/2022. Due to the Police Administration Survey being an annual survey, the 2020 cycle was cancelled. Therefore, there are no data associated with 2020. The data for 2021/2022 is based on July 1, 2021 estimates from Statistics Canada's Centre for Demography. While data on police personnel are based on the data from the 2020 cycle, the data for 2021/2022 is based on the estimates from the 2021 cycle (March 31, 2022).



50% less violence by 2030

In Ontario, municipal spending on housing and social/family services have not kept up with policing



Evidence shows more police and incarceration are reaction to, not prevention of, violence as illustrated by two international comparisons

Population	8 million		2.7 million	
	New York City	London, England	Chicago	Toronto
Police officers	38,000	31,000	13,000	5,500
Incarceration rate*	443	132	564	107
Homicides **	436	130	781	70
Homicide rate	5.5	1.6	27.9	2.5

*. Incarceration rate per 100,000 for the US state of the city

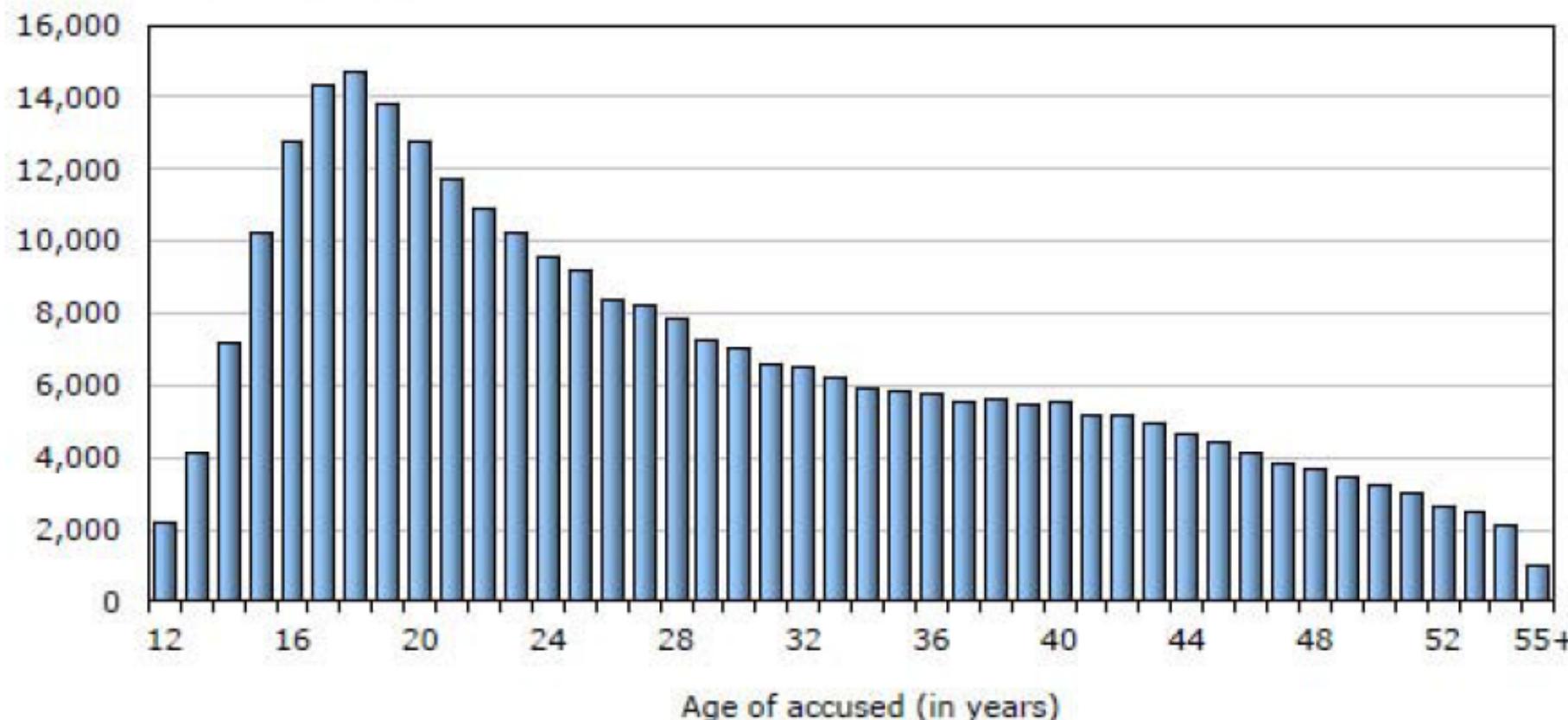
<https://www.prisonpolicy.org/> and National rate for Canada for Toronto and England and Wales for London <https://www.prisonstudies.org/>

** Estimates on 20201227 <https://www.thecity.nyc/2020/12/21/22189682/why-are-shootings-up-in-new-york-city-in-2020-nypd>; <https://www.bbc.com/news/uk-england-london-54452247>; <https://heyjackass.com/>; [https://data.torontopolice.on.ca/pages/homicide/](https://data.torontopolice.on.ca/pages/homicide;);

Chart 15

Persons accused of crime, by age, Canada, 2010

rate per 100,000 population



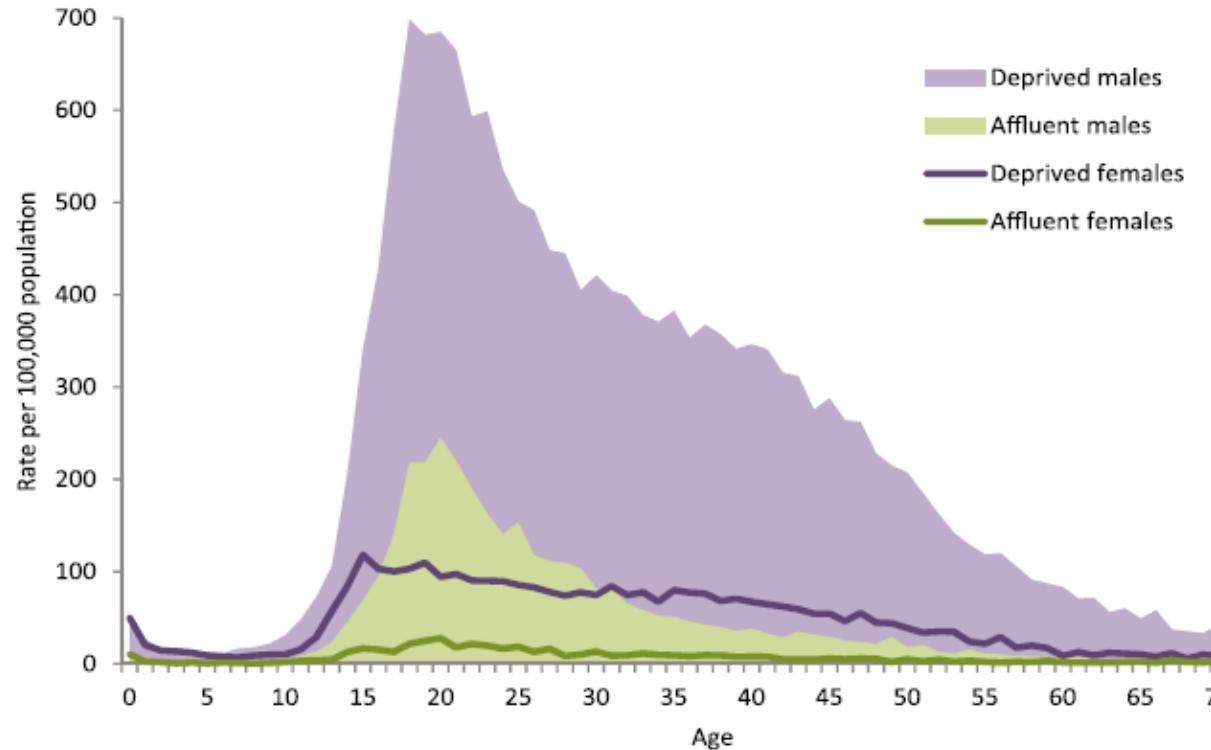
Note: Includes persons who were formally charged by police (or recommended for charging) as well as those who were charged by other means other than the formal laying of a charge (e.g. diversion programs).

Source: Statistics Canada, Canadian Centre for Justice Statistics, Uniform Crime Reporting Survey.

Too many crime victims and too much pain and harm to victims

Figure

Males from deprived areas five times as likely to be admitted for violence to hospital as males from non-deprived areas (UK)



*Most and least deprived quintiles, based on IMD

Source: Bellis et al, 2011⁴



REBALANCING JUSTICE

RIGHTS FOR
VICTIMS OF CRIME

Irvin Waller

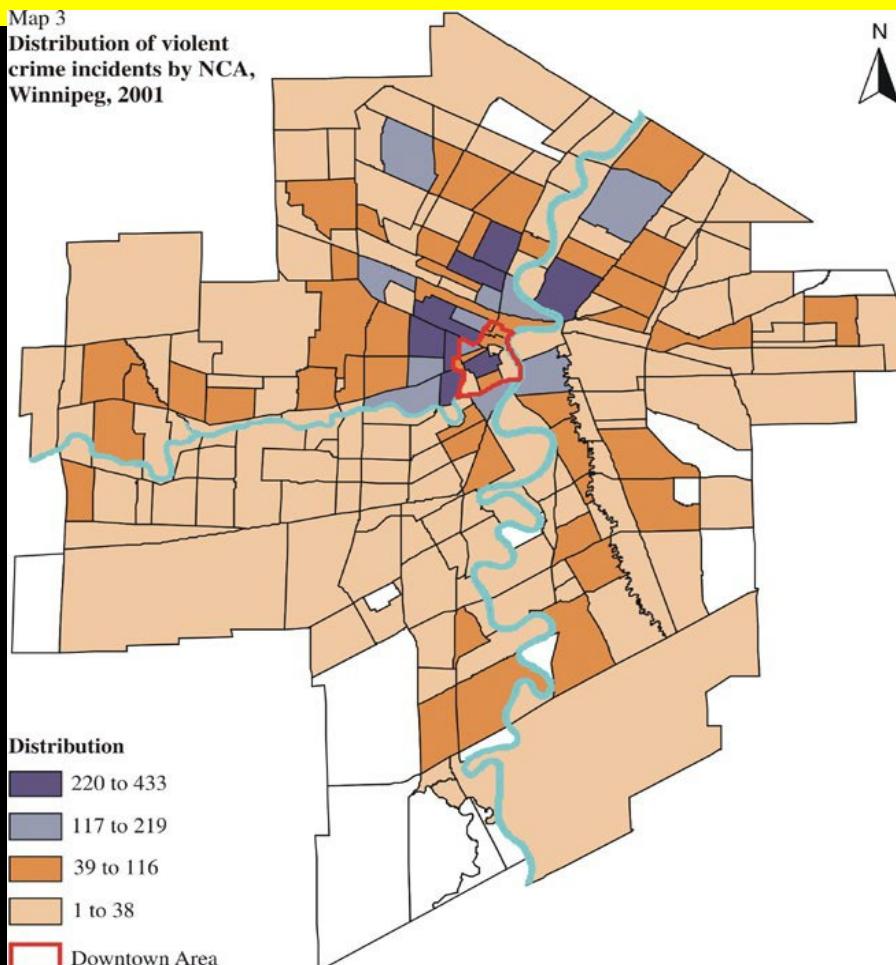
According to longitudinal studies,

Causes of youth offending more persistently

6% of families account for 50% of offending

- Born into a family in relative poverty and inadequate housing;
- Brought up with inconsistent and uncaring parenting; A witness of intra-familial violence;
- Limited social and cognitive abilities;
- Presenting behavioural problems in primary school;
- Excluded from, or dropping-out of, school;
- Frequently unemployed and with relatively limited income;
- Living with a culture of violence

Distribution of violent crime recorded by police by neighborhood in Winnipeg in 2001

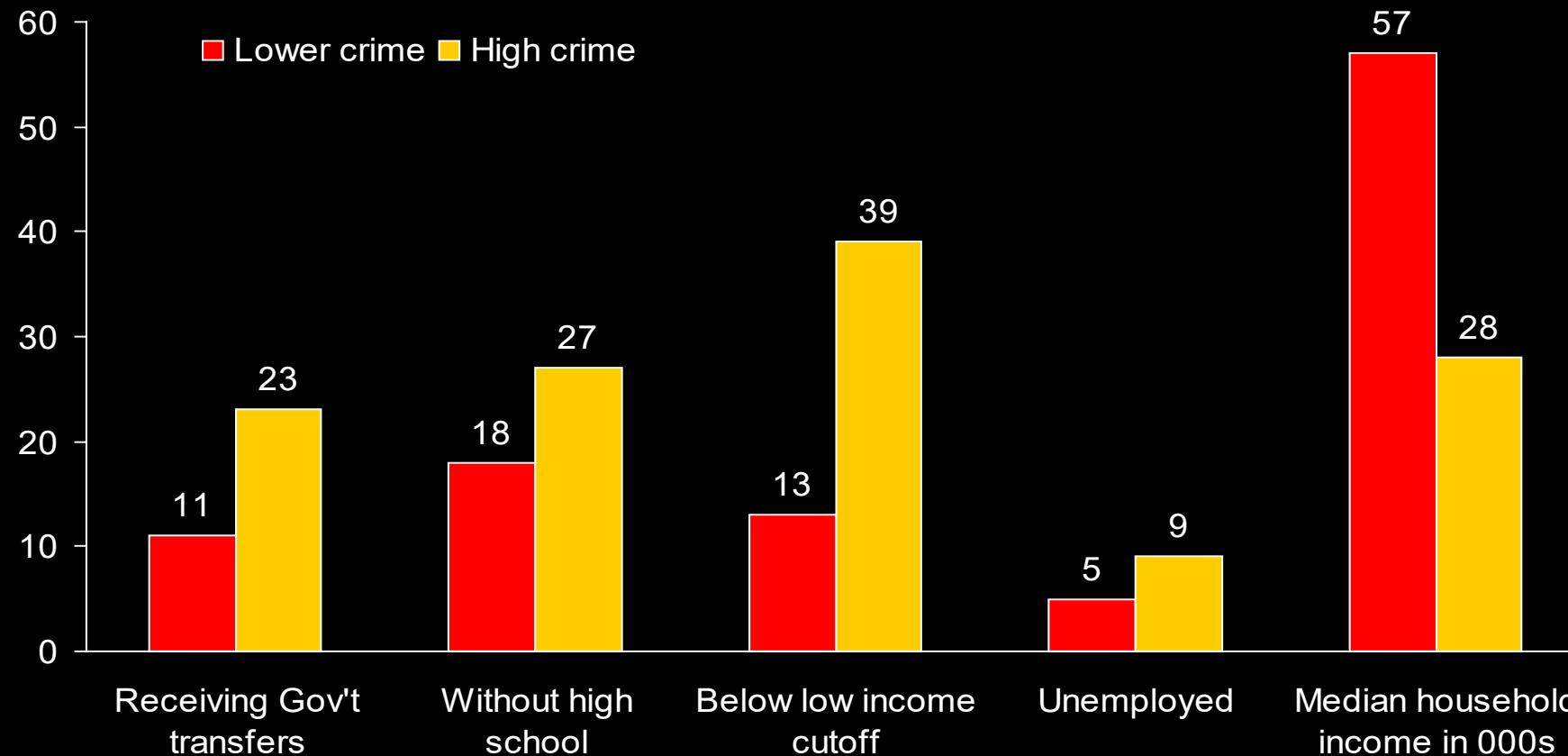


Based on 9,727 violent crime incidents.

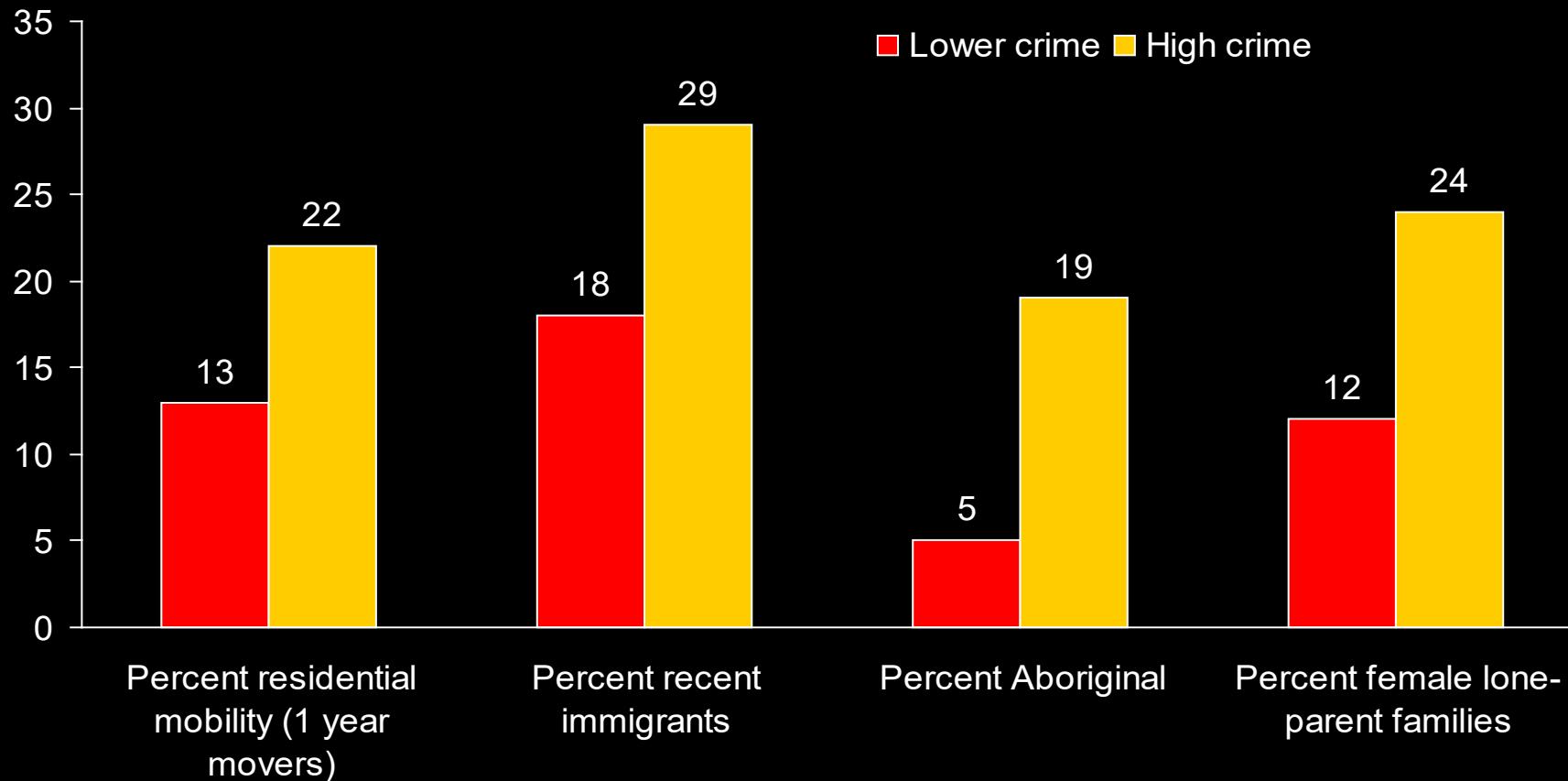
Source: Statistics Canada, 2001 UCR2.

Map source: R. Fitzgerald, M. Wisener and J. Savoie, 2004, *Neighbourhood Characteristics and Justice Research Paper Series, 4*, Statistics Canada Catalogue no. 85-561-MWE.

Percent socio-economic characteristics in n'hoods with high and lower violent crime



Percent socio-economic characteristics in n'hoods with high and lower violent crime



Large scale data sets confirm social, situational and location of crime

5% of youth account for 55% of offences

- Longitudinal studies confirm 5% risk factors such as relative poverty, ineffective parenting and dropping out of school

4% of victims account for 44% of victimisation

- Victimization studies confirm 4% risk life routines such as violent associates, vulnerable to opportunity, close to offenders

Hot spot locations for drugs and other offences

- Police statistics confirm that hotspots concentrate offenders and victims geographically

Today, we have “solid violence prevention science” on what reduces crime. We have multiple government/academic sources that identify the same proven solutions, but we are not using them

www.popcenter.org

Center for Problem-Oriented Policing

2012 POP Conference
Oct 22-24, 2012 Providence

SCIENCE and SECRETS of

ENDING VIOLENT CRIME

OFFICE OF J
SOLUT

TOPICS

Topics A-Z
Corrections & Reentry
Courts
Crime & Crime Prevention
Drugs & Substance Abuse
Juveniles
Law Enforcement
Technology & Forensics
Victims & Victimization

About CrimeSolutions.gov
The Office of Justice Programs' national center for criminal justice, juvenile justice, and victims' issues
On CrimeSolutions.gov
Research on
Expert Review
Easily understood
indicates what
Review and Rating from Start to Finish

IRVIN WALLER

Search Entire Site
POP Conference

PROBLEM-SOLVING TOOLS

RENT PROJECTS ALL Search

WSIPP is assigned a variety of projects to meet the directions of the

Violence INFO

Child maltreatment Youth violence Intimate partner violence Elder abuse Sexual violence Homicide

Studies Countries/areas About

World Health Organization

INTERPERSONAL VIOLENCE AFFECTS HUNDREDS OF MILLIONS OF PEOPLE. BUT IT CAN BE PREVENTED.

Learn more

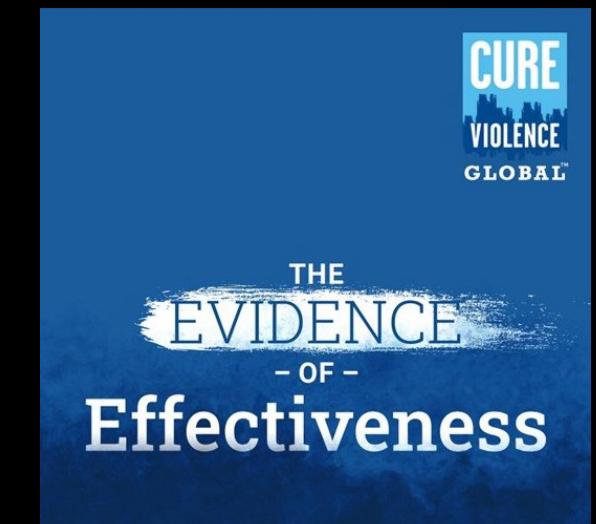
Advocate
Recommend a program
Programs at a Glance

Centre for
Public Health

Successful pre-crime prevention

Outreach to youth – eg Youth Inclusion Program

- Example funded by YJB
- Focus on the 50 most at risk youth
 - aged 13-16 in each of 70 of the most difficult neighborhoods.
 - 10 hours a week of activities, including sports, training in information technology, mentoring and help with literacy and numeracy issues
- Results confirmed by the scientific evaluation
 - 65% reduction in youth arrests
 - 30% reduction in youth removed from schools
 - 16% reduction in overall crime.
- Costs
 - Equals cost of taking a young offender through the youth justice system for one offence (ie 50 to 1 + more effective)



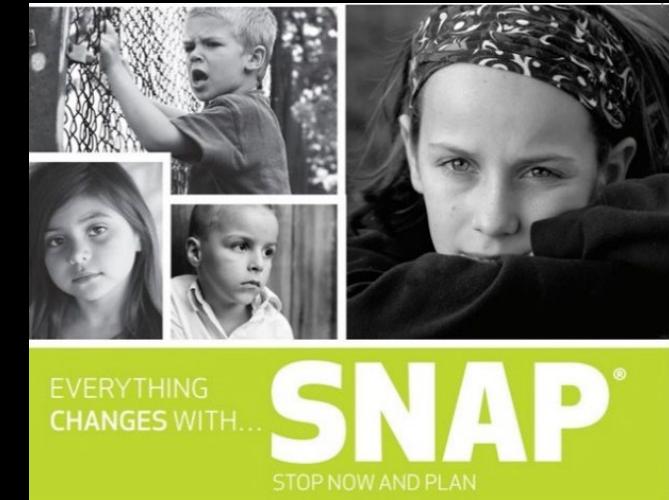
50% less violence by 2030

Hospital-Based Violence Intervention (HAVI) to address the revolving door of victims of violence in hospital emergency rooms.

- The victims arrive at the hospital with injuries caused by the violence.
- Trauma experts know that people who present with injuries often need more than stitches to heal the ailments.
- A growing number of hospitals and healthcare providers are adopting hospital-based violence intervention (HAVI) programs.



SNAP® (Stop Now And Plan) is an evidence-based, gender-responsive, cognitive-behavioral and family-oriented



Solving problems in difficult places by investing in positive parenting, public health nurses, and enriched child care prevents crime



The screenshot shows the homepage of the Triple P Positive Parenting Program. The top navigation bar features the 'Triple P Positive Parenting Program' logo with a registered trademark symbol, and the tagline 'for every parent'. Below the logo, a large image of a smiling young girl playing with colorful blocks is displayed. To the right of the image, the text 'Small changes, big differences.' is written. The main content area contains a paragraph about the program's history and effectiveness, followed by a 'SELECT YOUR CURRENT LOCATION' dropdown menu. The menu lists various countries: Australia, New Zealand, Belgium, Singapore, Canada, Switzerland, Germany, United Kingdom, Hong Kong, United States, Netherlands, and Other.

Small changes, big differences.

Parenting now comes with an instruction manual!

Whether you're a parent, a practitioner or an organisation that works with parents, the international award winning Triple P – Positive Parenting Program®, backed by over 25 years of clinically proven, world wide research, has the answers to your parenting questions and needs. How do we know? Because we've listened to and worked with thousands of parents and professionals across the world. We have the knowledge and evidence to prove that Triple P works for many different families, in

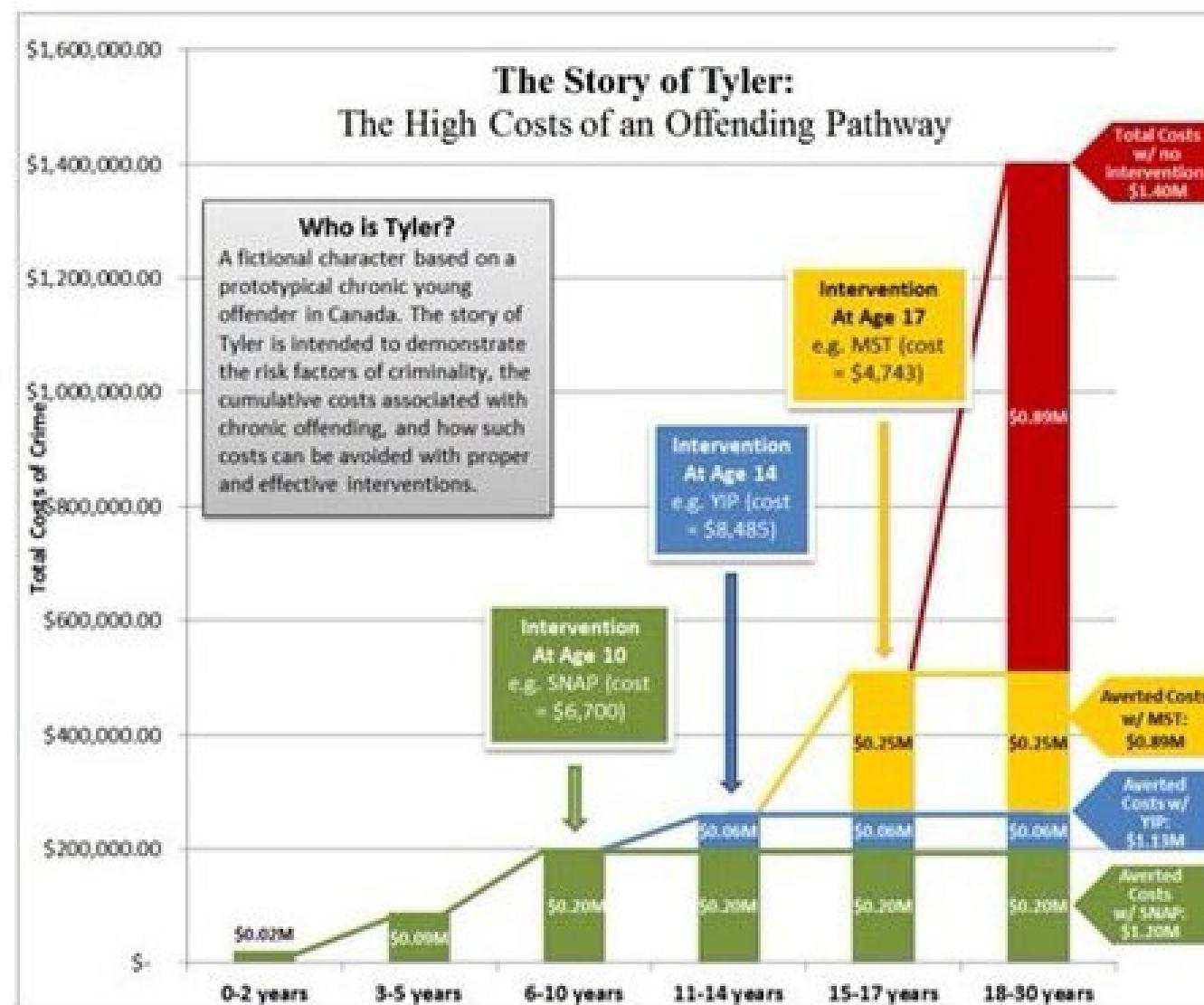
SELECT YOUR CURRENT LOCATION

Australia	New Zealand
Belgium	Singapore
Canada	Switzerland
Germany	United Kingdom
Hong Kong	United States
Netherlands	Other

The High/Scope Perry Preschool Study Through Age 40

Summary, Conclusions, and Frequently Asked Questions

Public Safety Canada Website shows significant savings from investments that stop crime before it happens



Safety Monitor Tool 1: Key Evidence based Programs

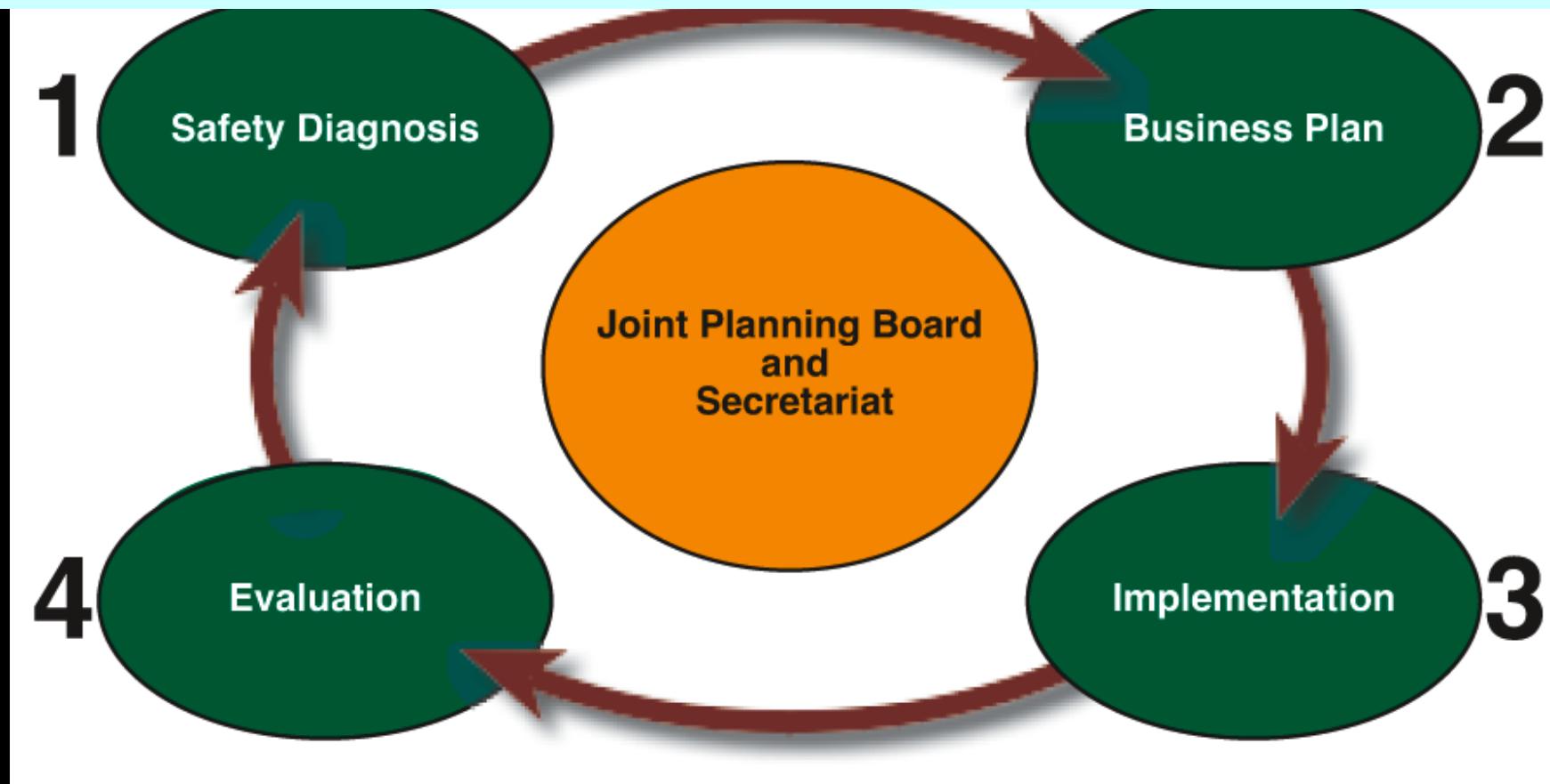
Prevention tackling causes

	1	Engage and support young males
	2	Support positive parenting and early childhood
	3	Strengthen anti-violence social norms
	4	Mitigate financial stress
	5	Trauma therapy
	6	Use "logic model" but avoid solutions proven ineffective

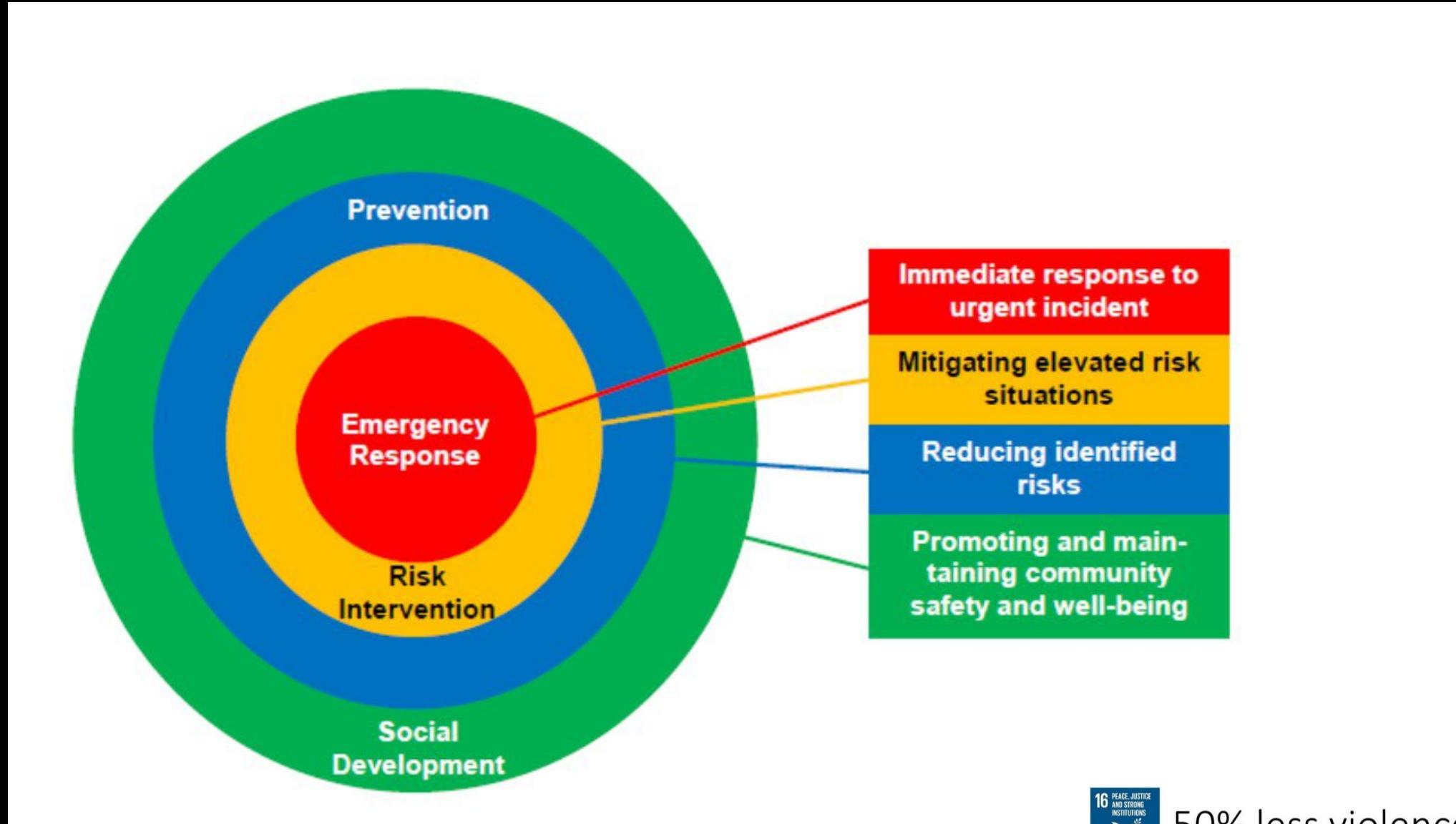
Using police smartly

	1	Reduce harmful effects of the justice process
	2	Focusing on alcohol
	3	Focusing on firearms and knives
	4	Orienting to solving problems and hot spots
	5	Focussing deterrence – caution discrimination
	6	Avoid policing strategies proven ineffective

Multi-sector governance to tackle multiple risk factors



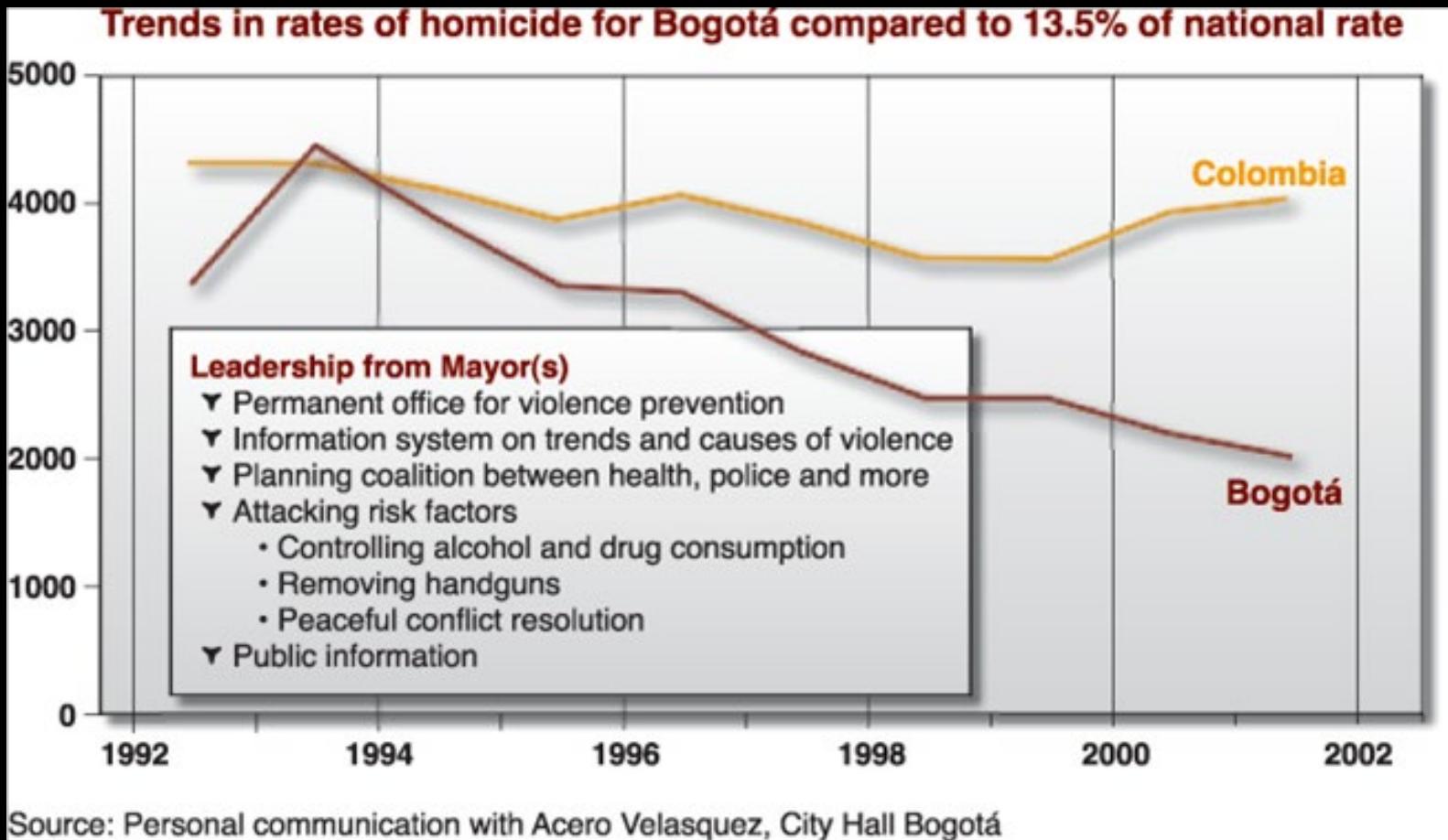
*Ontario charts community safety and well-being



Safety Monitor Tool 2: Essentials for successful implementation

	1	Does city have an office for violence prevention?	
	2	Has city undertaken plan to diagnose, plan, implement and evaluate?	
	3	Has city explored proven strategies and logic models (see list of prevention tackling causes and using police smartly)?	
	4	Is city mobilising sectors able to tackle causes?	
	5	Is city investing new sustained funding to tackle causes? - equivalent to 10% of police and health responder budgets?	
	6	Has city trained officials in prevention planning and achievement?	
	7	Has city engaged public, women, minorities in interventions and awareness?	
	8	Is city benefitting from socio-economic reforms likely to impact violence?	
	9	Is the city monitoring outcome data, from police, hospital admissions, surveys by age, gender and race?	
	10	Has city set measurable targets for performance indicators and outcomes for 2025 and 2030?	

What did the Mayors of Bogotá do to reduce homicides



Glasgow Violence Reduction Unit diagnosed and targeted what was proven to have worked to achieve 50% less violence within 3 years



* Offending for length of engagement prior to signing up to CIRV vs offending after signing up

What is the **Mayor of London** doing to reduce violence

Office for Violence Reduction

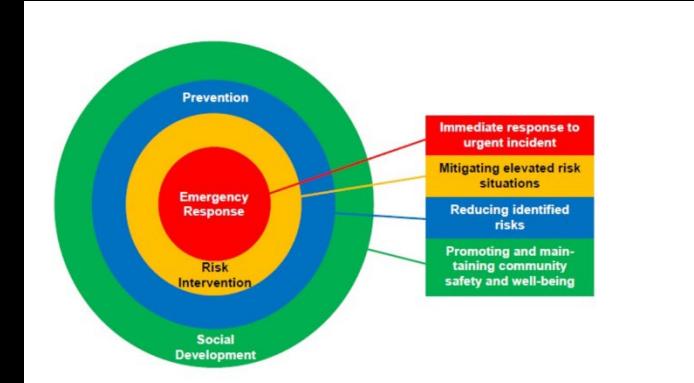
Youth mentors for all, reducing poverty and racism, and more

Cognitive behavioral therapy, neighborhood, school completion

<https://youtu.be/sLw21vvMzAE>



50% less violence by 2030



What is the **Mayor of Toronto** doing to reduce violence

Community Safety Plan required by Police Act
Developing Office for Violence Reduction
Projects to tackle trauma, drug overdoses
and homelessness

What is the **Mayor of Newark** doing to stop spike in homicides in his city

Office for Violence Prevention and Trauma
Community street team, hospital intervention
Ordinance to establish office with 5% of
police budget and similar in grants

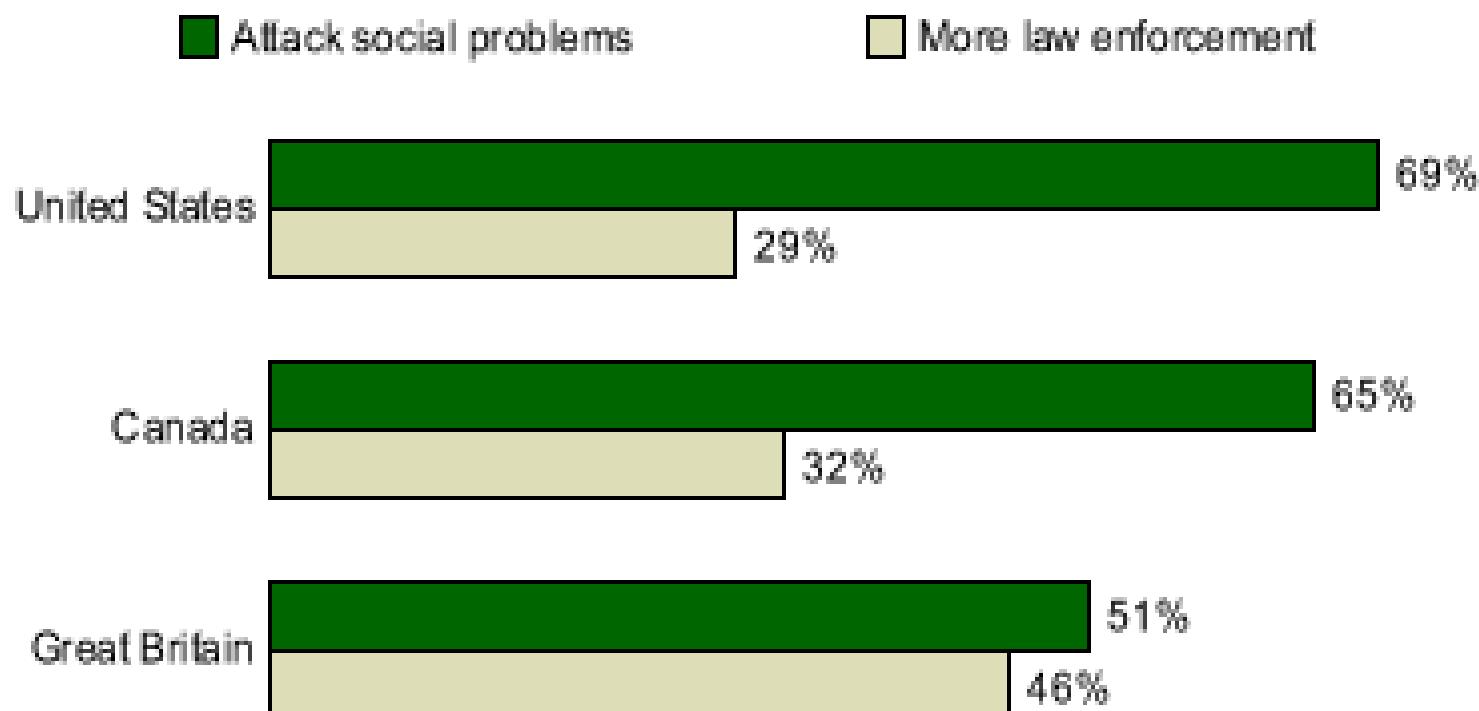
How can we change to saving lives, stopping trauma, and decreasing fear by tackling causes?

Most Canadians have confidence in police, but not so much in courts and corrections - many have reticence for reporting, and, reporting decreases confidence – GSS

Canadians are divided equally on support or lack of support for defunding the police and redirecting these funds to other local government services – IPSOS 2020

Preferred Approach to Solve Crime

Which of the following approaches to lowering the crime rate in the United States comes closer to your own view – do you think more money and effort should go to attacking the social and economic problems that lead to crime through better education and job training (or) more money and effort should go to deterring crime by improving law enforcement with more prisons, police, and judges?



Resources available for awareness and change to reduce violent crime

1. Local groups of mothers of offenders and victims

[Andrea Magalhaes](#)

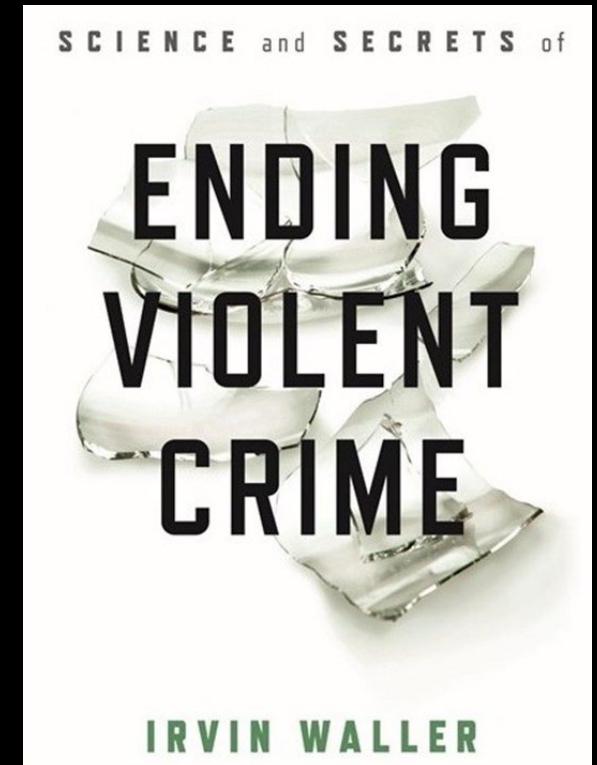
Moms Demand Action against Gun Violence

2. Science and Secrets of Ending Violent Crime for decision makers in their local offices and during elections

- [Upstream effective solutions \(equivalent of 10% of CJS\);](#)
- [Petition read in parliament;](#)
- [Editorials like in \[Toronto Star\]\(#\) Opeds by Bradley and Waller;](#)
- [Action briefs and training from Canadian Municipal Network for Crime Prevention](#)

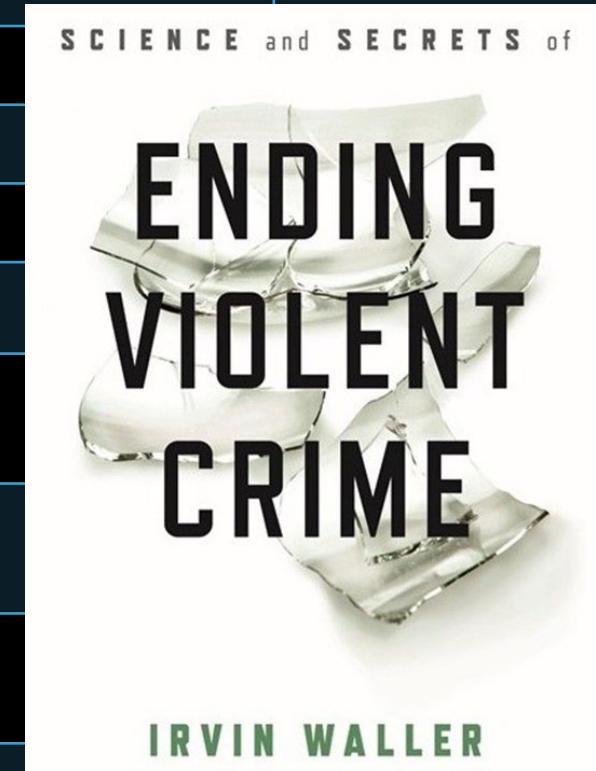
3. E-Market achievability of ending violent crime :

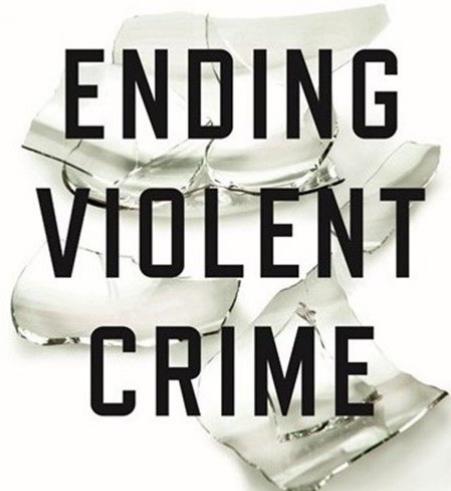
- [Halving Violent Crime Before 2030 \(2 mins – Canadian version soon\)](#)
- [Adverse childhood experiences \(2 mins\)](#)
- [TEDx talk on Smarter Crime Control \(14 mins\)](#)



To halve violent crime before 2030 requires accelerators to make the change and investment in what is proven

Accelerators to make the change	Toronto	Canada
A. Violence reduction units		
B. Professional development and training for prevention		
C. Data and tools to measure outcomes, epidemiology ...		
D. Raising awareness of solutions		
Sustained investment in programs proven to work		
1. Outreach to Young Men (street workers, hospital emergency, mentoring, mediation ..)		
2. Attitude, Emotional Control and Achievement (SNAP, life skills, help to complete school, ...)		
3. Changing Culture in Schools, Universities and Colleges (Bystander intervention, 4th R, anti-bully ...)		
4. Family and Parenting Support and Preschool (Headstart, Triple P, Functional Family, Multi-systemic ...),		
5. Jobs and Training		
Total to Halve Violent Crime Before 2030	\$100 million	\$2 billion

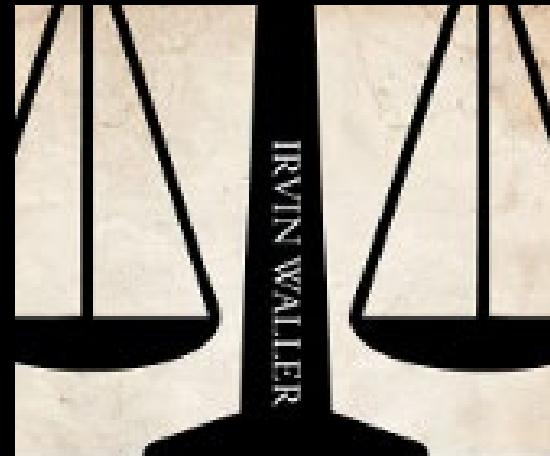




IRVIN WALLER

*For the harm done by the offender,
he is responsible*

*For the harm done because we do not
use the best knowledge when that is
available to us, we are responsible*



Smarter
Crime
Control

Irvin Waller, Ph.D.

Author, Science and Secrets of Ending Violent Crime

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50% less violence by 2030

**REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, MAY 17, 2023**

SUBJECT **Greater Victoria Drinking Water Quality – 2022 Annual Report**

ISSUE SUMMARY

To present the Greater Victoria Drinking Water Quality 2022 Annual Report to the Regional Water Supply Commission prior to submission to the provincial regulator.

BACKGROUND

The Capital Regional District (CRD) undertakes a comprehensive water quality monitoring program as part of its multi-barrier approach to provide a safe drinking water supply to the region. The Water Quality Monitoring Program reports water trends on a regular basis to the Regional Water Supply Commission, along with a comprehensive annual report for each calendar year. The Greater Victoria Drinking Water Quality 2022 Annual Report is attached as Appendix A. Water suppliers in BC are responsible for monitoring and providing an annual report to the provincial regulator (i.e., Island Health Authority). To assist in meeting these responsibilities, the CRD has prepared this report, which will be distributed to Island Health and all municipal water purveyors and posted on the CRD website.

ALTERNATIVES

Alternative 1

The Regional Water Supply Commission recommends to the Capital Regional District Board:
That the Greater Victoria Drinking Water Quality 2022 Annual Report be approved.

Alternative 2

That the Regional Water Supply Commission direct staff to provide further information.

IMPLICATIONS

Environmental & Climate Implications

The report indicates that our source water remains in good condition and there is excellent drinking water quality in all system components of the Greater Victoria Drinking Water System. The system is monitored for physical, chemical and biological water quality parameters. All trends are stable and indicate good conditions overall. 2022 saw some unusual weather patterns: spring and early summer were unusually cold and wet, which resulted in higher reservoir levels and cooler water temperatures. In contrast, fall was unusually warm and dry, into December. This, in turn, resulted in lower reservoir levels in the fall and warmer water temperatures. Despite these unseasonal weather conditions, the quality of the raw and treated water remained excellent. This has demonstrated the resilience of a water source that is integrated in a healthy and stable ecosystem, such as the Sooke Lake watershed.

Monitoring results indicate the CRD continues to meet guidelines for maintaining an unfiltered source water supply. Further monitoring within the distribution systems also indicates a good balance between managing bacterial growth and ensuring good water quality with low concentrations of disinfection byproducts.

Financial and Regulatory Implications

The reporting function is included within the overall budget for the Water Quality Monitoring Program. This task ensures there is adequate information to inform and work with Island Health officials, meet provincial regulatory requirements and federal guidelines, and ensure CRD staff have sufficient information to maintain proper oversight of the water supply system.

The CRD continues to provide compliance monitoring of the municipal systems within the region to deliver effective and efficient oversight for both monitoring and reporting of water quality within the overall distribution system. Responsibility for any issues that may arise in the municipal infrastructure remains the responsibility of the municipalities.

Social Implications

The full disclosure of water quality monitoring data maintains public confidence that the CRD is effectively managing the regional drinking water supply. The data and reports are available online through the CRD public website. Staff respond directly to any 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 drinking water supply to the region. Monitoring results summarized in the Greater Victoria Drinking Water Quality – 2022 Annual Report indicate good water quality overall, with the low risks associated with the unfiltered source water being well managed by the CRD's multi-barrier approach. Once the report is approved by the Board, it will be submitted to the Island Health Authority, as per the requirement under the BC Drinking Water Protection Act.

RECOMMENDATION

The Regional Water Supply Commission recommends to the Capital Regional District Board:
That the Greater Victoria Drinking Water Quality 2022 Annual Report be approved.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: Greater Victoria Drinking Water Quality – 2022 Annual Report



Making a difference...together

APPENDIX A

Greater Victoria Drinking Water Quality 2022 Annual Report

Parks & Environmental Services Department

Environmental Protection



Prepared By

Water Quality Program

Capital Regional District

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May 2023

Greater Victoria Drinking Water Quality 2022 Annual Report

EXECUTIVE SUMMARY

This report provides the annual overview of the Capital Regional District (CRD) Water Quality Monitoring program and 2022 water quality results within the Greater Victoria Drinking Water System (GVDWS) and its individual system components (see Map 1). The results indicate that Greater Victoria's drinking water continues to be of good quality and is safe to drink.

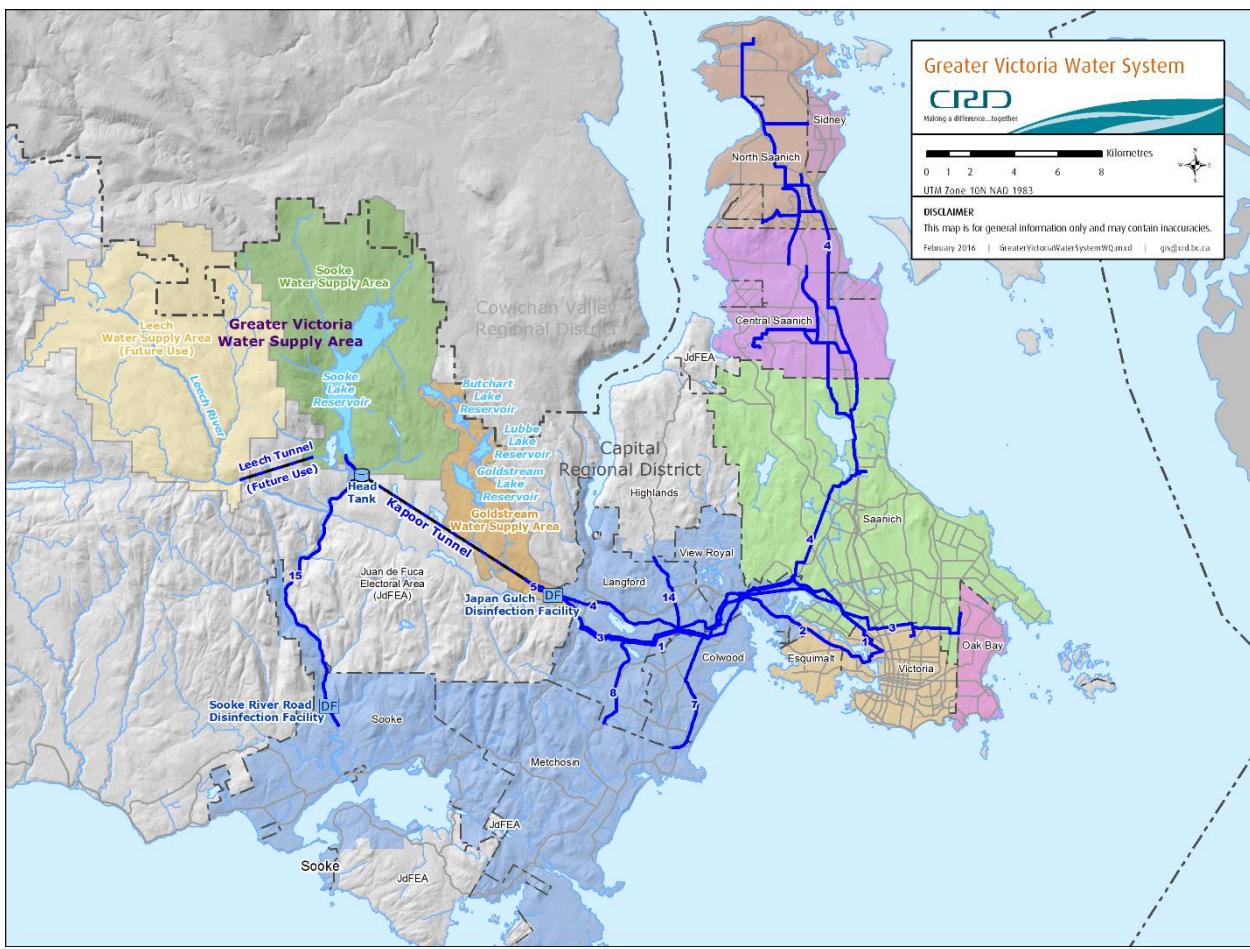
The monitoring program is designed to meet the requirements of the provincial regulatory framework, which is defined by the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*, and to follow the federal guidelines for drinking water quality.

The approximately 11,000 hectares of the Sooke and Goldstream watersheds comprise the source of our regional drinking water supply area. Water flows from the reservoirs to the Sooke and Goldstream water treatment plants and then through large-diameter transmission mains and a number of storage reservoirs into eight different distribution systems, which in turn deliver the drinking water to the consumers. The monitoring program covers the entire system to anticipate any issues (i.e., source water monitoring), ensure treatment is effective (i.e., monitoring at the treatment facilities), and confirm a safe conveyance of the treated water to customers (i.e., transmission and distribution system monitoring). It also enables CRD staff to address any concerns or questions by the general public. The program adopts a multiple-lines-of-evidence approach (biological, chemical and physical) to ensure all aspects of water quality are considered. The program is comprehensive, collecting approximately 10,000 samples and conducting approximately 75,000 individual analyses annually. The results are discussed with the Island Health Authority, which oversees compliance with drinking water standards, and with CRD operations and municipal staff, who rely on the information to properly operate and maintain the system components.

The source water reservoirs, with established and intact ecosystems, provide raw water of excellent and stable water quality that can be utilized unfiltered for the preparation of potable water. Water quality monitoring in the watersheds serves several purposes: 1) to verify that the CRD continues to comply with the criteria for an unfiltered surface water source; 2) to understand the quality of the water flowing into the reservoirs; 3) to ensure that staff are aware of the presence and absence of water quality-relevant organisms, including specific pathogens in the lakes, prior to any treatment; 4) to confirm that the water quality parameters remain within the effectiveness range of the disinfection treatment; and 5) to detect any taste and odour or other aesthetic concerns that could then pass through the system.

This annual water quality report separates the water system components that are the CRD's responsibility from system components that are the responsibility of the municipalities. The CRD provides water quality sampling and testing services for compliance purposes to all municipal water systems. Each water distribution system was assessed for compliance with the regulatory requirements. This annual report contains the compliance summary for the CRD and municipal water distribution systems in the GVDWS.

MAP 1. Greater Victoria Drinking Water System



**Greater Victoria Drinking Water Quality
2022 Annual Report**

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Greater Victoria Drinking Water Quality 2022 Annual Report

1.0 INTRODUCTION

This report is the annual overview of the results from water quality samples collected in 2022 from the Greater Victoria Drinking Water System (GVDWS) (see Map 1). The report summarizes data from the Capital Regional District (CRD) owned and operated water infrastructure that includes the source reservoirs, the Regional Transmission System and the Juan De Fuca Water Distribution System, as well as data from the municipal distribution systems. Monthly and weekly summary reports on water quality data are posted on the CRD's website at: <https://www.crd.bc.ca/about/data/drinking-water-quality-reports>.

2.0 WATER SYSTEM DESCRIPTION

In 2022, the GVDWS supplied drinking water to approximately 405,000 people and is the third-largest drinking water system operating in British Columbia. It comprises two separate service areas:

1. The **Goldstream Service Area** that supplies water to approximately 388,200 people in Victoria, Saanich, Oak Bay, Esquimalt, Central Saanich, North Saanich, Sidney, Highlands, Colwood, Langford and Metchosin via the Goldstream Water Treatment Plant.
2. The **Sooke Service Area** that supplies water to approximately 16,800 people in Sooke and East Sooke via the Sooke River Road Water Treatment Plant.

2.1 Source Water Systems

Drinking water for the GVDWS comes from protected watersheds called the Greater Victoria Water Supply Area (see Map 1). This CRD-owned and managed area, which is approximately 20,500 hectares in size, is located about 30 km northwest of Victoria and encompasses about 98% of the Sooke Lake, 98% of the Goldstream Lake and 92% of the Leech River catchment areas. The Goldstream and Sooke watersheds, with 11,000 ha area, comprise the active water supply area, whereas 9,500 ha of the Leech watershed are currently inactive and designated for future water supply.

Goldstream Service Area

The five reservoirs in the supply area have been used as a source of drinking water since the early 1900s. The Sooke Lake Reservoir, the largest of the reservoirs, is the primary water source for this system, supplying typically between 98% and 100% of Greater Victoria's drinking water. In 2022, Sooke Lake Reservoir supplied 100% of the source water. The four reservoirs in the Goldstream system (Butchart, Lubbe, Goldstream and Japan Gulch) are typically off-line and are used only as a backup water supply. Controlled releases from the Goldstream watershed provide water for salmon enhancement in the lower Goldstream River. The Leech River watershed does not yet contribute to the water supply for the GVDWS.

Water at the southern end of Sooke Lake Reservoir enters two of the variable depth gates in the intake tower and is screened through a stainless-steel travelling screen (openings of 0.5 mm). From the intake tower, the water passes through two 1,200 mm-diameter pipelines to the head tank and then through the 8.8 km-long, 2.3 m-diameter Kapoor Tunnel and then into 1,525 mm- and 1,220 mm-diameter pipes connecting the Kapoor Tunnel to the Goldstream Water Treatment Plant, where it is disinfected.

During occasional brief periods of use (typically used only when the Kapoor Tunnel is out of service for inspection by CRD staff), water in the Goldstream Watershed is released from Goldstream Reservoir and flows down the upper reaches of Goldstream River into Japan Gulch Reservoir. Water from Japan Gulch Reservoir enters the Japan Gulch intake tower through a low-level and a high-level intake, passing through a 14-mesh, stainless steel screen and is then carried in a 1,320 mm-diameter pipe into the Goldstream Water Treatment Plant.

Sooke Service Area

Drinking water for the Sooke Service Area is only supplied from Sooke Lake Reservoir but travels a different route. This water is passed through a 14.5 km-long (9 miles), 600 mm-diameter PVC and ductile iron pipe from a point just above the head tank to the Sooke River Road Water Treatment Plant. The Sooke Service Area has no backup water source.

2.2 Water Disinfection

The drinking water of the GVDWS is only treated by a multi-stage disinfection process. Further treatment such as filtration is not required due to compliance with the BC Ministry of Health requirements for a Filtration Exemption (Drinking Water Treatment Objectives for Surface Water Supplies in BC). A Filtration Exemption is also supported by meeting the USEPA requirements under the Surface Water Treatment Rules for unfiltered water systems. The disinfection process in the GVDWS is both simple and effective and uses two water treatment plants to provide disinfected drinking water to the two service areas.

Both water treatment plants utilize the same disinfection concepts and process methods. The Goldstream Water Treatment Plant uses delivered liquid sodium hypochlorite and liquid ammonia for the disinfection process and still has the old chlorine gas injection plant as a backup system. The Sooke River Road Water Treatment Plant generates sodium hypochlorite on site and injects delivered liquid ammonia to achieve the disinfection effect.

At both water treatment plants, the water passes through a three-part disinfection process in sequential order—two primary disinfection steps that provide disinfection of the water entering the system, followed by a secondary disinfection step that provides continuing disinfection throughout the transmission system and the distribution systems:

1. **UV Disinfection.** Ultraviolet (UV) disinfection provides the first step in the primary disinfection process (disinfection of the raw source water entering the plants) and inactivates parasites, such as *Giardia* and *Cryptosporidium* [3-log (99.9%) inactivation], as well as reducing the level of bacteria in the water. Based on the consistently applied high UV dosage at the Goldstream plant (50-90 mJ/cm²), it can be assumed that it is also effective in inactivating certain viruses (66-99% rotavirus inactivation).
2. **Free Chlorine Disinfection.** Free chlorine disinfection provides the second step in the primary disinfection process, using a free chlorine dosage of approximately 1.5-2.5 mg/L and a minimum of 10-minute (depending upon flow) contact time between the free chlorine and the water. The free chlorine disinfection step inactivates bacteria and provides a 4-log (99.99%) reduction of viruses.
3. **Ammonia Addition.** The secondary disinfection process consists of the addition of ammonia to form chloramines at a point downstream where the water has been in contact with the free chlorine for approximately 10 minutes or more. The ammonia is added at a ratio of approximately one part ammonia to four-five parts chlorine. In the water, these chemicals combine to produce a chloramine residual (measured as total chlorine). Monochloramine is the desired residual product, which typically represents 90% of the total chlorine when leaving the plants. This residual remains in the water and continues to protect the water from bacterial contamination (secondary disinfection), as it travels throughout the pipelines of the distribution system.

In East Sooke, at the Iron Mine Reservoir, the CRD re-chloramines the water to boost the chlorine residual provided to the extremities of that system. In Metchosin, at Rocky Point Reservoir, the CRD maintains another re-chloramination station, which has not been in service for approximately seven years. It has been deemed unnecessary for maintaining adequate residuals. Currently, there are no provisions to re-chlorinate the water at the far reaches of the distribution system on the Saanich Peninsula; however, emergency re-chlorination stations are provided at Upper Dean Park Reservoir and Deep Cove pump station, supplying Cloake Hill Reservoir. These re-chlorination stations are able to add free chlorine to the system if the total chlorine residuals were to drop to inadequate levels or during water quality emergencies.

2.3 CRD Transmission System

The CRD Transmission System comprises a number of large-diameter transmission mains and several connected supply storage reservoirs. Almost all of the supply storage reservoirs are on the Saanich Peninsula, leaving the Core Area municipalities without any supply storage. Using a series of large-diameter transmission mains, the CRD supplies treated water to its downstream customers. These large-diameter transmission mains are sorted into three sections:

1. Regional Transmission System, that supplies the Westshore and the Core Area municipalities, and up to the Saanich Peninsula boundary;
2. The Saanich Peninsula Trunk Water Distribution System that receives water at two points on the Saanich Peninsula from the Regional Transmission System and supplies it to the three municipalities and other customers on the Saanich Peninsula; and
3. The Sooke Supply Main.

2.3.1 Regional Transmission System

The CRD currently uses seven large-diameter transmission mains to supply drinking water to the municipal distribution systems in the Goldstream Service Area. These transmission mains range in diameter from 1,525 mm (60") down to 460 mm (18") and transfer water from the Goldstream Water Treatment Plant to the distribution systems listed in Section 2.4.

- Main #1 is a 1,067 mm-diameter (42"), cement mortar-lined, welded steel pipe that starts at the Humpback pressure regulating valve (PRV) below the Humpback Reservoir Dam and ends at the David Street vault. This transmission main provides water primarily to the City of Victoria, but also services portions of Saanich and the Westshore communities.
- Main #2 is a 780 mm-diameter (31") steel and ductile iron pipe, which starts at the Colwood overpass and runs primarily through View Royal, Esquimalt and Vic West along the Old Island Highway and Craigflower Road. Main #2 joins Main #1 at the David Street vault after crossing the Bay Street Bridge. This supply main is 7.6 km in length and provides water to View Royal, Victoria and Esquimalt.
- Main #3 is primarily a 990 mm-diameter (39") steel pipe that supplies water from the Humpback PRV and terminates at the CRD's Mt. Tolmie Reservoir. There are several sections in this line that include 1,220 mm-diameter (48") and 810 mm-diameter (32") pipes. The 810 mm-diameter pipe terminates at the Oak Bay meter vault. This supply main is 21.3 km in length and provides water to the Westshore communities, Saanich, Victoria and Oak Bay.
- Main #4, a high-pressure transmission main, is primarily a 1,220 mm-diameter (48") welded steel pipe that supplies water from the Goldstream Water Treatment Plant primarily to Saanich and the Saanich Peninsula. There are two small sections of 1,320 mm (52") and 1,372 mm (54") reinforced concrete pipe. This transmission main is 26.2 km in length and terminates near the Saanich-Central Saanich boundary, where it transfers water to the 762 mm (30") trunk main, which extends to McTavish Reservoir. It supplies the municipalities on the Saanich Peninsula and to Bear Hill Reservoir and Hamsterly pump station, near Elk Lake.
- Main #5 is a 1,524 mm-diameter (60") pipe that connects the Kapoor Tunnel via the Goldstream Water Treatment Plant to the Humpback PRV just below the old Humpback Reservoir dam. It is approximately 1.6 km in length and provides water to mains #1 and #3.
- Main #7 is a 610 mm-diameter (24") steel pipe that runs from Goldstream and Whitehead Road to Metchosin and Duke Road. It is 4 km in length and provides water to portions of Colwood, Langford and Metchosin.
- Main #8 is a 457 mm-diameter (18") steel and asbestos cement pipe that runs from Glen Lake School, primarily along Happy Valley Road to Happy Valley and Glenforest. It is 3.6 km in length and provides water to Langford, Colwood and Metchosin.

There are three active inter-connections between the high-pressure Main #4 and the low pressure mains #1 and #3, where water can be transferred from Main #4 to the other two mains via PRV stations. These stations are located at Watkiss Way, Millstream at Atkins, at Goldstream/Veteran's Memorial Parkway, and Burnside at Wilkinson Road. There is also a series of inter-connections between mains #1 and #3, with the major inter-connections being at Price, Station, Tillicum and Dupplin roads.

2.3.2 Saanich Peninsula Trunk Water Distribution System

The Saanich Peninsula Trunk Water Distribution System receives water at two points on the Saanich Peninsula from the Regional Transmission System and supplies it to four customers on the Saanich Peninsula: the municipalities of Central Saanich, North Saanich, Sidney and the Agricultural Research Station. Several First Nations distribution systems are supplied via a short proxy-connection by either the Central Saanich or North Saanich municipality.

The Saanich Peninsula Trunk Water Distribution System is comprised of 46 km of transmission mains, including the 762 mm (30") Bear Hill Main, the 400 mm (16") Martindale Main, the 300 to 400 mm (12"-16") Dean Park Main and the 250-500 mm (10-20") Saanich Peninsula mains.

The McTavish Reservoir is the terminus of the Regional Transmission System and Main #4, a 610 mm-diameter (24") concrete cylinder pipe). The Saanich Peninsula Trunk Water Distribution System begins with pipes from or bypassing McTavish Reservoir, which then continue further along the peninsula. In the vicinity of the airport at Mills Road, the main from McTavish Reservoir reduces from a 500 mm (20") to a 406 mm-diameter (16") asbestos cement pipe that terminates at the Deep Cove pump house. A dedicated 300 mm-diameter (12") ductile iron (DI) supply main from Deep Cove pump station transitions at the end of Hillgrove Road to 250 perm/PVC pipe just before it connects with Cloake Hill Reservoir. A 457 mm-diameter (18") AC pipe along Mills Road connects the trunk main to the northwest end of the Sidney Distribution System.

The CRD also operates five major pumping stations located at Hamsterly, Lowe Road, Dean Park Lower, Dean Park Middle and Deep Cove, along with one minor pumping station located at Dawson Upper Reservoir, that are all considered part of the transmission system.

2.3.3 Sooke Supply Main

The Sooke Drinking Water Service Area is supplied by Main #15, a 600 mm pipe (upper section, PVC; lower high-pressure section, ductile iron) that conveys raw water from Sooke Lake Reservoir to the Sooke River Road Water Treatment Plant. Main #15 feeds directly into the Sooke Distribution System downstream of the water treatment plant.

2.3.4 Supply Storage Reservoirs

A number of supply storage reservoirs are considered part of the transmission system, even though most of them technically operate as a distribution reservoir with all of its typical functions: balancing, fire and emergency storage.

The only CRD-owned and operated transmission system storage reservoir in the Regional Transmission System is:

- Mt. Tolmie Reservoir, a two-cell concrete in-ground reservoir, 27,300 m³ (6 M gallon), located on Mt. Tolmie, at the terminus of Main #3 near the Oak Bay-Saanich boundary.

Haliburton Reservoir, a one-cell concrete in-ground reservoir, 22,700 m³ (5M gallon), located off Haliburton Road in Saanich, has been disconnected from the system (off Main #4) and is empty. It is anticipated that this reservoir will not be used for drinking water purposes again.

The CRD-owned and operated transmission system storage reservoirs in the Saanich Peninsula Trunk Water Distribution System are:

- Bear Hill Reservoir, a two-cell concrete above-ground reservoir, 4,546 m³ (1M gallon), located on Bear Hill in Saanich.
- Cloake Hill Reservoir, a one-cell, 4,546 m³ (1M gallon) reservoir located on Cloake Hill in North Saanich.
- Dawson Upper Reservoir, a one-cell, 455 m³ (100,000 gallon) reservoir located off Benvenuto Avenue in Central Saanich.
- Dean Park Lower Reservoir, a two-cell concrete above-ground reservoir, 4,546 m³ (1M gallon), located beside Dean Park Road in North Saanich.
- Dean Park Middle Reservoir, two cylindrical concrete above-ground tanks, 2,730 m³ (600,000 gallon), located near the bottom of Dean Park in North Saanich.
- Dean Park Upper Reservoir, a two-cell concrete partly in-ground reservoir, 4,546 m³ (1M gallon), located near the top end of Dean Park in North Saanich.
- McTavish Reservoir, a two-cell concrete in-ground reservoir, 6,820 m³ (1.5M gallon), located on the south side of McTavish Road in North Saanich.

2.4 Distribution Systems

The GVDWS contains eight individual distribution systems. Six distribution systems are separately owned and operated by the municipalities of Central Saanich, North Saanich, Oak Bay, Saanich, Sidney and Victoria. Victoria owns and operates the distribution system in Esquimalt. Two distribution systems are owned by the CRD and operated by the CRD Integrated Water Services Department. These latter two systems include the combined distribution system in the Westshore communities of Langford, Colwood, Metchosin, View Royal and a small portion of the Highlands, and a separate system supplying water to Sooke and parts of East Sooke. Each distribution system owner/operator is defined as a water supplier and is responsible for providing safe water to their individual customers and meeting all the requirements under the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*.

2.4.1 Juan de Fuca Water Distribution System – CRD

In 2022, water was supplied to the Juan de Fuca Water Distribution System primarily from mains #1 and #3. In this report, the Juan de Fuca Water Distribution System does not include Sooke. For Sooke/East Sooke, see section 2.4.2 Sooke/East Sooke Distribution system below. Parts of Langford and View Royal were supplied from Main #4. The development at Bear Mountain in Langford was supplied by Main #4. The Westhills development, serviced by its own privately-operated distribution system, was supplied via mains #1 and #3. In the Juan de Fuca Water Distribution System, water flowed generally in a northerly and southerly direction away from the supply mains. The federal William Head Institution and the Beecher Bay meter vault are located at the southern extremities of this system.

The Juan de Fuca Water Distribution System includes the following distribution reservoirs:

- Bear Mountain Reservoir #1, a two-cell, 1,250 m³ (275,000 gallon) reservoir located on the lower slopes of the Bear Mountain development in Langford.
- Deer Park Reservoir, a one-cell, 1,657 m³ (365,000 gallon) reservoir located downstream of Rocky Point Reservoir re-chloramination station near the extremity of the water system off of Deer Park Trail in Metchosin (new in 2022).

- Fulton Reservoir, a two-cell, 4,580 m³ (1,007,459 gallon) reservoir located at the end of Fulton Road in Colwood.
- Peacock Reservoir, a two-cell, 583.8 m³ (128,420 gallon) reservoir located north of the Trans-Canada Highway off of Peacock Place in Langford.
- Rocky Point Reservoir, a three-cell, 546 m³ (120,000 gallon) reservoir located near the end of Rocky Point Road in Metchosin.
- Skirt Mountain Reservoir, a three-cell, 6,525 m³ (1,435,300 gallon) reservoir located near the top of Skirt Mountain in the Bear Mountain development in Langford.
- Stirrup Place Reservoir, a two-cell, 242 m³ (53,300 gallon) reservoir located off of Stirrup Place Road in Metchosin.
- Walfred Reservoir, a three-cell, 560 m³ (123,180 gallon) reservoir located on Triangle Mountain in Colwood.

2.4.2 Sooke/East Sooke Distribution System – CRD

The Sooke/East Sooke Distribution System begins downstream of the Sooke River Road Water Treatment Plant, at the end of Main #15 on Sooke River Road, where the ammonia storage and metering building is located. The primary water supply main to the community follows Sooke River Road downstream and splits at Milne's Landing going east toward Saseenos and west toward the central area of Sooke. Two underwater pipelines across Sooke Basin supply East Sooke. Sunriver Estates came on-line in 2006 and is serviced by a 300 mm (12") pipeline on Phillips Road and the two-cell concrete Sunriver Reservoir. In 2020, the water main along West Coast Road was extended to connect the formerly self-sufficient Kemp Lake Waterworks District to the Sooke/East Sooke Distribution System. At this most western extremity of the Sooke/East Sooke Distribution system, the CRD now supplies bulk water to the Kemp Lake District. The CRD infrastructure ends with a meter station on West Coast Road before a Kemp Lake District-owned and operated pump station supplies their distribution system.

The Sooke/East Sooke Distribution System includes the following distribution reservoirs:

- Coppermine Reservoir, a one-cell concrete partly in-ground reservoir, 455 m³ (100,000 gallon), located off of Coppermine Road in East Sooke.
- Helgesen Reservoir, a four-cell concrete partly in-ground reservoir, 6,973 m³ (1,533,850 gallon), located at the west end of Helgesen Road in Sooke.
- Henlyn Reservoir, a one-cell steel tank tower, 224 m³ (49,270 gallon), located off of Henlyn Drive in Sooke.
- Silver Spray Reservoir, a two-cell cylindrical concrete tank, 841 m³ (185,000 gallon), located off of Silver Spray Drive in East Sooke.
- Sunriver Reservoir, a two-cell concrete above-ground reservoir, 1,800 m³ (395,944 gallon) plus a single cell 1,355 m³ (300,000 gallon) steel tank (new in 2022), located off of Sunriver Way in Sooke.

2.4.3 Central Saanich Distribution System – District of Central Saanich

In 2022, drinking water was supplied to the Central Saanich Distribution System via 10 pressure zones (seven off the Bear Hill main and three off the Martindale Valley main). The Bear Hill main supplied the Tanner Ridge area by direct feed, the central area in one pressure zone through three PRVs, the Saanichton area in two pressure zones through two PRVs, the Brentwood Bay area, and the Tsartlip First Nation through a PRV. Five smaller pressure zones served the rest of Central Saanich. Dawson Upper

Reservoir (CRD-owned and operated) supplied a small area of higher elevation residences in Brentwood Bay. Martindale metering station supplied an agricultural area in the southeast corner of the municipality. The Island View Road area was supplied by the Lochside metering station. The Mount Newton metering station provided water to the northeast corner and to the Tsawout First Nation lands. A municipally-owned pump station on Oldfield Road serviced a small area in the southwest corner.

Bear Hill Reservoir (CRD-owned and operated) has the largest service population in Central Saanich, providing approximately 80% of the Central Saanich's water. It is the primary supply to most of Central Saanich (south of Haldon Road), including Brentwood Bay.

The Central Saanich Distribution System has technically no balancing, fire or emergency storage, but relies on the CRD transmission system infrastructure to provide this. One CRD-owned reservoir (Dawson Upper) in Central Saanich, that is considered part of the transmission system, functions as a distribution reservoir for the Central Saanich Distribution System.

2.4.4 North Saanich Distribution System – District of North Saanich

In 2022, drinking water was supplied to the North Saanich Distribution System from a number of points along the Saanich Peninsula Trunk Water Distribution System. This included Dean Park via the Lowe Road pump station, Dean Park pump stations and Dean Park Reservoirs (all CRD-owned and operated), Deep Cove/Lands End area via connections upstream of the Deep Cove pump station, Cloake Hill Reservoir via Deep Cove pump station (all CRD-owned and operated), and Swartz Bay. In the North Saanich Distribution System, Cloake Hill Reservoir (CRD-owned and operated) was the largest pressure zone. Water flowed generally in an easterly direction through the Dean Park pressure zone, northwest into the Deep Cove/Lands End area and northeast to the Swartz Bay area. Dean Park Upper Reservoir (CRD-owned and operated) supplied a small portion of the Dean Park Estates.

The North Saanich Distribution System has technically no balancing, fire or emergency storage, but relies on CRD transmission system infrastructure to provide this. Several CRD-owned reservoirs in North Saanich, that are considered part of the transmission system, function as distribution reservoirs for the North Saanich Distribution System.

North Saanich provides water to the Greater Victoria Airport Authority via the water main on the south side and the east side of the airport. As water quality in the airport distribution system falls under federal jurisdiction, it was not monitored by the CRD in 2022 and is, therefore, not included in this report.

2.4.5 Oak Bay Distribution System – District of Oak Bay

In 2022, drinking water was supplied to the Oak Bay Distribution System at Lansdowne and Foul Bay roads from Main #3. The water flowed in a west to east direction across Lansdowne with north and south branches. Oak Bay conveys water via a 406 mm main, which crosses Oak Bay diagonally from northwest to southeast. Water was distributed from the north end to the south end via the 406 mm main. Oak Bay has an outer loop flow on Beach Drive to the Victoria boundary. The Oak Bay Distribution System has no balancing, fire or emergency storage and the CRD transmission system infrastructure has limited provisions for this.

Oak Bay used four local pressure zones supplied by booster pumps. Sylvan Lane pump station supplied the Barkley-Sylvan area; Plymouth supplied the north Henderson area; Foul Bay supplied the south Henderson area; and Uplands pump station (seasonal) supplied the Uplands area. There are two inter-connections with the Victoria/Esquimalt Distribution System, which are normally closed, but can be used in emergencies.

2.4.6 Saanich Distribution System – District of Saanich

In 2022, drinking water was supplied to the Saanich Distribution System at a number of points from the CRD's transmission mains. Water was supplied from Main #1 at Dupplin, Wilkinson and Marigold, Holland/Burnside, and Admirals/Burnside; from Main #3 at Douglas, Tillicum, Admirals, Shelbourne, Richmond, Foul Bay, Mt. Tolmie and Maplewood pump house; and from Main #4 at Burnside, Blue Ridge,

Roy Road, Markham, Layritz, Cherry Tree Bend and Sayward. In the Saanich Distribution System, water flowed generally in a northerly direction from mains #1 and #3 and both east and west from Main #4.

There are four major pumping systems in the Saanich Distribution System. Maplewood pumps water north from Main #3, ending in the Gordon Head area. Cherry Tree Bend pumps from Main #4 to Wesley Reservoir and the west central high elevation area. The Mt. Tolmie/Plymouth pump station pumps water from Main #3 and the CRD Mt. Tolmie Reservoir to Saanich's Mt. Tolmie Reservoir and the Gordon Head area via a 610 mm-diameter (24") main.

Water from Sayward supplies the north end of the Saanich Distribution System via Main #4 with a southerly flow through Cordova Bay. Saanich also has a number of other small pressure zones controlled by pump stations.

The Saanich Distribution System includes some storage for balancing, fire and emergency purposes. The following distribution reservoirs are owned and operated by Saanich:

- Hartland Reservoir, a one-cell, 769 m³ (170,000 gallon) reservoir located on Hartland Road in Saanich. This new one-cell steel tank reservoir was constructed in 2020 to replace the smaller old reservoir.
- Mt. Tolmie Reservoir (Saanich), a one-cell, 4,545 m³ (1M gallon) reservoir located on the east side of the summit of Mt. Tolmie near Cromwell Reservoir in Saanich.
- Rithet Reservoir, a one-cell, 16,807 m³ (3.7M gallon) reservoir located at the end of Perez Drive in Broadmead in Saanich.
- Wesley Reservoir, a two-cell, 3,182 m³ (700,000 gallon) reservoir located at the end of Wesley Road on Haliburton Ridge in Saanich.

2.4.7 Sidney Distribution System – Township of Sidney

In 2022, drinking water was supplied to the northern portion of the Sidney Distribution System from the 457 mm CRD transmission main on Mills Road from upstream of the Deep Cove pump station. The southern portion of the distribution system is supplied from a 300 to 400 mm ductile iron main that is connected to the CRD transmission system and McTavish Reservoir. Within the Sidney Distribution System, water flowed generally from the west via Mills Road and from the south via McTavish Reservoir and met in the middle of the distribution system, with approximately 60% of the water coming from the Mills Road supply.

The Sidney Distribution System has no balancing, fire or emergency storage, but rather relies on the CRD transmission system infrastructure to provide this.

2.4.8 Victoria/Eskwimalt Distribution System – City of Victoria/Township of Esquimalt

Note: The City of Victoria also owns and operates the Water Distribution System in the Township of Esquimalt.

In 2022, drinking water was supplied to the Victoria/Eskwimalt Distribution System from mains #1 and #2 at David Street/Gorge Street and David Street/Rock Bay Avenue. From these supply points, the system divides into several smaller looped water mains within the distribution system. Water was also supplied to Victoria from Main #3 at Cook Street/Mallek Crescent, Somerset Street/Tolmie Avenue, Douglas Street/Tolmie Avenue and Shelbourne/North Dairy. In general, water flows from a north to south direction.

Water was supplied at multiple locations to Vic West and Esquimalt from Main #2. These locations include Tyee Road/Bay Street, Burleith Crescent/Craigflower Road, Garthland Road/Craigflower Road and Admirals Road/Maple Bank Road.

The Victoria/Eskwimalt Distribution System has no balancing, fire or emergency storage and the CRD transmission system infrastructure has limited provisions for this.

3.0 MULTIPLE BARRIER APPROACH TO WATER QUALITY

The CRD and the municipalities that operate their distribution systems use a multiple barrier approach to prevent the drinking water in the GVDWS from becoming contaminated. Multiple barriers can include procedures, operations, processes and physical components. In a drinking water system, any individual contamination barrier used in isolation has an inherent risk of failure and may result in contamination of the drinking water. However, if a number of individual barriers are used together in combination with each other and, especially if they are arranged so that they complement each other, these multiple barriers are a very powerful means of preventing drinking water contamination. All CRD-owned and operated, and most other large drinking water utilities, use the multiple barrier approach to prevent drinking water contamination. The exact types and applications of barriers are unique for each system, to address the system-specific risks.

The following barriers are used in the GVDWS to prevent the drinking water from becoming contaminated:

1. **Good Water System Design.** Good water system design is one of the preeminent barriers to drinking water contamination, as it allows all of the other components within the water system to operate in an optimal fashion and does not contribute to the deterioration of the quality of the drinking water contained within the system. Good water system design includes such aspects as: drinking water treatment plants that are easy to operate; piping appropriately sized to the number of users being supplied; and the use of appropriate pipe materials. All new designs are designed by qualified professionals registered in BC, reviewed and approved by qualified CRD or municipal staff, and approved and permitted by a Public Health Engineer from the Island Health Authority. This acts as a multiple check on good system design.
2. **Source Water Protection.** The CRD uses what is considered the ultimate source water protection: ownership of the catchment (watershed) lands surrounding the source reservoirs. This land area is called the Greater Victoria Drinking Water Supply Area. Within this area, no public access, commercial logging, farming, mining or recreation is permitted, and no use of herbicides, pesticides or fertilizers is allowed. This source water protection barrier eliminates many of the organic and inorganic chemicals that can contaminate the source water and virtually eliminates the potential for human disease agents being present. Very few drinking water utilities in Canada and the United States can claim this type of protection. In addition, the CRD Watershed Protection Division operates a complete and comprehensive watershed management program that provides additional protection to the quality of Greater Victoria's source water.
3. **Water Disinfection.** The GVDWS is an unfiltered drinking water system that continues to meet the provincial, as well as the stringent United States Environmental Protection Agency (USEPA) criteria, to remain an unfiltered surface water supply. The treatment process consists of primary disinfection (ultraviolet light and free chlorine) of the raw source water entering the treatment plant, and secondary disinfection (chloramination) that provides a disinfectant residual throughout the transmission and distribution systems. Although the water treatment barrier used in Greater Victoria is not as rigorous as that provided by most drinking water utilities using a surface water supply, the microbiological quality of the source water is exceptionally good and the chief medical health officer for Island Health has approved this treatment process as providing safe drinking water for the public.
4. **Distribution System Maintenance.** All water suppliers in the GVDWS provide good distribution system maintenance, including activities such as annual water main flushing, hydrant maintenance, valve exercising, leak detection, and reservoir cleaning and disinfection. This barrier helps to promote good water quality within the distribution systems.
5. **Infrastructure Replacement.** The timely replacement of aging water system infrastructure is an important mechanism to prevent the deterioration of water quality in the pipes and provides a continual renewal of the water system. The CRD's water infrastructure replacement program is informed by its asset management system thereby ensuring that critical components are replaced before their end of service life.

6. **Well Trained and Experienced Staff.** All water system operators must receive regular training and be certified to operate water system components. In addition, the laboratory staff cannot analyze drinking water samples in accordance with the *BC Drinking Water Protection Regulation* unless the laboratory has been inspected by representatives of the BC Ministry of Health and issued an operating certificate. CRD and municipal staff meet these requirements.
7. **Cross Connection Control.** Cross connection control provides a barrier to contamination by assisting in the detection of conditions that have the potential to introduce contaminants into the drinking water from another type of system. Therefore, in cooperation with the other water suppliers, in 2005, the CRD implemented a regional Cross Connection Control Program throughout the GVDWS. 2008 saw the implementation of the first CRD Cross Connection Control Bylaw for the GVDWS. This bylaw was reviewed and updated last in 2019 to its current form as CRD Bylaw 4340.
8. **Water Quality Monitoring.** Rigorous water quality monitoring can be considered a barrier not only because it verifies the satisfactory operation of other barriers and detects contaminations quickly, but comprehensive monitoring data may also allow water suppliers to see trends and react proactively, before a contamination occurs. The CRD has designed and executes a comprehensive water quality monitoring program for the GVDWS that collects daily bacteriological samples across the entire region for compliance purpose (on CRD water infrastructure and in the municipal water distribution systems). This CRD monitoring program tests for water quality parameters beyond the legislated requirements to verify good drinking water quality in the GVDWS.

4.0 WATER QUALITY REGULATIONS

The CRD and the municipal water suppliers in the GVDWS must comply with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*. The regulation stipulates the following water quality and sampling criteria for water supply systems:

- No detectable *Escherichia coli* (*E.coli*) per 100 mL
- At least 90% of samples have no detectable total coliform bacteria per 100 mL and no sample has more than 10 total coliform bacteria per 100 mL
- 5,000-90,000 population served: one sample per month per 1,000 population served
- >90,000 population served: 90 + 1 samples per month per 10,000 in excess of 90,000 population served

In addition to the aforementioned water quality monitoring criteria by the *Drinking Water Protection Regulation*, as due diligence to ensure public safety and maintain public trust, the CRD Water Quality Monitoring Program also uses the much larger group of water quality parameters listed in the current version of the *Guidelines for Canadian Drinking Water Quality* (the Canadian guidelines) for compliance purposes. These limits are provided in Appendix A, tables 1 to 5, under the column titled 'Canadian Guidelines'. The water quality limits in the Canadian guidelines¹ fall into one of the following five categories:

1. **Maximum Acceptable Concentration.** This is a health-related limit and lists the maximum acceptable concentration (MAC) of a substance that is known or suspected to cause adverse effects on health. Thus, an exceedance of a MAC can be quite serious and requires immediate action by the water supplier.
2. **Aesthetic Objectives.** These limits apply to certain substances or characteristics of drinking water that can affect its acceptance by consumers or interfere with treatment practices for supplying good quality drinking water. These limits are generally not health related, unless the substance is well above the aesthetic objectives (AO).
3. **Parameters without Guidelines.** Some chemical and physical substances have been identified as not requiring a numerical guideline because data currently available indicate that it poses no health risk or aesthetic problem at the levels currently found in drinking water in Canada. These substances are listed as 'No Guideline Required' in Appendix A, tables 1 to 5.
4. **Archived Parameters.** Guidelines are archived for parameters that are no longer found in Canadian drinking water supplies at levels that could pose a risk to human health, including pesticides that are no longer registered for use in Canada, and for mixtures of contaminants that are addressed individually. Some of these parameters are still being included in the current water quality monitoring program because the analytical laboratory includes them in their scans. These parameters are listed as 'Guideline Archived' in Appendix A, tables 1 to 5.
5. **Operational Guidance.** The limit was established based on operational considerations and listed as an operational guidance value. For example, the limit for aluminum is designed to apply only to drinking water treatment plants using aluminum-based coagulants.

It should be noted that not all of the water quality parameters analyzed by the CRD Water Quality Monitoring Program have the Canadian guidelines' limits, since some of these parameters are used for operational purposes. Where the Canadian guidelines are silent for a particular parameter, the limit for that parameter is left blank in Appendix A, Tables 1 to 5.

¹ (see: <https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/water-quality/guidelines-canadian-drinking-water-quality-summary-table.html>)

In addition to the Canadian provincial regulations and federal guidelines, on a voluntary basis, the CRD also complies with most of the USEPA rules and regulations. Some of the limits in the USEPA rules are used as the basis for the CRD's water treatment goals.

The GVDWS, as an unfiltered surface water system, must meet the provincial Drinking Water Treatment Objectives for Surface Water Supplies in BC, which includes similar criteria as the conditions for filtration exemption in the Canadian guidelines. In summary, the applicable criteria are:

- 4-log inactivation of viruses (met with chlorination)
- 3-log removal or inactivation of parasites (*Giardia* and *Cryptosporidium*) (met with UV disinfection)
- Two forms of disinfection (UV and chlorination)
- Water entering disinfection facilities has average daily turbidity <1 nephelometric turbidity unit (NTU) and not more than two days/year with an average daily turbidity of >5 NTU
- No *E. coli* or total coliform in treated water
- A watershed control program to minimize fecal, parasite and viral contamination of source water (in place)
- Detectable disinfectant residual in distribution system
- *E. coli* in source water \leq 20 CFU/100 mL

5.0 OPERATIONAL CHANGES AND EVENTS – CRD SYSTEMS

5.1 Use of Goldstream Water

In 2022, the Goldstream Supply System was not used at all. A Kapoor Tunnel inspection project, necessitating a switch to the Goldstream Supply System, was scheduled for early December but had to be cancelled due to adverse weather conditions that could have resulted in increased turbidity in the raw water supply. It is anticipated that the Kapoor Tunnel inspection project will be delayed until the fall of 2023 and the Goldstream System will only be used for emergency purposes until then.

5.2 Weather Conditions

Figure 1 shows the Sooke Lake Reservoir water levels in 2022 compared to previous years. As has been typical for most years prior to 2022, the reservoir was already at full capacity at the beginning of January. But it remained 100% full until May 10, which is approximately a month later than in previous years. With unusually wet and cool weather until early July, the reservoir level only receded to 95% capacity at that time, which is approximately 1 m higher than in prior years. With drier and warmer weather after that, the reservoir levels continuously receded throughout the summer and fall and into December. The typical fall rains in October and November did not materialize in 2022 and it was not until the middle of December 2022 when the reservoir recharge began, driven by a mix of rainfall and snowmelt. On December 31, the reservoir was still only at 83% capacity, the fifth lowest year-end level since the dam was raised in 2003.

Both extreme weather events in 2022, first the unusually cold and wet spring and early summer, and then the prolonged drought in the fall did not have any measurable adverse water quality impacts on Sooke Lake Reservoir. The prolonged high water temperatures in the fall caused chlorine residual levels in some areas in the Juan de Fuca Water Distribution system (Rocky Point to Beecher Bay) to drop to very low levels, and CRD operators conducted extra main flushing and investigations.

While heavy snowfall combined with freezing temperatures just before the holiday season at the end of December brought operational challenges through frozen pipes and inaccessibility of facilities, the source water quality in Sooke Lake Reservoir and the treated drinking water quality was not measurably affected by the weather event.

5.3 Chlorine Dosage

In 2022, the CRD Integrated Water Services Department did make some minor adjustments to the chlorine dosage rate at both plants, based on daily or weekly monitoring results. The objective for the chlorine dosage has been to dose sufficiently for adequate primary and secondary disinfection, while minimizing the amount of chemicals added. Critical for proper primary disinfection is achieving the required CT (Concentration x Contact Time), which was consistently achieved in 2022 at both plants. Critical for adequate secondary disinfection is achieving a high ratio of Total Chlorine/Monochloramine. The new hypochlorite plant at the Goldstream Water Treatment Plant consistently achieved ratios of 90%. The Sooke River Road Water Treatment Plant generally achieved ratios of 85-95%.

5.4 CRD Reservoir Maintenance

CRD water system operators have followed the reservoir cleaning schedule developed through the reservoir review project led by the CRD Water Quality Operations Section. This schedule is based on a thorough water quality data review for each CRD-owned and operated transmission or distribution reservoir and is regularly updated based on new data and information. Following this cleaning schedule has resulted in improved water quality conditions and operational efficiencies in a number of reservoirs.

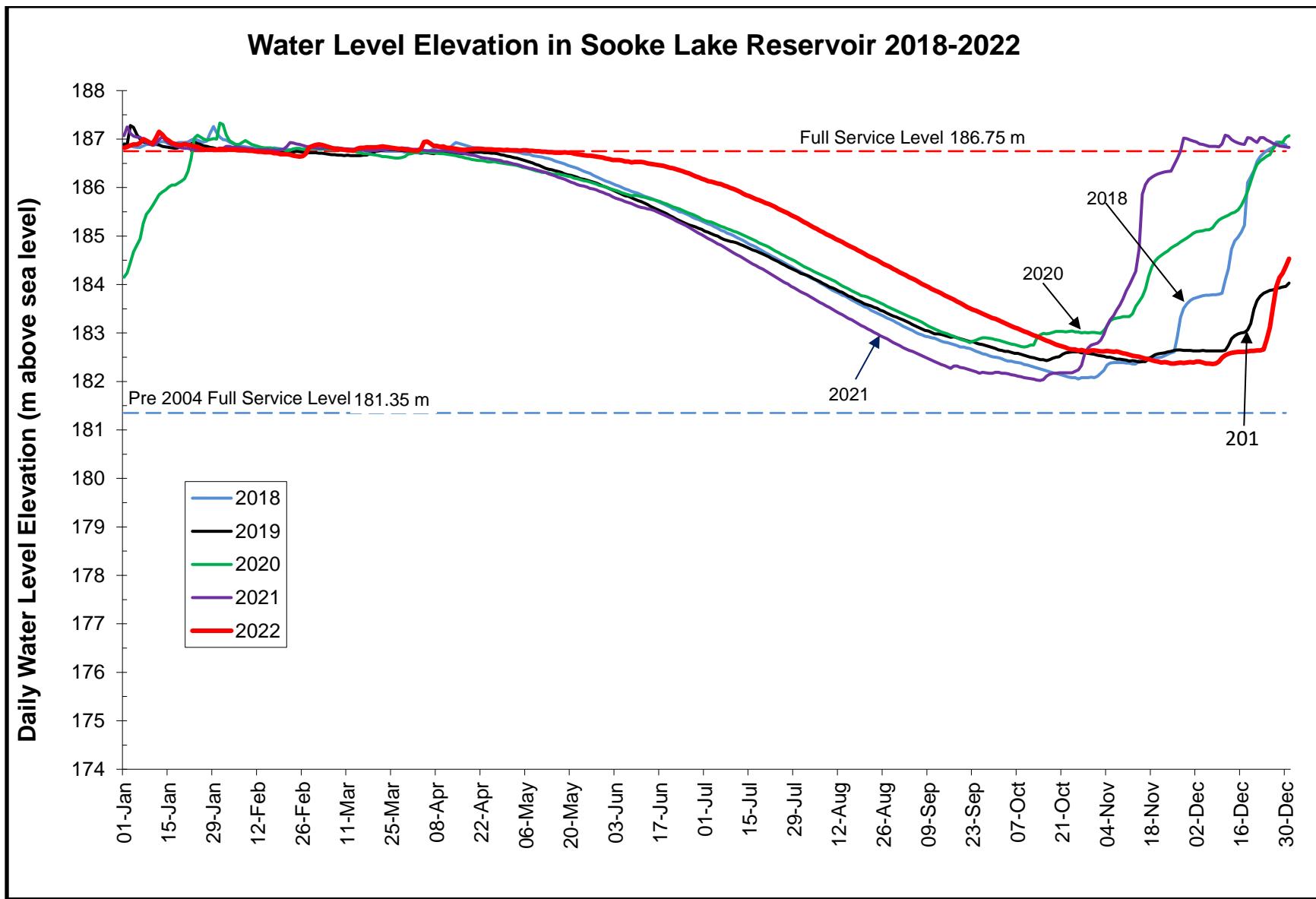


Figure 1 Water Level Elevation in Sooke Lake Reservoir 2018-2022

6.0 WATER QUALITY MONITORING

The Water Quality Program, as delivered by the Water Quality Operations, the Cross Connection Control, and the Laboratory Services sections (all within the CRD Parks & Environmental Services Department), is responsible for the collection, analysis and reporting of water quality information in all CRD-owned and operated portions of the GVDWS from the source reservoirs to the point of delivery (typically the water meter) to each consumer. While the municipal water suppliers are responsible for water quality and any potential corrective measures within their particular distribution system, CRD staff provide water sampling and testing for regulatory compliance monitoring to these municipalities.

The CRD Water Quality Program has dedicated professional staff who are trained to collect water samples from source water and treated water sampling locations across the region, as well as technical staff trained to analyze and interpret water quality data in support of operational decisions. The CRD Water Quality Laboratory is certified for a number of water quality test methods and is staffed with highly-trained laboratory technicians. The CRD Aquatic Ecology Laboratory has professional staff specialized to analyze phyto- and zooplankton in lake water, periphyton communities in lakes and streams, to test for cyanotoxins and understand the source water limnology. The Cross Connection Control Section includes certified plumbing and cross connection control inspectors, as well as staff trained to process data in order to administer the requirements of the BC Building Code and the CRD Cross Connection Bylaw No. 3516.

6.1 CRD Water Quality Monitoring Program

The CRD Water Quality Monitoring Program consists of the following three components that provide direction for the collection and analysis of water quality samples from the water systems:

- **Compliance Monitoring:** The goal of the compliance monitoring is to ensure that water quality from source to consumer meets the relevant drinking water regulations and guidelines. The Island Health Authority, as the provincial regulator, has issued the CRD two operating permits (for CRD water infrastructure in the Goldstream Service Area and in the Sooke Drinking Water Service Area). These operating permits require, in addition to the water quality and sampling criteria, as per the *Drinking Water Protection Regulation*, continuous monitoring of turbidity. The CRD Water Quality Operations Section, therefore, conducts bacteriological monitoring on the raw water entering the treatment plants, treated water after leaving the plants, at the first customer sampling locations, sampling locations on the large transmission mains and sampling locations in the CRD-owned distribution systems, including distribution reservoirs. Bacteriological samples are collected at a frequency that meets the regulatory requirements and provides a consistent and day-to-day system-wide water quality oversight. Continuous turbidity monitoring, as per operating permits, is accomplished by on-line turbidity meters (monitored via Supervisory Control and Data Acquisition) at each water treatment plant (at each plant: two analyzers in line to provide redundancy). Part of the compliance monitoring program are the services provided by the CRD to the municipal water suppliers where CRD staff collect and analyze bacteriological samples from inside the municipal water distribution systems, report monthly results on the CRD website and include the results and findings in this annual report.

The Island Health Authority has granted the GVDWS an exemption from filtration treatment, the conventional water treatment requirement for surface water source users in BC, based on the evidence of year-round high source water quality. However, it is expected that the CRD closely monitors a number of water quality parameters, in addition to the criteria listed in the regulations and in the operating permits. As a result, the CRD has included in its compliance monitoring program a number of water quality parameters that are regularly tested on the raw, as well as on the treated water to verify compliance with the Canadian guidelines and USEPA rules and regulations. Such parameters in the raw water include parasites, organic and inorganic compounds, including metals and various water chemistry and physical parameters. On the treated water, these include disinfection byproducts, metals and water chemistry and physical parameters that are used to verify good drinking water quality.

- **Aquatic Ecology Monitoring:** The goal of the aquatic ecology monitoring is to understand and document the components that affect or may affect the natural cycles of the source streams and reservoirs. The source reservoirs and streams in the Greater Victoria Water Supply Area (see Map 1) are monitored according to the recommendations by the CRD Aquatic Ecology Section, as there are no legislated requirements for either sampling frequency or parameter selection for these water bodies. It is, however, important for the CRD, as the supplier of unfiltered surface water, to have a comprehensive understanding of the natural processes taking place in the source waters and potential implications for the drinking water quality in the GVDWS. Depending on the season, the source lakes and their tributaries are sampled at a frequency ranging from quarterly to weekly for parameters, such as algal species, distribution and concentrations, zooplankton species and concentrations, chlorophyll-a concentrations and nutrient concentrations. Additional samples may be collected based on risk management decisions, for instance, as a response to severe weather conditions or unusual observations.
- **Operational Water Quality Monitoring:** The CRD Water Quality Monitoring Program provides an audit function on all water quality-related aspects of the GVDWS, including performance monitoring of the treatment plants and distribution system. Specific sampling and testing occurs to support operational decisions by the CRD and municipal system operators. Daily field tests of chloramine residual concentrations are conducted to verify the efficiency of the secondary disinfection region-wide. A number of qualitative (e.g., taste and odour) and quantitative tests [e.g., heterotrophic plate count (HPC), turbidity] are regularly performed on samples across the region to verify the need for specific system maintenance. The customer inquiry program is also part of this monitoring program component, as a water quality complaint or observation by the public can give clues to ongoing system issues or identify water quality risks in the system. Water samples are occasionally collected from taps within individual houses or facilities, in response to inquiries from customers about the quality of water being received at their address.
- **Drinking Water Safety Plan:** In 2018, the CRD Water Quality Operations Section developed a Drinking Water Safety Plan, following the principle of a method developed by the Alberta Ministry of Environment for all drinking water systems in Alberta. This plan is a comprehensive water quality risk assessment and registry in the GVDWS. Identified risks have been documented and are being tracked as the CRD Integrated Water Services Department addresses them. At the end of 2022, the Drinking Water Safety Plan included 23 High Risks and 171 Moderate Risks to water quality; 23 and 177 respectively in 2021, for comparison.

6.2 Sampling Plans

The efforts to collect the required number of samples for the CRD Water Quality Monitoring Program are organized in three distinct sampling plans:

1. The **Watershed Sampling Plan** manages the sampling frequency, schedule and parameter list for the source water lakes and tributaries and is based on an up-to-date risk to water quality assessment. Sooke Lake Reservoir is sampled from a boat at three dedicated lake sampling stations from weekly in the summer to bi-weekly in the winter (see Figure 2). Goldstream Reservoir is sampled monthly from a boat at two dedicated lake sampling stations. Tributary creeks to Sooke Lake Reservoir are sampled monthly near their mouths. Significant tributary lakes in the Sooke Lake watershed, as well as Butchart Lake and Japan Gulch Reservoir in the Goldstream System, are sampled quarterly by boat. The Leech watershed is currently sampled monthly in four different locations, following a more comprehensive sampling/testing project in 2019-2020.
2. The **Treatment Plant Sampling Plan** includes the daily samples collected at the Goldstream Water Treatment Plant and the two first customer locations (for mains #4 and #5), the weekly samples collected at the Sooke River Road Water Treatment Plant and the Sooke first customer location. This plan is designed to verify adequate treatment at both treatment plants and to detect unusual water quality conditions, before they spread across the systems.

4. The **Transmission and Distribution System Sampling Plan** is a designed sampling plan that manages sampling at approximately 220 permanent sampling stations across the GVDWS, including all municipal systems. These permanent sampling stations are installed on transmission mains, storage reservoirs, distribution mains, booster pump stations and meter or valve stations. The plan is designed to achieve an evenly distributed two-week rotation for most sampling stations, while providing a representative snapshot of the entire Goldstream Service Area on each business day. The Sooke Drinking Water Service Area is sampled once per week. Samples collected on the daily runs, as part of this plan, are primarily used for compliance monitoring, but also for operational purposes.

When total coliform-positive bacteriological results are found in a CRD-owned system, CRD sampling staff resample those locations and, depending upon the situation, may direct CRD operators to flush the affected mains and/or drain and clean affected storage reservoirs. When total coliform-positive bacteriological results are found in a municipal system, the CRD sampling staff resample those locations and notify the municipal operators of the results. If a sample tests positive for *E.coli*, the Island Health Authority is notified immediately, and emergency response procedures are followed.

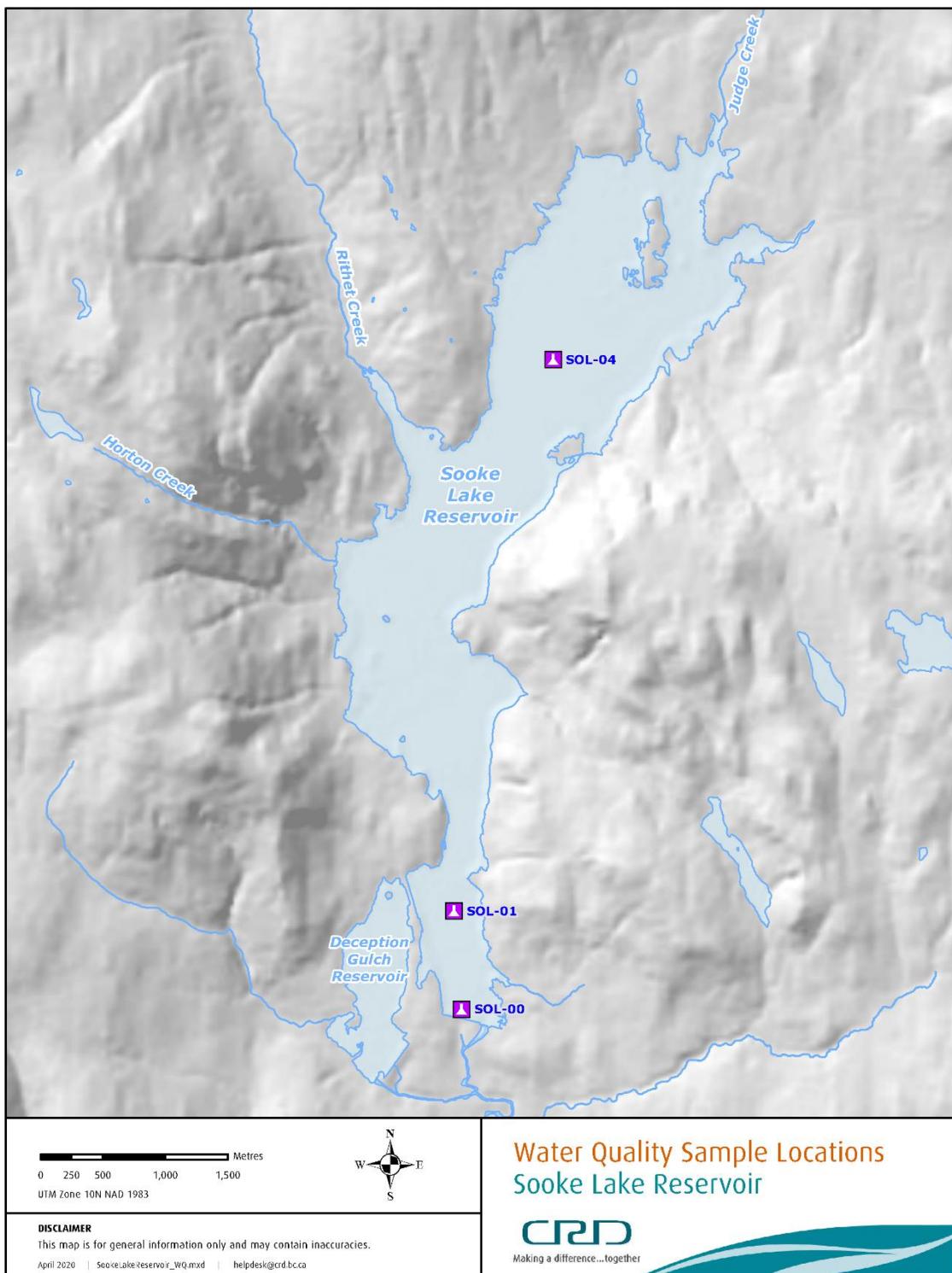


Figure 2 Sooke Lake Reservoir Water Sampling Stations

6.3 Bacteriological Analyses

A description of the bacteriological parameters used in the CRD Water Quality Monitoring Program, and the regulatory limits that were in place in 2022 for those parameters, are outlined below.

Total Coliform Bacteria

Total coliforms. Total coliforms are a group of bacteria found in high numbers in both human and animal intestinal (fecal) wastes and are found in water that has been contaminated with fecal material. Total coliform bacteria are also ubiquitous in the environment (water, soil, vegetation). Thus, in the absence of *E. coli*, the presence of total coliforms may indicate surface water infiltration or the presence of decaying organic matter. The total coliform bacteria group is used as an indicator for treatment adequacy and microbial conditions in drinking water systems because of its superior survival characteristics.

Test Method. In 2022, total coliform bacteria were analyzed at the CRD Water Quality Laboratory using the membrane filtration method and Chromocult Coliform Agar incubated at 36-38°C for 21-24 hours. Test results were reported as colony-forming units (CFU) per 100 millilitres (mL) of water. Methods employing defined substrate technology rely on the fact that coliforms possess the enzyme β -galactosidase, which cleaves a chromogenic substrate, thus releasing a chromogen (coloured compound) that can be measured. In compliance with regulations, the CRD Water Quality Monitoring Program tests for total coliforms to ensure treatment efficacy and to monitor intrusion of organisms into the system post-treatment.

Regulatory Limits. Based on the requirements in the *Drinking Water Protection Regulation* and the *Guidelines for Canadian Drinking Water Quality*, the maximum acceptable concentration for the GVDWS is summarized as follows:

- *No sample should contain more than 10 total coliform organisms per 100 mL.*
- *No consecutive sample from the same site should show the presence of coliform organisms.*
- *Not more than 10% of the samples based on a minimum of 10 samples should show the presence of coliform organisms.*

Escherichia coli

Escherichia coli (E. coli). *E. coli* is the only member of the total coliform group found exclusively in the feces of human beings and warm-blooded animals. Although most members of this species are considered harmless, some strains of *E. coli* can be pathogenic. The presence of *E. coli* in water indicates recent fecal contamination and the possible presence of intestinal disease-causing bacteria, viruses and protozoa. The absence of *E. coli* in drinking water generally indicates that the water is free of intestinal disease-causing bacteria.

Test Method. In 2022, *E. coli* were analyzed by the CRD Water Quality Laboratory using the membrane filtration method and Chromocult Coliform Agar incubated at 36-38°C for 21-24 hours. Test results were reported as CFU per 100 mL of water. The *E. coli* test measures bacteria possessing the enzymes β -galactosidase and β -glucuronidase.

Regulatory Limits. In disinfected drinking water, the maximum acceptable concentration of *E. coli* (both federal and provincial limits) is zero *E. coli* per 100 mL.

Heterotrophic Plate Count Bacteria

Heterotrophic Plate Count Bacteria. Heterotrophic plate count bacteria are used to monitor trends in water treatment and distribution systems. Under increasing nutrient conditions and/or a reduction in the concentration of chlorine residual, the heterotrophic bacteria are usually the first group to increase and provide an early warning of the potential growth of coliforms. The CRD Water Quality Monitoring Program uses heterotrophic plate count bacteria to monitor treatment efficacy at the disinfection plants and to track the decline in chlorine residuals in the distribution system and storage reservoirs.

Test Method. In 2022, heterotrophic plate count bacteria were analyzed by the CRD Water Quality Laboratory using membrane filtration onto R2A medium and incubated at 21-28°C for seven days. Heterotrophic bacteria can be measured in several different ways; in this test method, the low incubation temperature and long incubation time improves the recovery of stressed and chlorine-tolerant bacteria. Raw water samples and water leaving the treatment plant were analyzed for heterotrophic bacteria. In addition, treated water samples with low chlorine residual levels (below 0.2 mg/L) were also analyzed using this method.

Regulatory Limits. There is no federal or provincial regulatory limit for heterotrophic bacteria in drinking water. However, the US EPA Surface Water Treatment Rule considers 500 CFU/mL of heterotrophic bacteria as an indicator for a “detectable chlorine residual” when using membrane filtration onto Standard Methods Agar incubated at 35°C for 48 hours. Therefore, in the absence of a Canadian regulatory limit, the CRD Water Quality Monitoring Program uses the US EPA value as a monitoring criterion to trigger site-specific operational measures for assessing and mitigating drinking water quality.

6.4 Certification and Audits

To ensure that analytical testing is carried out to the highest possible standard, the CRD Water Quality Laboratory participates in several types of external quality assurance and quality control (QA/QC) programs, in addition to rigorous internal QA/QC procedures that are included as part of the methodology and are a normal component of good laboratory practice.

6.4.1 Certification

All laboratories analyzing drinking water samples for total coliforms and *E. coli* according to the Drinking Water Protection Act/Regulation are required by the Province of BC to be approved in writing by the Provincial Health Officer. Laboratory approval requires both an approval certificate and a proficiency testing certificate, as noted below:

- **Water Bacteriology Testing Laboratory Approval Certificate.** This certificate is issued by the BC Provincial Health Officer for bacteriological testing of drinking water in the Province of BC. This certificate is renewed every three years via an on-site inspection (audit) of the analytical laboratory.
- **Clinical Microbiology Proficiency Testing Program Certificate of Participation.** This certificate is issued by the Advisory Committee for Water Bacteriology Laboratories, which is operated by the Department of Pathology and Laboratory Medicine at the University of British Columbia. Satisfactory performance is required to maintain laboratory certification. Three rounds of proficiency tests are carried out per year.

6.4.2 Accreditation

In 2017, the CRD Water Quality Laboratory attained accreditation to the global ISO/IEC 17025 standard used by testing and calibration laboratories. The accreditation has management, quality, and technical requirements. Accreditation is maintained by successful reassessment every two years by an accrediting body (Canadian Association for Laboratory Accreditation; CALA) and satisfactory participation in an external proficiency testing program for all methods (two rounds per year). The CRD Water Quality Lab was last assessed in 2021 and the Lab will be reassessed in 2023.

7.0 WATER QUALITY RESULTS

The overview results of the 2022 CRD Water Quality Monitoring Program for the GVDWS are provided below. Water quality data are listed in Appendix A (tables 1, 2 and 3). Note that the median (middle value between the high and low) is used in these tables rather than the average value, as the median eliminates the effect of extreme values (very high or very low) on the average value and provides a more realistic representation of typical conditions.

7.1 Source Water Quality Results

Total Coliform Bacteria (TC). Similar to previous years, the raw (untreated) source water entering both plants exhibited generally very low concentration of total coliform bacteria, with some increased concentrations between July and October when the Sooke Lake south basin was destratified and, therefore, fully mixed with warm water. Compared to previous years, Sooke Lake Reservoir experienced average total coliform concentrations during the summer months with no concentration reaching the Operational Alert Level of 1000 CFU/100mL. No seiche-related total coliform spikes were recorded in 2022. The peak of the summer total coliform concentrations was slightly later than in previous years due to the cooler temperatures at the start of summer and the prolonged heat and drought during the fall season (Figure 3).

With 242 samples analyzed in 2022, the total coliform concentration ranged from 0-260 CFU/100 mL, with a median value of 6 CFU/100 mL (Appendix A, Table 1). The types of total coliforms present were not indicative of any particular type of contamination.

The United States Environmental Protection Agency (USEPA) *Surface Water Treatment Rule* for avoiding filtration has a non-critical total coliform criteria of maximum 100 CFU/100 mL at the 90th percentile of a six-month sample set. The 90 percentile of total coliform concentrations in the raw water between January and June 2022 was 8 CFU/100mL, and between July and December 2022, it was 160 CFU/100 mL. Therefore, the source water was compliant with this non-critical USEPA filtration exemption criteria in the first half of 2022 but not in the second half. This is a typical pattern for Sooke Lake Reservoir and indicates a vulnerability of the water quality with rising temperatures due to climate change.

***E. coli* Bacteria.** During three decades of monitoring bacteria within the GVDWS, it has been found that virtually 100% of the fecal coliform bacteria detected in the source water and the distribution system are *E. coli*. In 2022, as in previous years, the low detection of *E. coli* bacteria indicated that the raw water entering the Goldstream Water Treatment Plant from Sooke Lake Reservoir was good quality source water and complied with the primary criteria in the USEPA *Surface Water Treatment Rule* to remain an unfiltered drinking water supply (Figure 4).

In 2022, about 5.8% of the 241 samples collected from the raw source water contained *E. coli* and those that were positive for *E. coli* had levels well below 20 CFU/100 mL. The concentration ranged from 0-2 CFU/100 mL, with a median value of 0 CFU/100 mL. The low occurrence, as well as the low concentrations of *E. coli* bacteria in Sooke Lake, are in line with long-term historical bacteria concentrations. These results do not indicate a particular source of *E. coli* bacteria, but rather point to low levels of naturally occurring fecal matter in a healthy and unproductive aquatic ecosystem. The few sporadic *E. coli* hits are typically the result of the rainfall and runoff into Sooke Lake, which transported organic matter accumulated in the watershed to the lake. The lack of any extreme rainfall and runoff events during 2022 is likely the reason for even lower *E. coli* occurrences and concentrations (Figure 4). In years with a Kapoor Tunnel Inspection Project, a slight *E. coli* concentration increase in mid-December can be attributed to the supply from the Goldstream System. In 2022, the Goldstream System was not used as a drinking water source.

***Giardia* and *Cryptosporidium* Parasites.** In 2022, parasite samples were collected eight times per year, as part of the CRD's routine monitoring program. This sampling frequency was set after an evaluation of long-term data showed extremely low detection of these organisms. The eight parasite samples were collected from the raw water sampling location at the Goldstream Water Treatment Plant and shipped for analysis to an external laboratory. It should be noted that the efficiency of the analysis for detecting *Giardia*, and especially *Cryptosporidium*, is quite low (typically in the 15-25% range).

In 2022, no *Giardia* cysts and no *Cryptosporidium* oocysts were detected in all samples on the raw water entering the Goldstream Water Treatment Plant. The 10-year median value for total *Giardia* cyst and total *Cryptosporidium* oocyst concentrations is 0/100L; however, historical data shows that occasionally very low concentrations of parasites can be found in the raw water from Sooke Lake. While these are extremely low values for a surface water supply, the addition of UV disinfection provides assurance that no infective parasites can enter the GVDWS.

The treatment target specified by the Canadian federal and provincial regulations, as well as the USEPA *Surface Water Treatment Rule*, require 3-log (99.9%) parasite inactivation to meet the filtration exemption criteria for surface water systems. Both CRD disinfection facilities provide UV treatment that, in conjunction with the CRD's drinking watershed management concept, is able to meet these targets and, therefore, adequately protects the public from waterborne parasitic illnesses.

Raw Water Entering Goldstream Water Treatment Plant Total Coliforms, 2018-2022

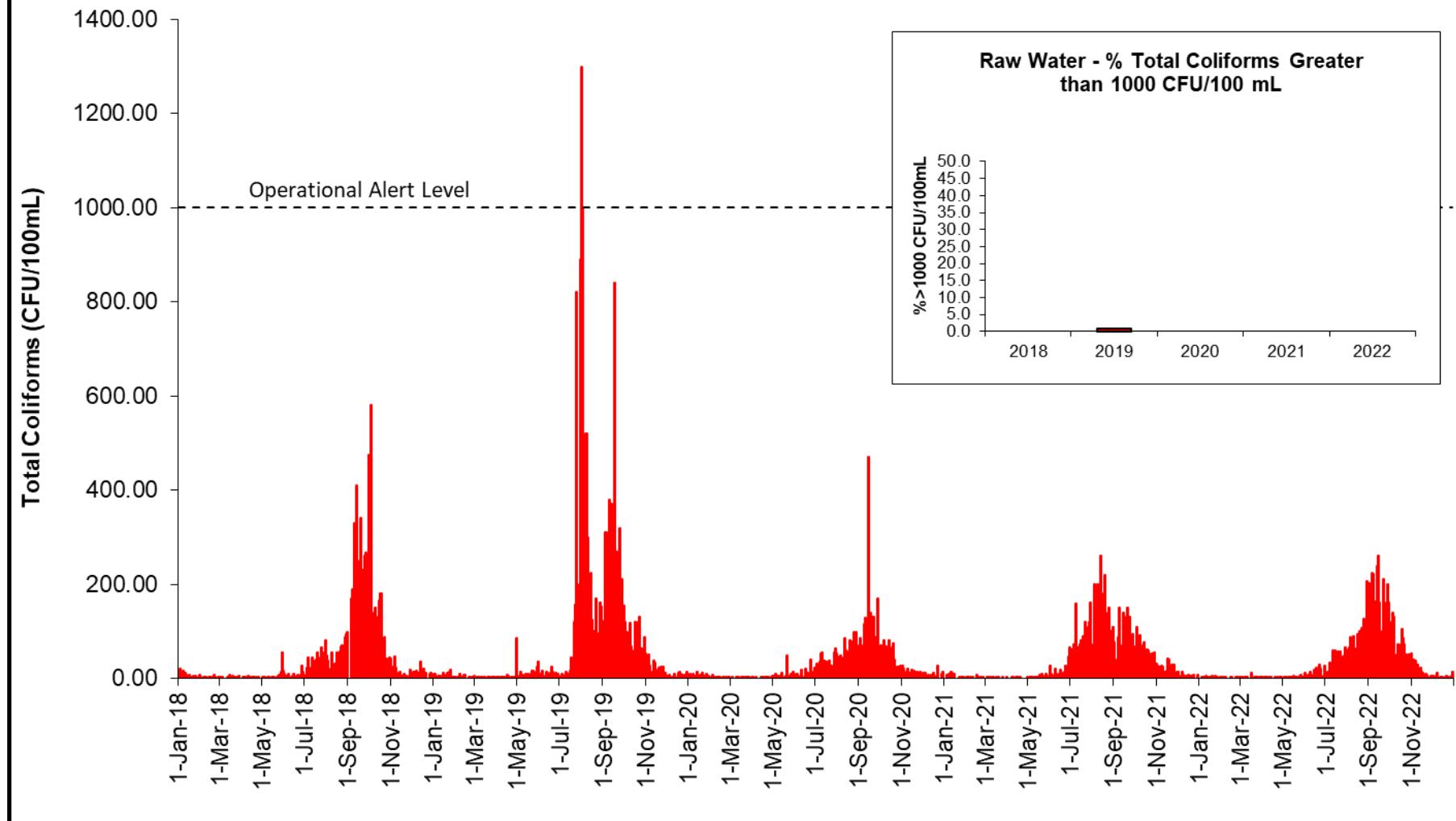


Figure 3 Raw Water Entering Goldstream Water Treatment Plant Total Coliforms 2018-2022

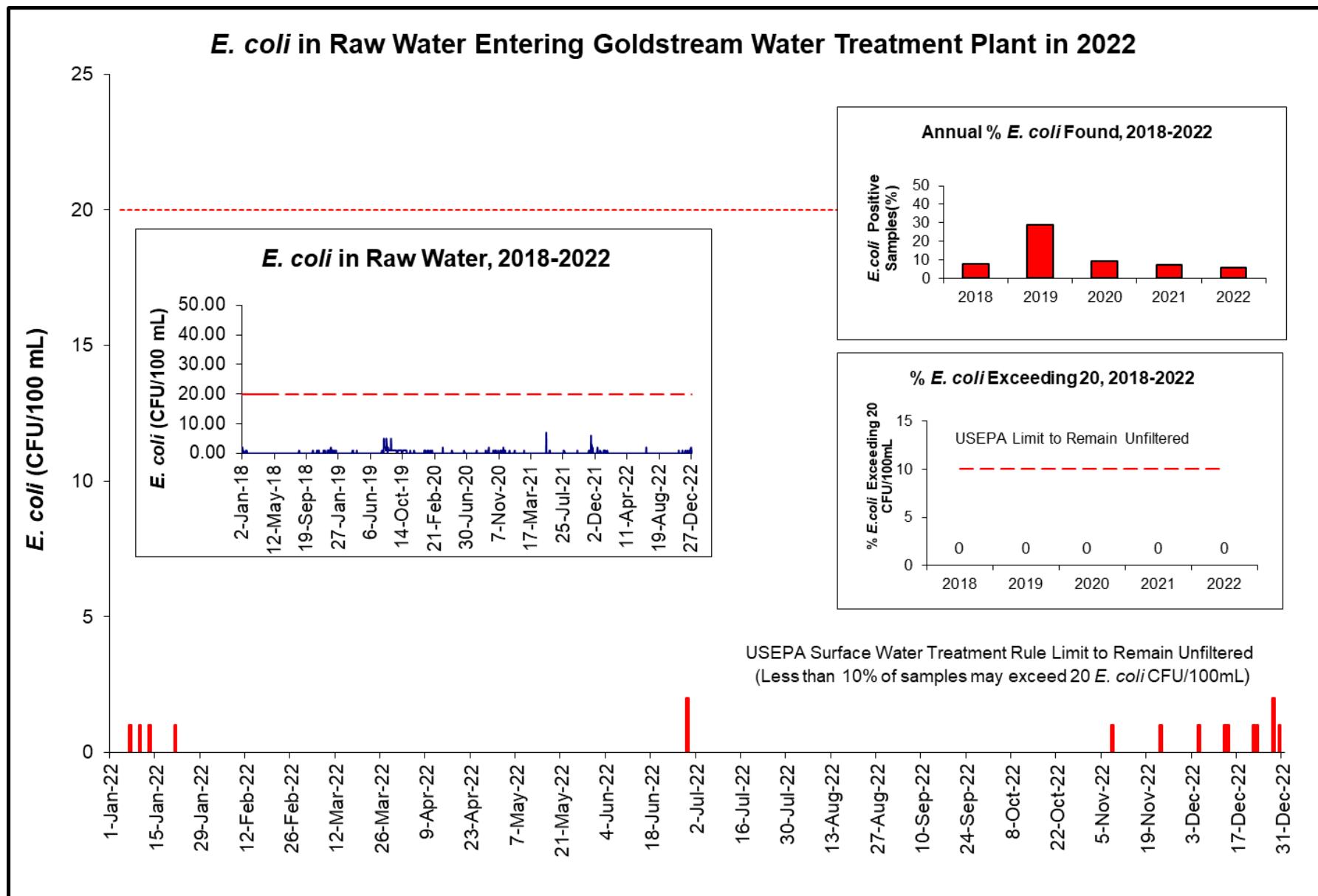


Figure 4 *E. coli* in Raw Water Entering Goldstream Water Treatment Plant in 2022

Algae – Sooke Lake Reservoir (SOL). In 2022, the algal dynamics were generally in line with the long-term trend. During the spring and summer, the algal density was slightly above average, with the typical spring peak occurring slightly earlier (Figure 5, Figure 6, Figure 7). Algae have a remarkable ability to quickly adapt to environmental factors, such as temperature, nutrient availability and light intensity. The Greater Victoria region experienced favourable conditions for the growth of certain algae species in the early spring and summer of 2022, especially with continued nutrient input from rainfall and runoff into early July. However, no actual bloom of a specific algae species occurred in Sooke Lake Reservoir in 2022, which demonstrates the robustness of an intact ecosystem with a balanced and diverse algae population.

There were three distinctive algae activity peaks in 2022 (Figure 5, Figure 6, Figure 7): mid-March: dominant species *Chrysochromulina* sp. (Haptophyta); 3,193 NU/mL, early July: dominant species *Cyanodictyon* sp. (Pico-Cyanoacbacteria); 2,791 NU/mL, and early September: dominant species *cf. Monomastix* sp. (Chlorophyta); 865 NU/mL. None of these events caused any water quality concern but they are indicators of dynamic conditions in the lake. Often peaks of algae concentrations are followed by peaks in certain zooplankton concentrations demonstrating the food web dynamics in the lake.

Throughout the year, abundant populations of small sized flagellates (~ 5 microns, possibly the green flagellates *Pedinomonas* spp.), and single cells of golden algae (~ 6 microns) were recorded. Due to their small size, they only contribute insignificantly to the total algal biomass in the reservoir and for consistency with historical data, they were excluded in the analyses and the presented composition graphs below.

During certain times of the year (typically the warm water months), cyanobacteria can comprise a significant portion of the algae spectrum (Figure 8, Figure 9, Figure 10). While this may seem like a major water quality risk, the risk of potential toxin production comes with blooms of certain cyanobacteria species and not with an overall abundance of a variety of species. For instance, in Sooke Lake Reservoir in 2022, the most abundant cyanobacteria species was a small size picocyanobacteria *Cyanodictyon* spp. (~2 microns), which has been described in previous annual reports. They are common in lacustrine environments and are not known to produce toxins. Other cyanobacteria species recorded in Sooke Lake are potential toxin producers when in bloom conditions, such as *Dolichospermum/Anabaena* spp. or *Pseudanabaena* sp. However, the densities of these species were well below the critical threshold recommended by Health Canada (2017), (i.e., 2000 cells/mL). For example, the maximum count of *Dolichospermum/Anabaena* spp. was 45.5 cells/mL reported on August 15, 2022. Based on those low specific concentrations, the water quality risk from cyanobacteria was low again in 2022.

There were no algae-related water quality concerns in 2022.

Total Algal Concentration (NU/mL) Over Time, Sooke Lake Reservoir, South/Intake Basin, 1 m Depth (SOL-00-01)

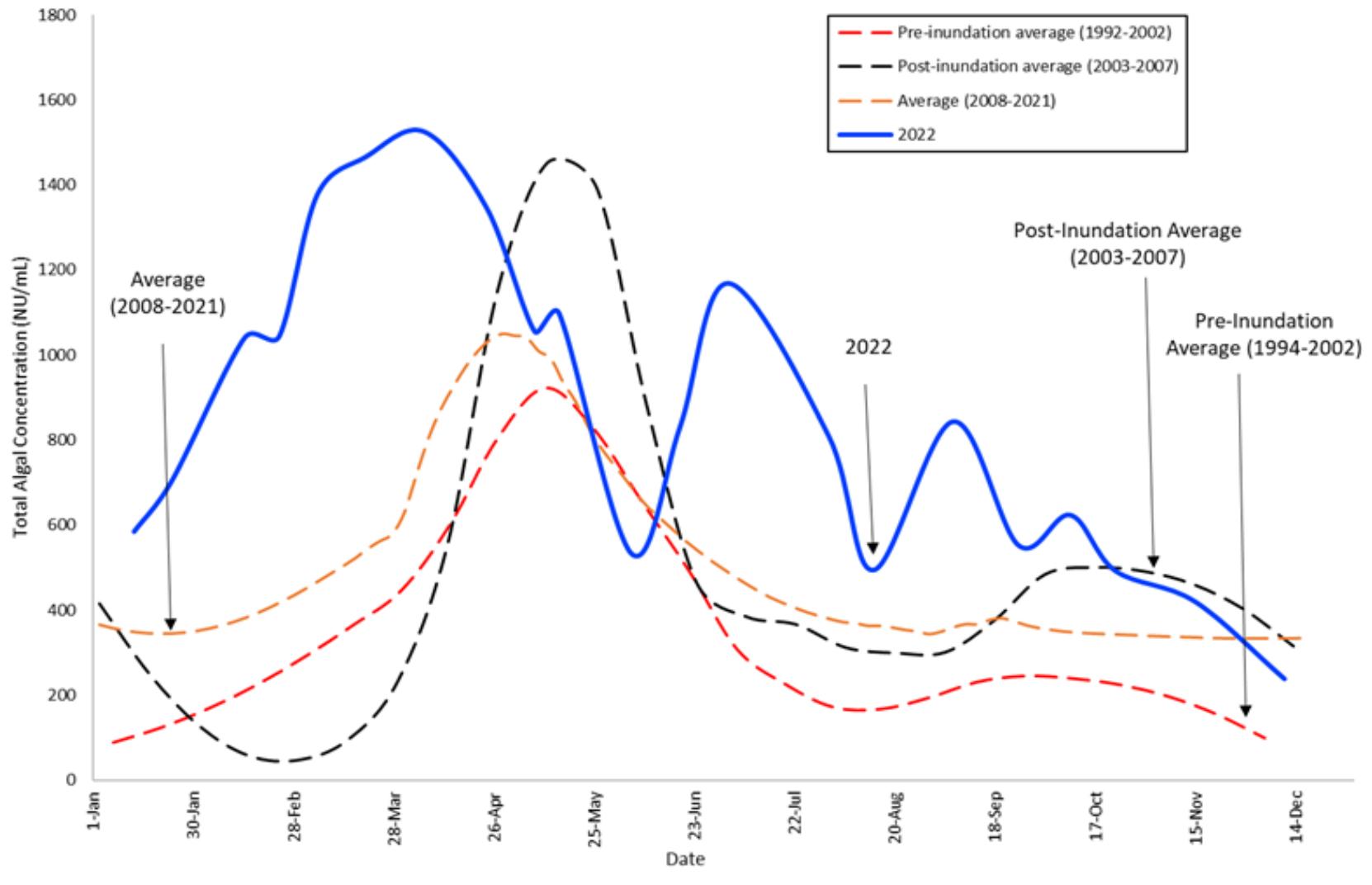


Figure 5 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, South/Intake Basin, 1 m depth (SOL-00-01)

Total Algal Concentration (NU/mL) Over Time, Sooke Lake Reservoir, South Basin, 1 m Depth (SOL-01-01)

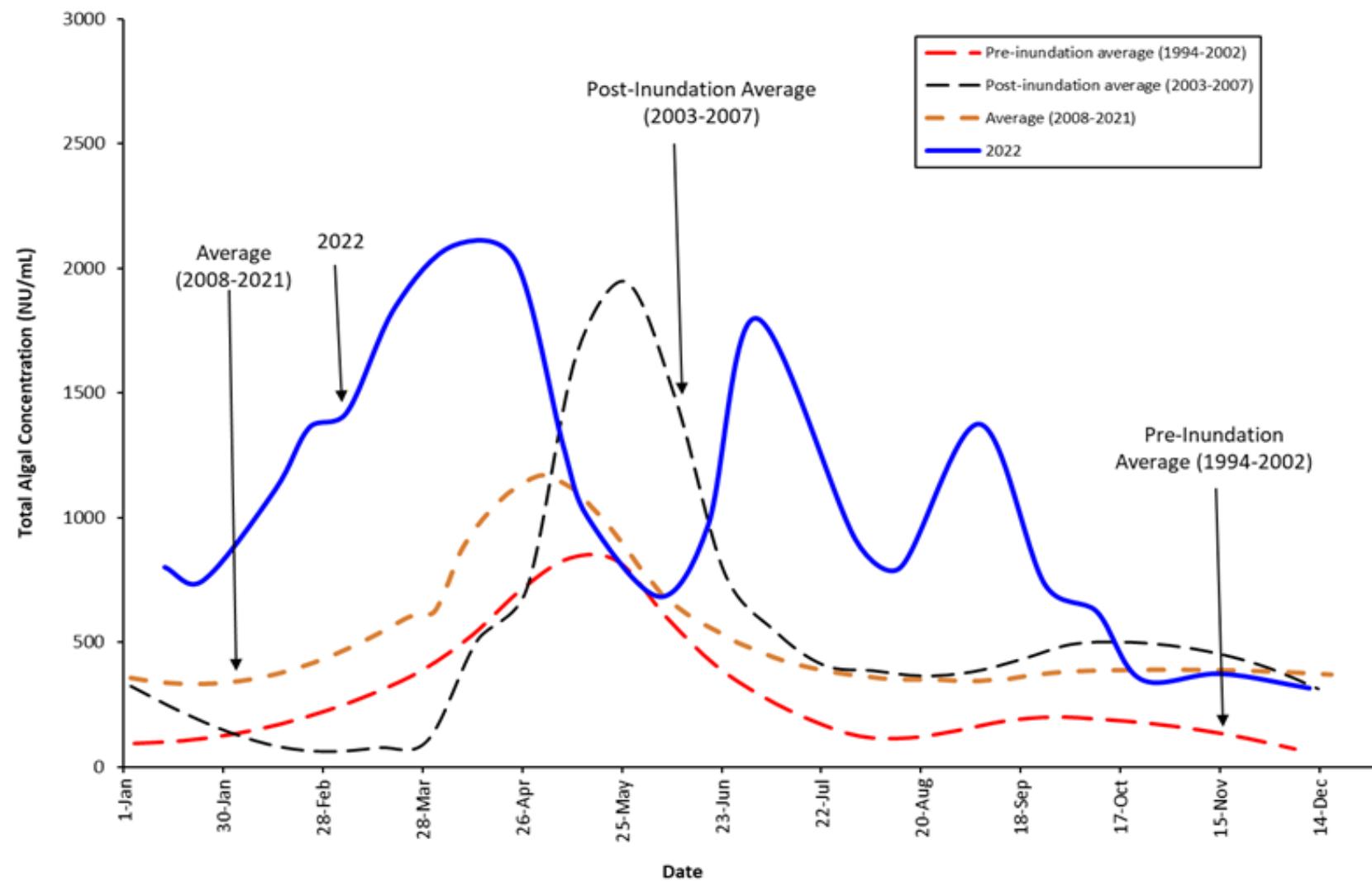


Figure 6 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

Total Algal Concentration (NU/mL) Over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

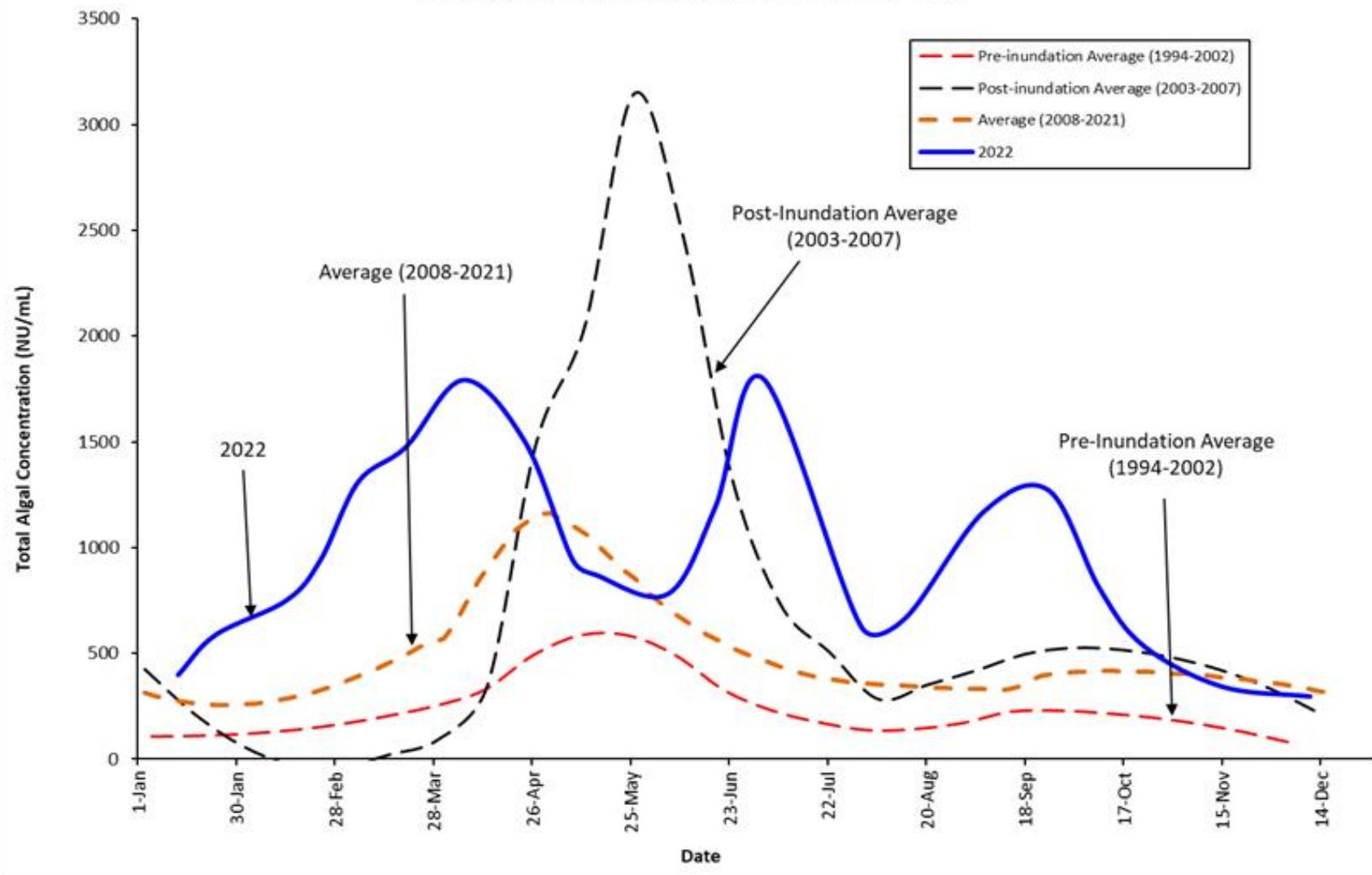


Figure 7 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

2022-Sooke Lake Reservoir Monthly Sample Composition (%) by Major Algal Group, Intake Basin, 1 m Depth (SOL-00-01)

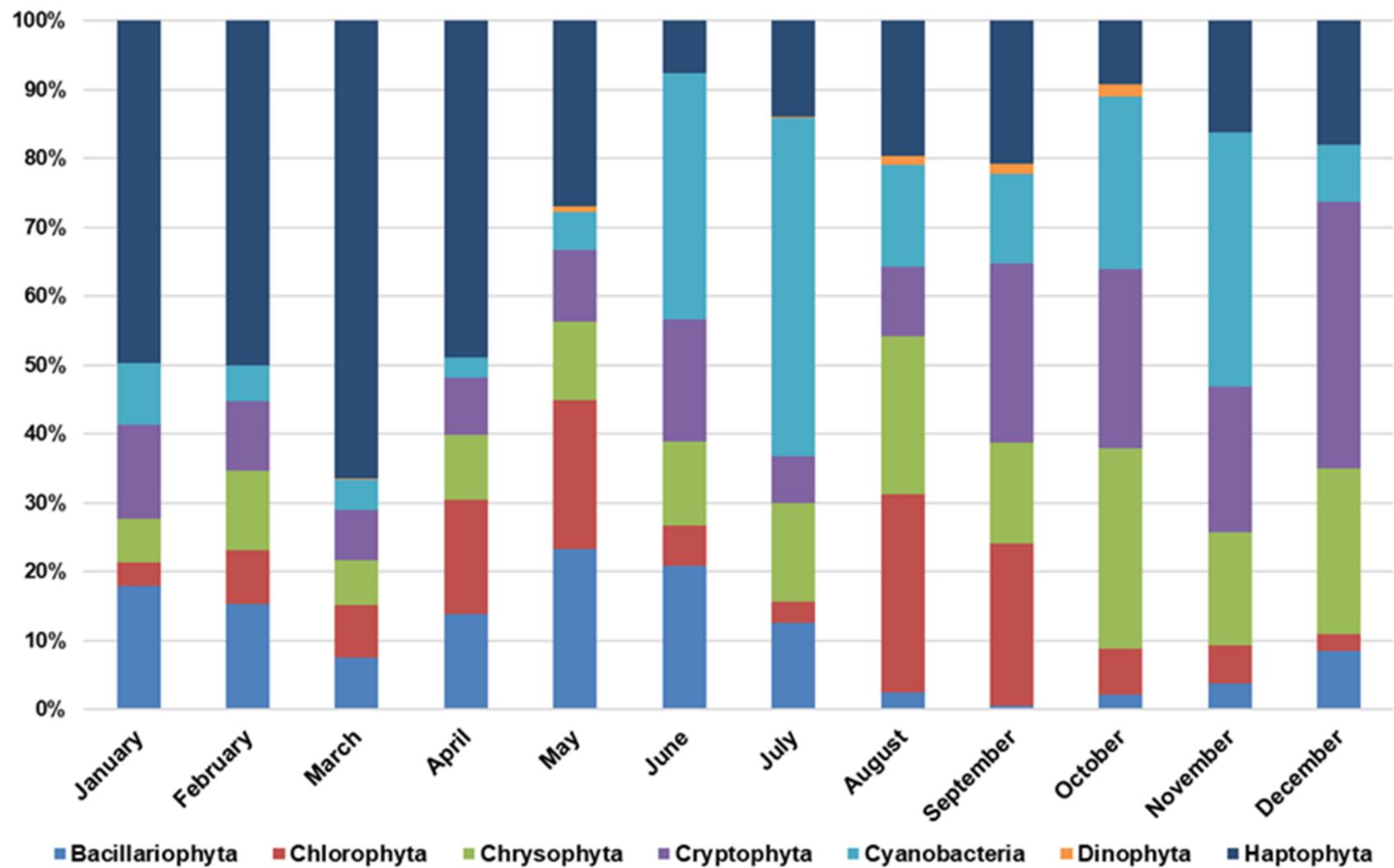


Figure 8 Monthly Abundance Percent of Different Algal Groups, Intake Basin, 1 m depth, SOL-00-01, 2022

**2022-Sooke Lake Reservoir Monthly Sample Composition (%)
by Major Algal Group, South Basin, 1 m Depth (SOL-01-01)**

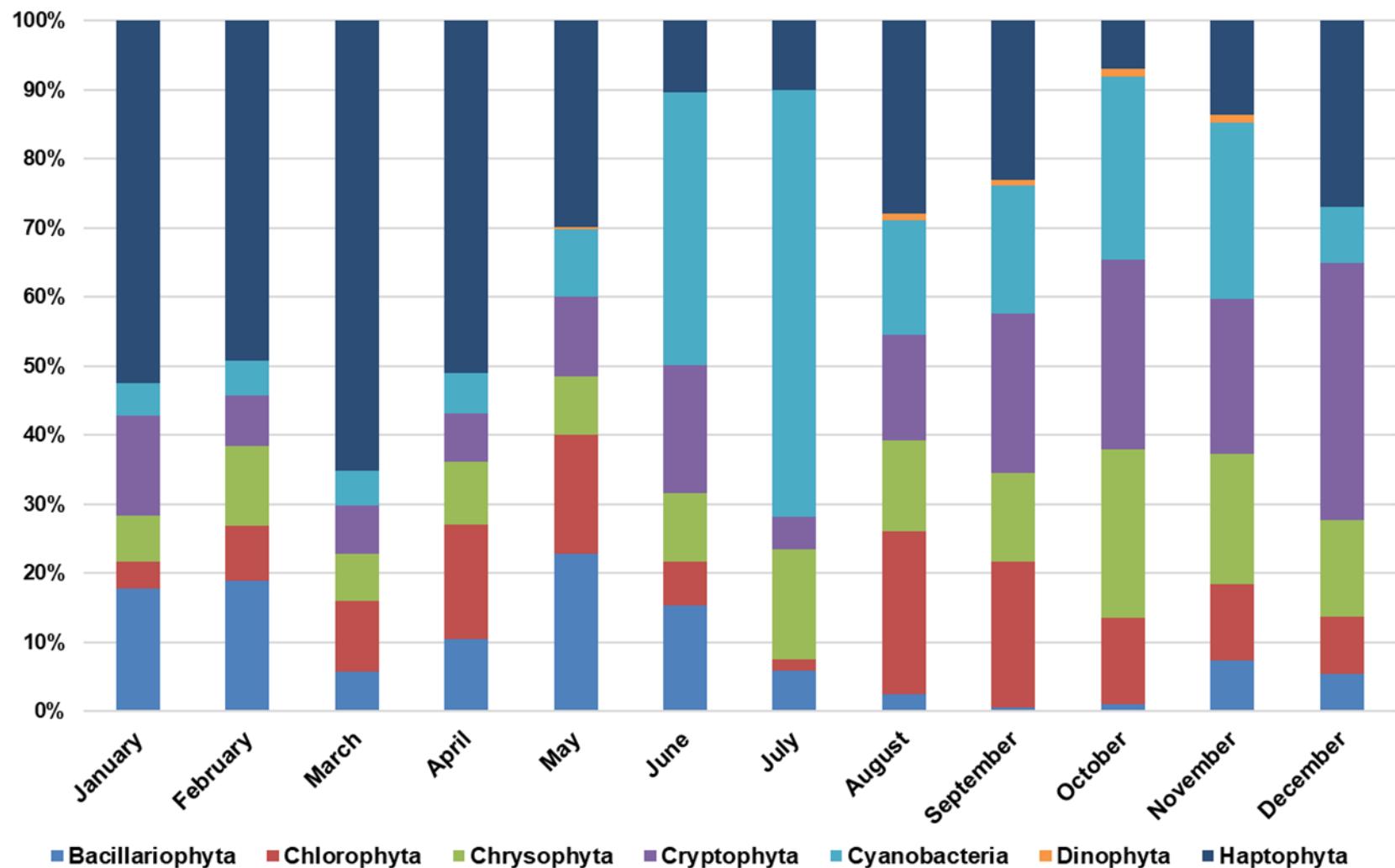


Figure 9 Monthly Abundance Percent of Different Algal Groups, South Basin, 1 m depth, SOL-01-01, 2022

2022-Sooke Lake Reservoir Monthly Sample Composition (%) by Major Algal Group, North Basin, 1 m Depth (SOL-04-01)

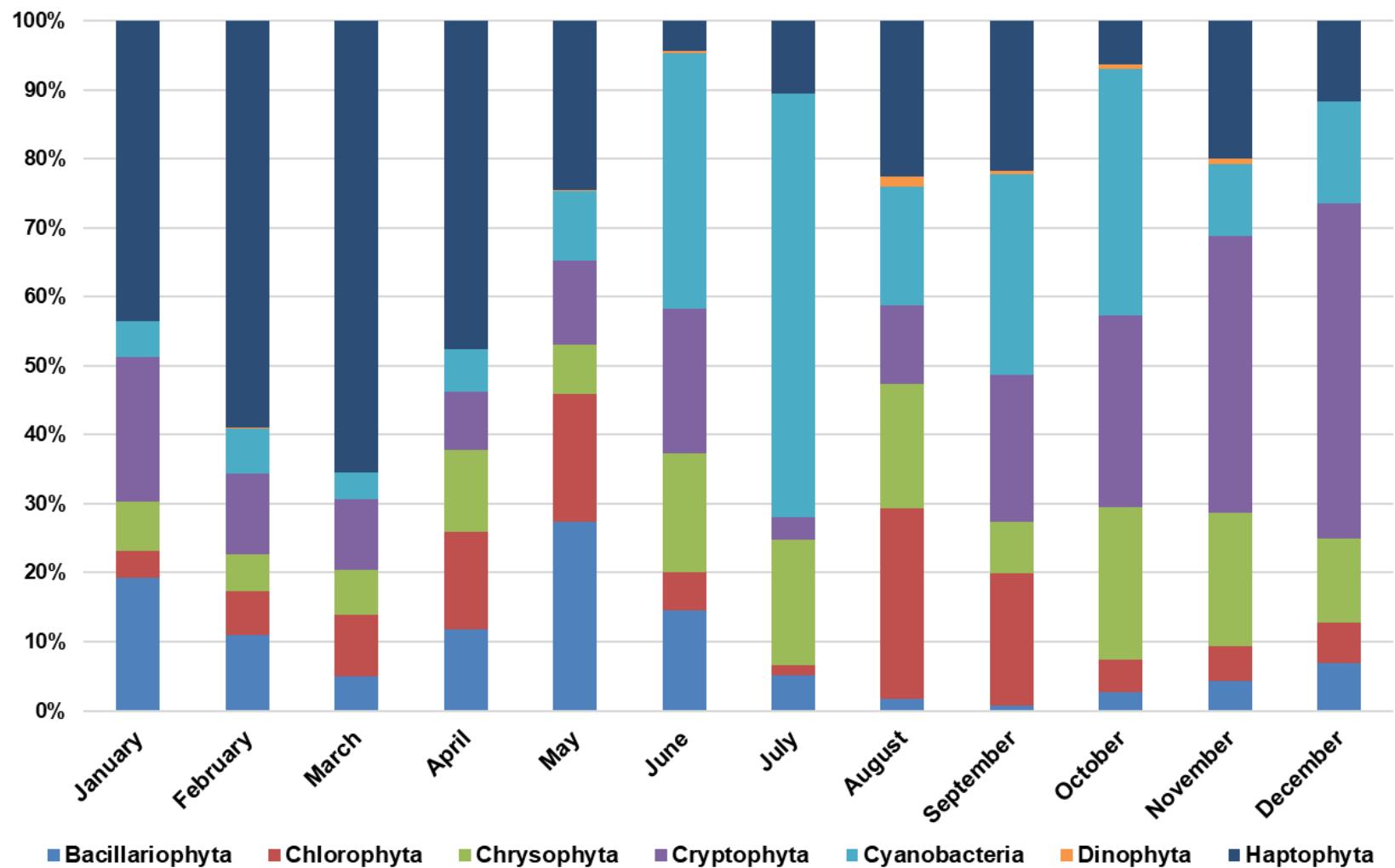


Figure 10 Monthly Abundance Percent of Different Algal Groups, North Basin, 1 m depth, SOL-04-01, 2022

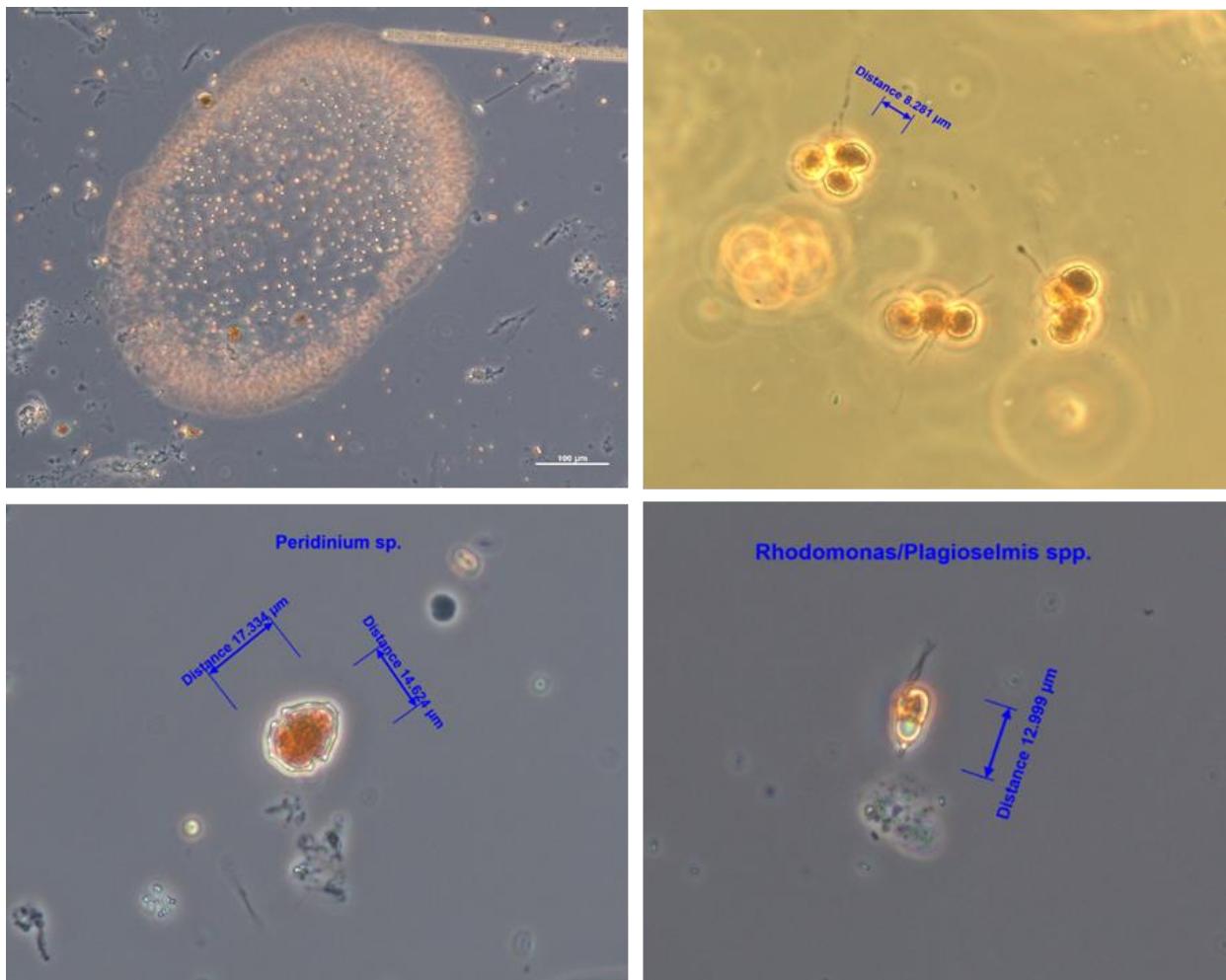


Figure 11 Some algae present in Sooke Lake Reservoir

Golden algae - *Uroglena* sp. (top left), Green algae - *Tetraspora* sp. (top right), Dinophytes - *Peridinium* sp. (bottom left) and Cryptophytes – *Plagioselmis/Rhodomonas* sp. (bottom right).

Zooplankton – Sooke Lake Reservoir (SOL). Zooplankton play an important role as an intermediate trophic stage, ensuring the energy flow from primary producers to higher trophic levels, e.g., macroinvertebrates, fish and other aquatic animals in aquatic ecosystems. Previous studies have shown that fish in Sooke Lake Reservoir predominantly rely on zooplankton for forage. Because of this important biological role, the CRD has included a regular zooplankton analysis to its source water monitoring program. Zooplanktonic species themselves can be herbivores, carnivores or omnivores. Studies have shown that any change of zooplankton species composition or densities or both could influence not only the trophic structure, but also physiochemical parameters in the ecosystems. There are three main zooplankton groups: Protozoa, Rotifera and Crustacea (Copepoda and Cladocera). In the ecosystems, phytoplankton are considered as a main food source for zooplankton and, therefore, phytoplankton dynamics can significantly reflect the changes of zooplankton and vice versa. The peak of zooplankton abundance normally occurs after the peak of phytoplankton. In general, zooplankton tend to have higher density during the spring-to-fall period than in winter.

In Sooke Lake Reservoir, zooplankton mainly consist of Rotifera and Copepoda, although Cladocera taxa, such as *Daphnia* spp., can be occasionally recorded. In 2022, these three main zooplankton groups were recorded in Sooke Lake. Rotifera was the most dominant group. Abundances of Rotifera and Copepoda were consistent with the long-term trends. Cladocera zooplankton, on the other hand, was less common and only observed in some discrete samples and was therefore excluded from the analysis.

As rotifers are considered one of the main food sources for copepods, these two groups might show opposite abundance trends. Zooplankton dynamics in Sooke Lake are also regulated by other higher trophic organisms, such as macroinvertebrates and fish.

Zooplankton trends in Sooke Lake Reservoir are typical of ecological succession models. 2022 zooplankton activity was consistent with long-term trends (Figure 12 to 17).

Rotifer Species Concentration Over Time, Sooke Lake Reservoir, Intake Basin, 1m depth (SOL-00-01)

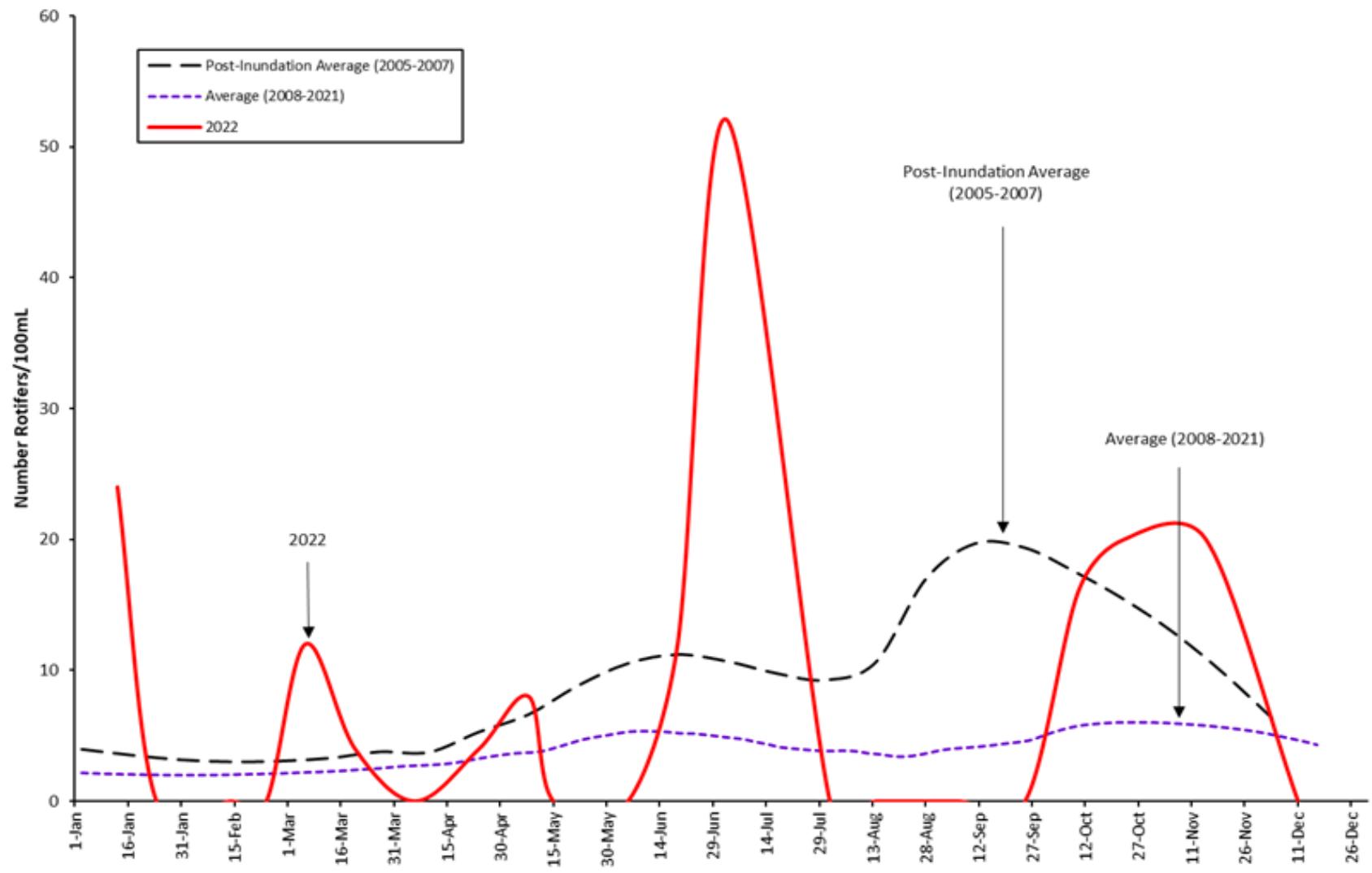


Figure 12 The Total Number of Rotifers Over Time, Sooke Lake Reservoir, Intake Basin, 1 m depth (SOL-00-01)

Rotifer Species Concentration Over Time, Sooke Lake Reservoir, South Basin, 1m depth (SOL-01-01)

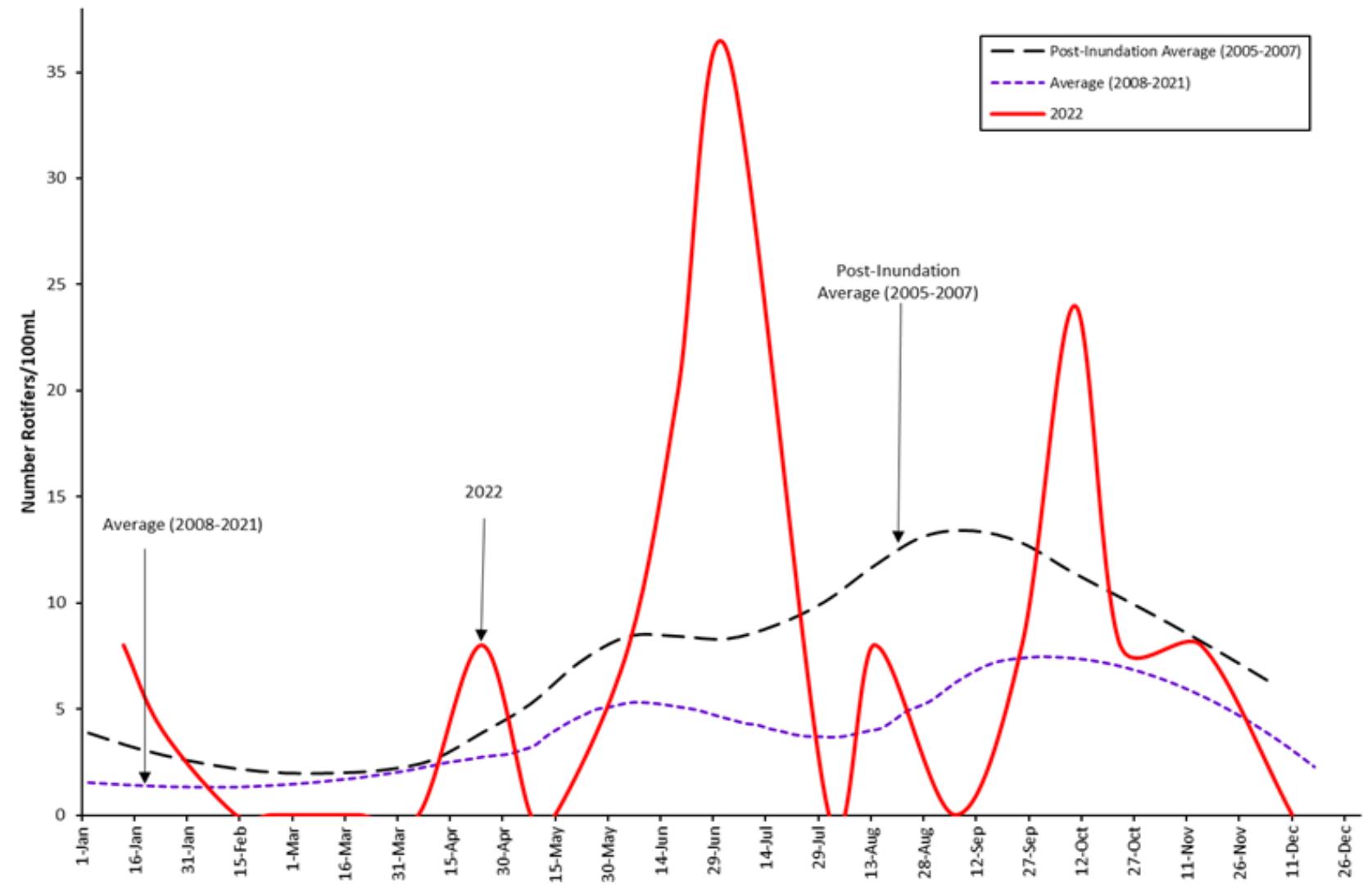


Figure 13 The Total Number of Rotifers Over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

Rotifer Species Concentration Over Time, Sooke Lake Reservoir, North Basin, 1m depth (SOL-04-01)

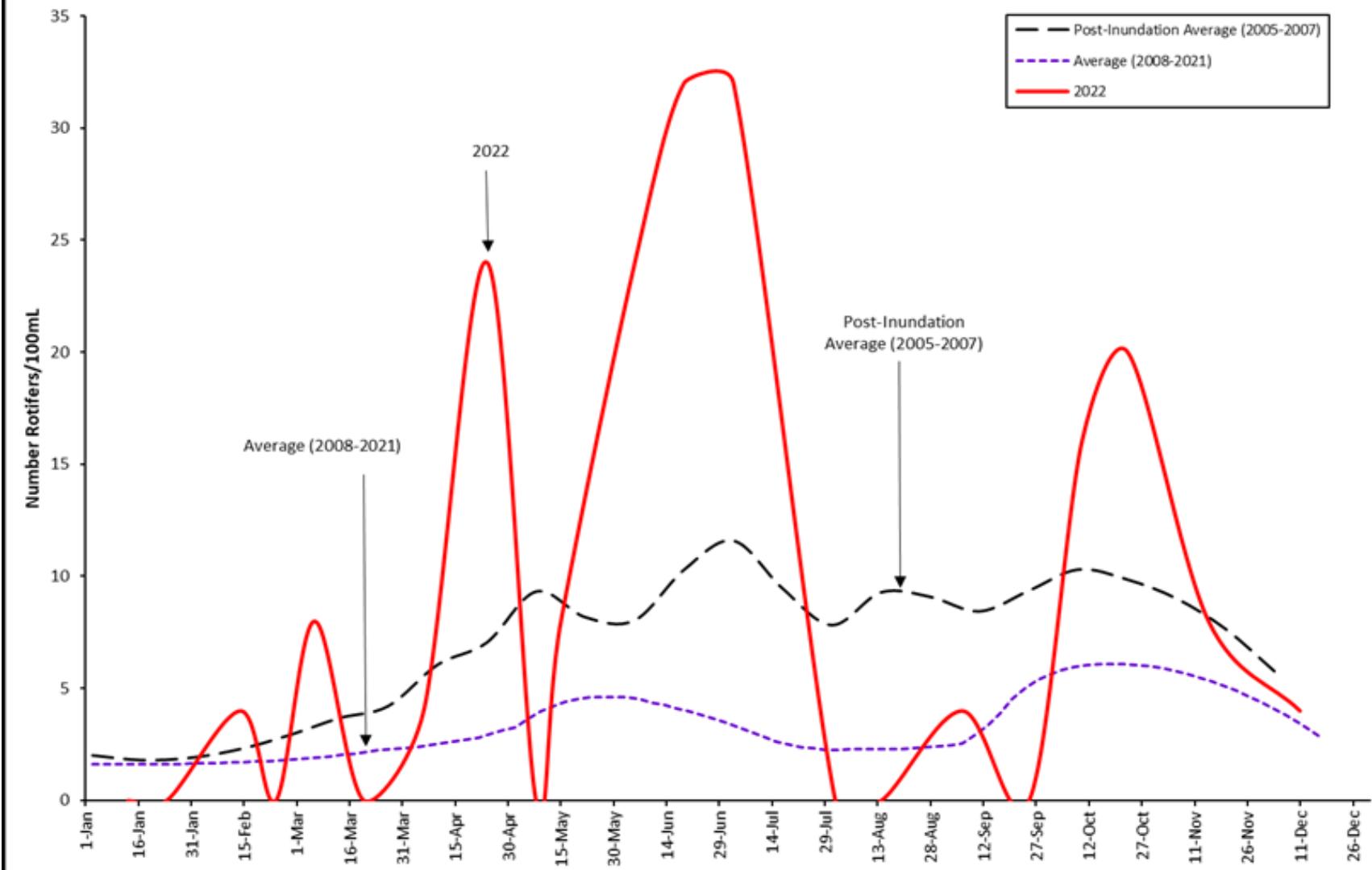


Figure 14 The Total Number of Rotifers Over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

Copepod Species Concentration Over Time, Sooke Lake Reservoir, Intake Basin, 1m depth (SOL-00-01)

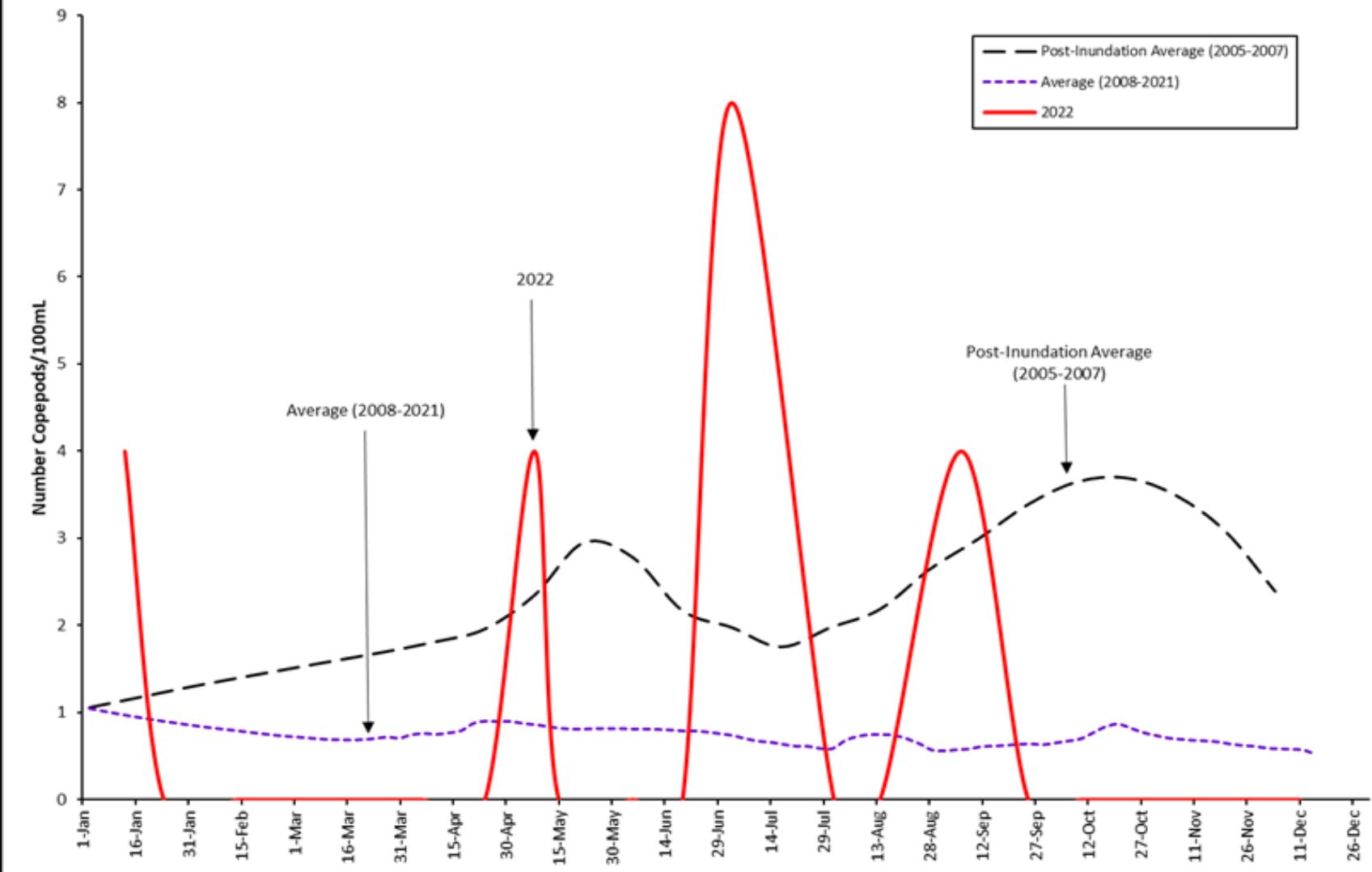


Figure 15 The Total Number of Copepods Over Time, Sooke Lake Reservoir, Intake Basin, 1 m depth (SOL-00-01)

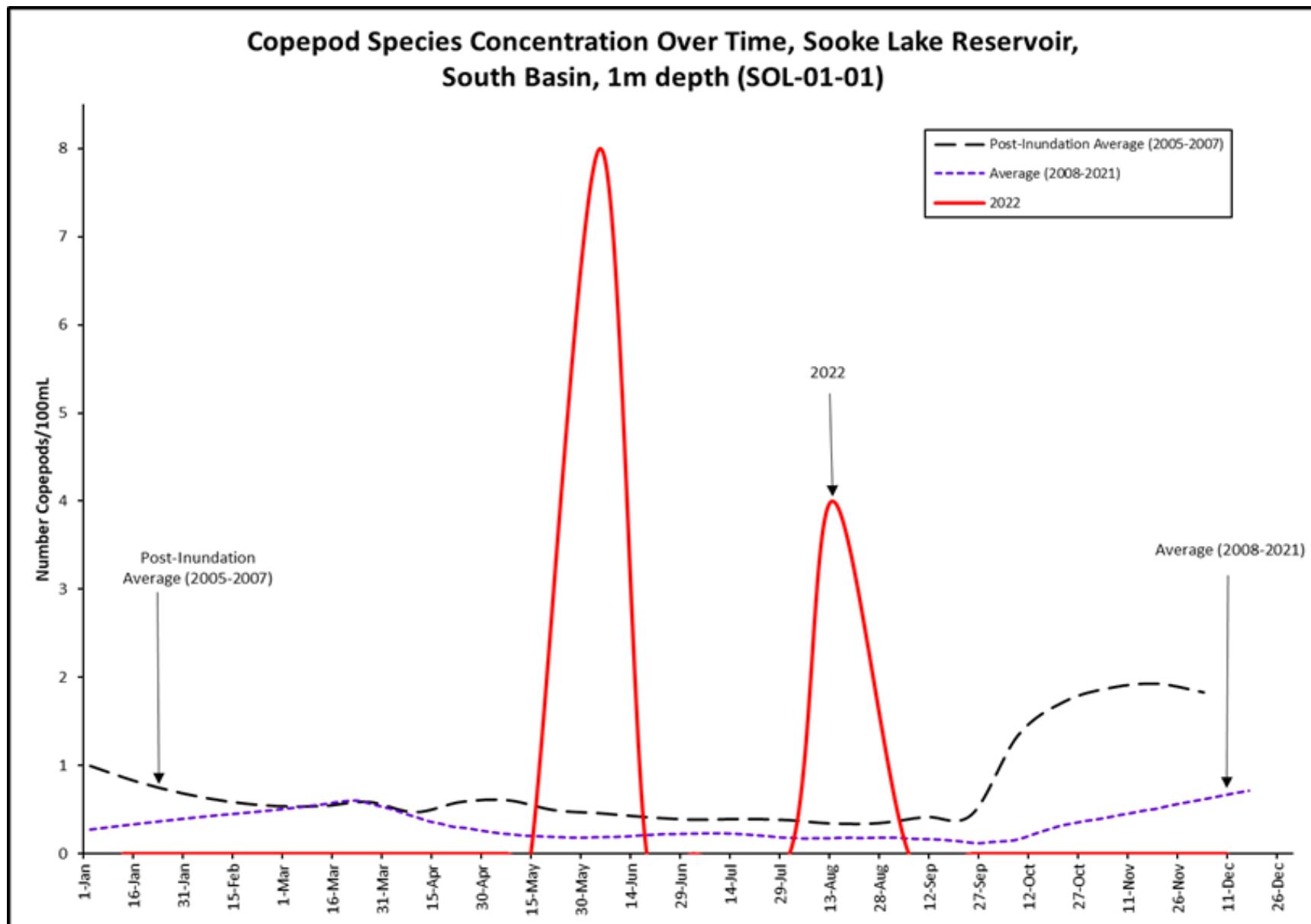


Figure 16 The Total Number of Copepods Over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

Copepod Species Concentration Over Time, Sooke Lake Reservoir, North Basin, 1m depth (SOL-04-01)

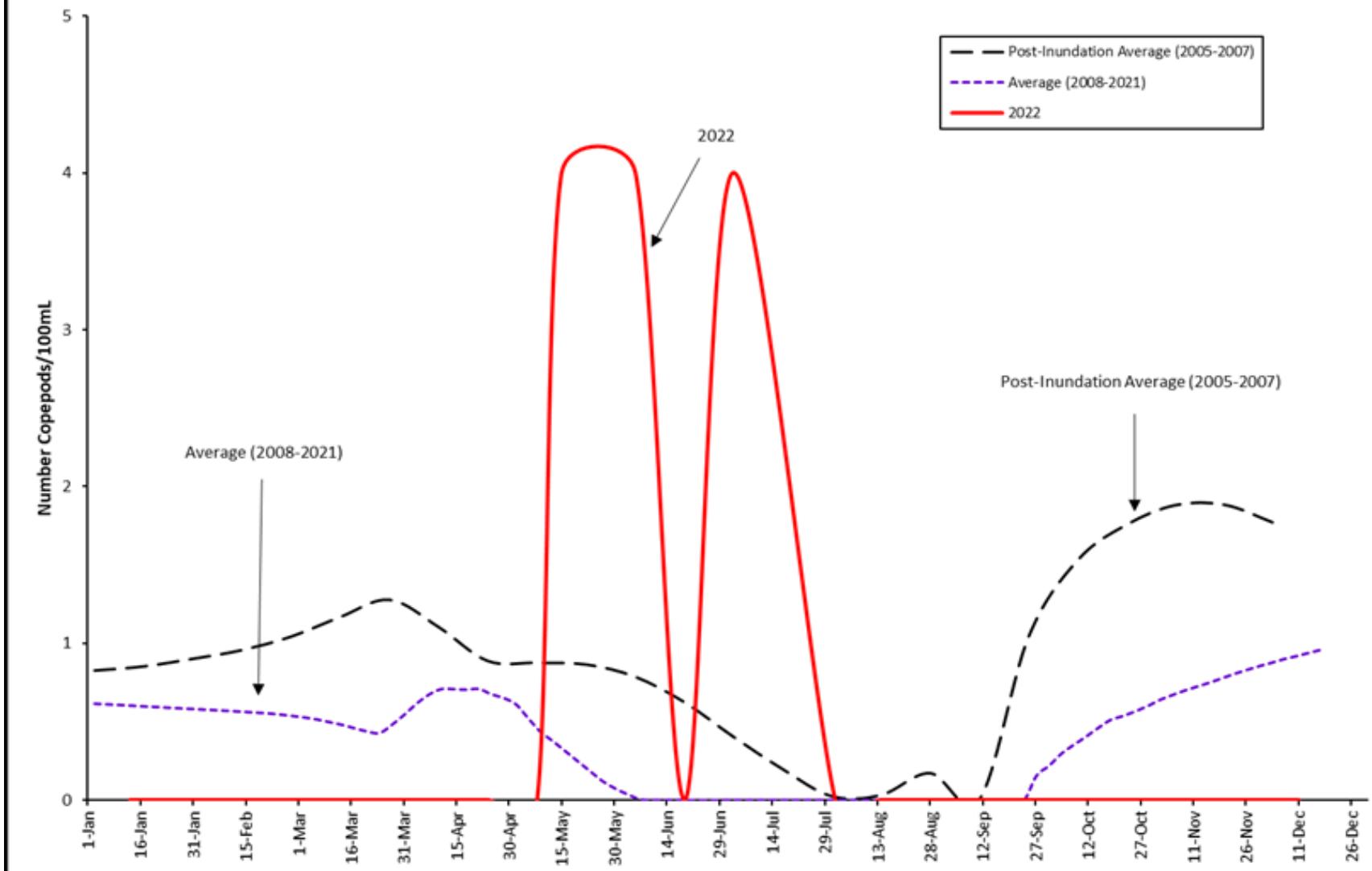


Figure 17 The Total Number of Copepods Over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

Stratification: The 2022 thermal stratification pattern in Sooke Lake Reservoir was consistent with historical trends, as stratification occurred during spring, summer and early fall months. This phenomenon happens when the water column is divided in three layers from top to bottom, including: *epilimnion* (atop, warm, circulating and fairly turbulent), *metalimnion* (characterized by a steep thermal gradient or rapid temperature change) and *hypolimnion* (bottom, denser and colder water with little temperature change). The stratification reflects the vertical heat distribution in the water column and, therefore, might have a significant association with the dynamics of plankton communities. In 2022, Sooke Lake started to stratify slightly later due to unseasonal cool spring weather – likely in early May. Due to an unavailability of the temperature profiler before June 2022, the exact timing of the stratification onset could not be determined. The South Basin remained stratified until mid-August when the hypolimnion was depleted due to the continuous deep-water extraction. Compared to 2021, this hypolimnion depletion in the South Basin occurred about three weeks later, which is explained by the cool and wet weather conditions in spring and early summer, and the resulting lower water temperatures and higher reservoir level. The deeper parts of the reservoir destratified naturally, later in the fall – sometime between late November and early December.

Turbidity. The turbidity is continuously measured at both water treatment plants and at the Sooke Lake intake tower, but also sampled and lab tested daily from the Goldstream Water Treatment Plant and weekly at the Sooke River Road Water Treatment Plant. Figure 18 shows that the source water turbidity was well under 1 NTU throughout 2022; however, on two days during the summer season, June 22 and June 29, with peak demand and high flows due to outdoor water demand, sediments in the mains downstream of the Kapoor Tunnel were dislodged and caused short-period turbidity excursions to above 1 NTU (June 22 peak at 3.4 NTU, June 29 peak at 1.15 NTU). The second peak on June 29, 2022 was very short (<2h) and was not captured with grab sampling but analyzed using the recorded data by the online turbidity analyzer. Similar events in the past have usually occurred on Wednesdays or Thursdays from 4 am to approximately 10 am or 11 am during the peak summer demand times, only at the Goldstream and not at the Sooke River Road Water Treatment Plant. Supervisory Control and Data Acquisition monitoring data shows that the average daily turbidity was still well below 1 NTU on both turbidity event days. Also, the UV transmittance, a measure of how much ultraviolet light can pass through the water, was always around 90% during this event and the UV dose at least 60 mJ/cm², ensuring effective UV treatment. In prior years, CRD had taken measures to mitigate these turbidity events at the Goldstream Water Treatment Plant (e.g., changed watering restrictions in the region, flushed raw water mains upstream of Goldstream plant in April) and these measures were successful in greatly reducing the number of turbidity exceedances, compared to summers before 2018. The CRD was unable to undertake raw water main flushing in the spring of 2022 which resulted in these two turbidity events. In 2021, with completed water main flushing, there was only one smaller turbidity event in early summer.

Another turbidity excursion occurred on December 20, 2022 at both treatment plants: a power outage at the Head Tank due to adverse weather conditions in the evening of December 19, 2022, and a generator failure led to extremely high flows through Main #10 and #11 between the Intake Tower and the Head Tank. These high flows mobilized pipe sediments in these two mains, which caused a turbidity spike at both plants in the morning of December 20, 2022. At the Goldstream plant, the turbidity rose to 1.1 NTU for about 10 minutes while at the Sooke plant, the turbidity rose to 1.5 NTU for about 50 minutes.

The short duration of these turbidity events, low natural pathogen concentrations in the raw water, the fact that these events were not caused by an actual water contamination, and fully functional treatment processes during these events were the main criteria for assessing these events as very low risks to public health.

Overall, Sooke Lake water was very clear in 2022, and turbidity of the raw water was at no time a factor of concern to the drinking water quality in the GVDWS.

2022 Turbidity of Raw Water Entering Goldstream Water Treatment Plant

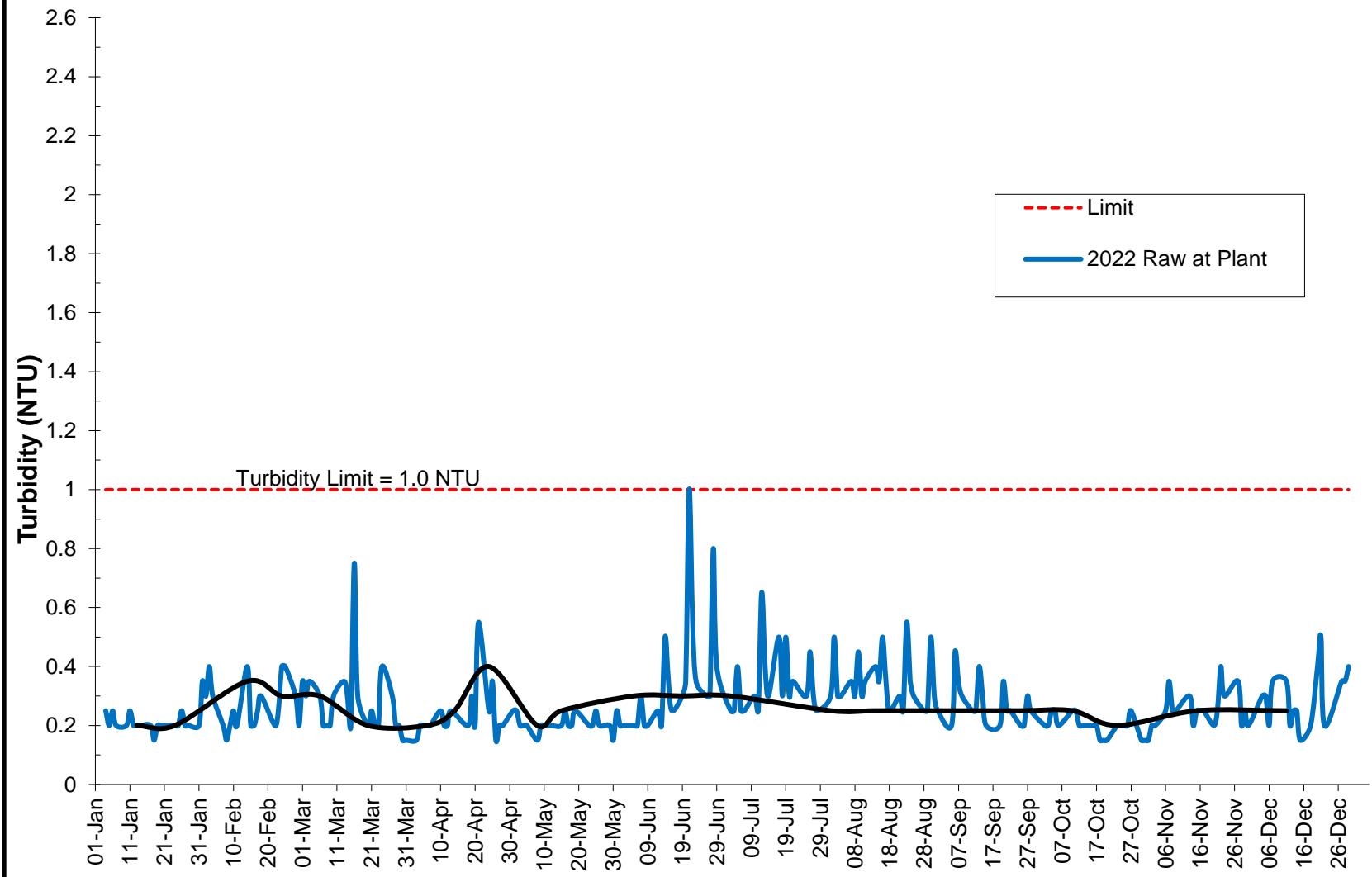


Figure 18 2022 Turbidity of Raw Water Entering Goldstream Water Treatment Plant (from Grab Sampling)

Raw Water Temperature. Cool water is beneficial in a distribution system because it reduces the potential for losses of chlorine residual and regrowth of bacteria. For that reason, the Canadian guidelines suggest a temperature limit of 15°C.

The temperature of the water entering the Goldstream Water Treatment Plant in 2022 was much cooler during the spring and particularly during the summer and only caught up to the long-term average trend line by the middle of September. The following prolonged heat and drought throughout the fall resulted in higher than seasonally normal water temperature during the month of October. In November, with the onset of destratification of the deep Sooke Lake north basin, cooler temperatures from the hypolimnion mixed with surface water and led to a rapid decrease of the water temperatures at the intake in the south basin. After that, the water temperatures remained mostly just below the long-term average trend line (Figure 19). The raw water entering both treatment plants exceeded the 15°C guideline limit between the end of August and end of October. While this is approximately the same duration of exceedance, it is however four-six weeks later in the year than normal. The maximum (weekly average) temperature peak remained below 18°C for the first time in several years, and also slightly below the maximum of the long-term trend.

The usage of the lowest intake gates during the summer led to the depletion of the cool water stored in the hypolimnion water column of the reservoir's south basin. This occurred approximately in mid-August and can be seen as a sharp incline in temperature at that time in Figure 19. The cool water stored in the hypolimnion of the much deeper north basin is currently inaccessible for the CRD with the existing infrastructure.

High raw water temperatures during the summer are not a new problem for the CRD. Before the expansion of the Sooke Lake Reservoir in 2004, the water temperature entering the plant reached 15°C as early as mid-June. Warmer and longer summers, as a result of climate change, will likely exacerbate this problem in the future.

2022 Temperature of Raw Water entering Goldstream Water Treatment Plant (Weekly Average)

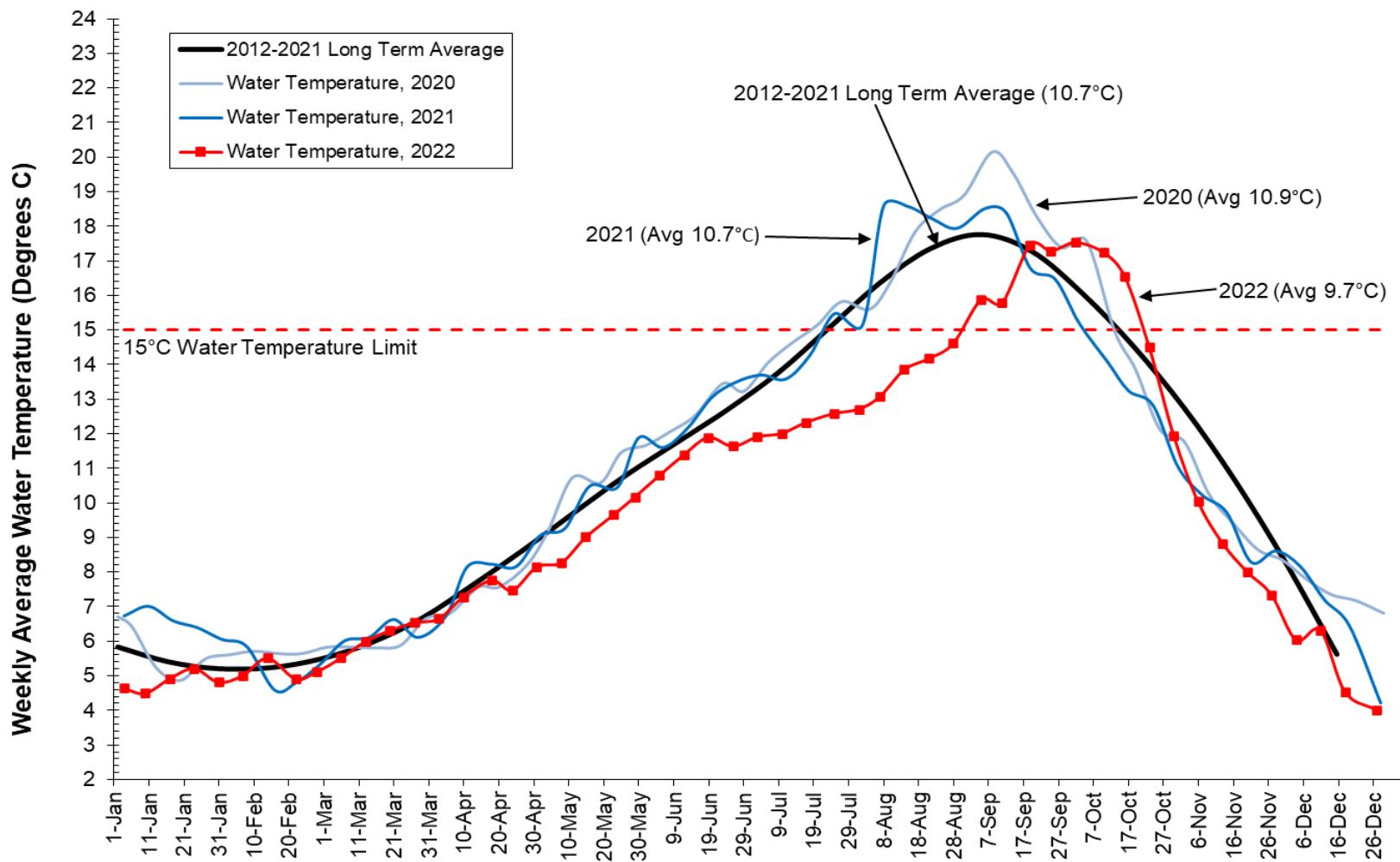


Figure 19 2022 Temperature of Raw Water Entering Goldstream Water Treatment Plant (Weekly Average)

Physical/Chemical Parameters. The raw water entering the Goldstream Water Treatment Plant had the following physical and chemical characteristics:

- Median pH: 7.2
- Median CaCO₃ Hardness: 15.90 mg/L
- Median Alkalinity: 14.80 mg/L
- Median Colour: 6.0 TCU
- Median Total Organic Carbon: 1.75 mg/L
- Median Conductivity (25°C): 41.30 µS/cm

The values of the parameters above are consistent with those of previous years.

Inorganics/Metals. Table 1 in Appendix A lists all the inorganic and metal parameters tested in the source water in 2022. No unusual or concerning levels or trends have been detected.

Organics/Radionuclides. Table 1 in Appendix A lists all the organic radiological parameters tested in the source water in 2022. Most of them were not detected or were in insignificant concentrations. These results confirm the high level of protection from any anthropogenic impacts on the supply watershed.

Nutrients. Figure 20 to 23 show the total nitrogen and the total phosphorus concentrations in both the south and north basins at 1 m depths in Sooke Lake Reservoir. Total phosphorus concentrations at both stations trended near or below the long-term average. In both lake basins, the total phosphorus concentration dropped at times to levels below the detection limit of 1 µg/L, which indicates that biological activity in the lake used up all available phosphorus nutrients in the lake. The lack of phosphorus at the end of March and July was a result of increased algal activity prior to these periods. This limited the biological productivity during the summer, which resulted in a favorably lower algal activity. Nitrogen concentrations have been very consistent with the long-term average trend. The majority of this nitrogen was present in the form of organic nitrogen and likely remained available for biological uptake due to the growth limitation dictated by the lack of phosphorus. This confirms previous conclusions that Sooke Lake Reservoir is extremely phosphorus limited.

In general, the nutrient concentrations confirm the ultra-oligotrophic status (extremely unproductive, phosphorus limited) of Sooke Lake Reservoir, which is positive for a drinking water supply source.

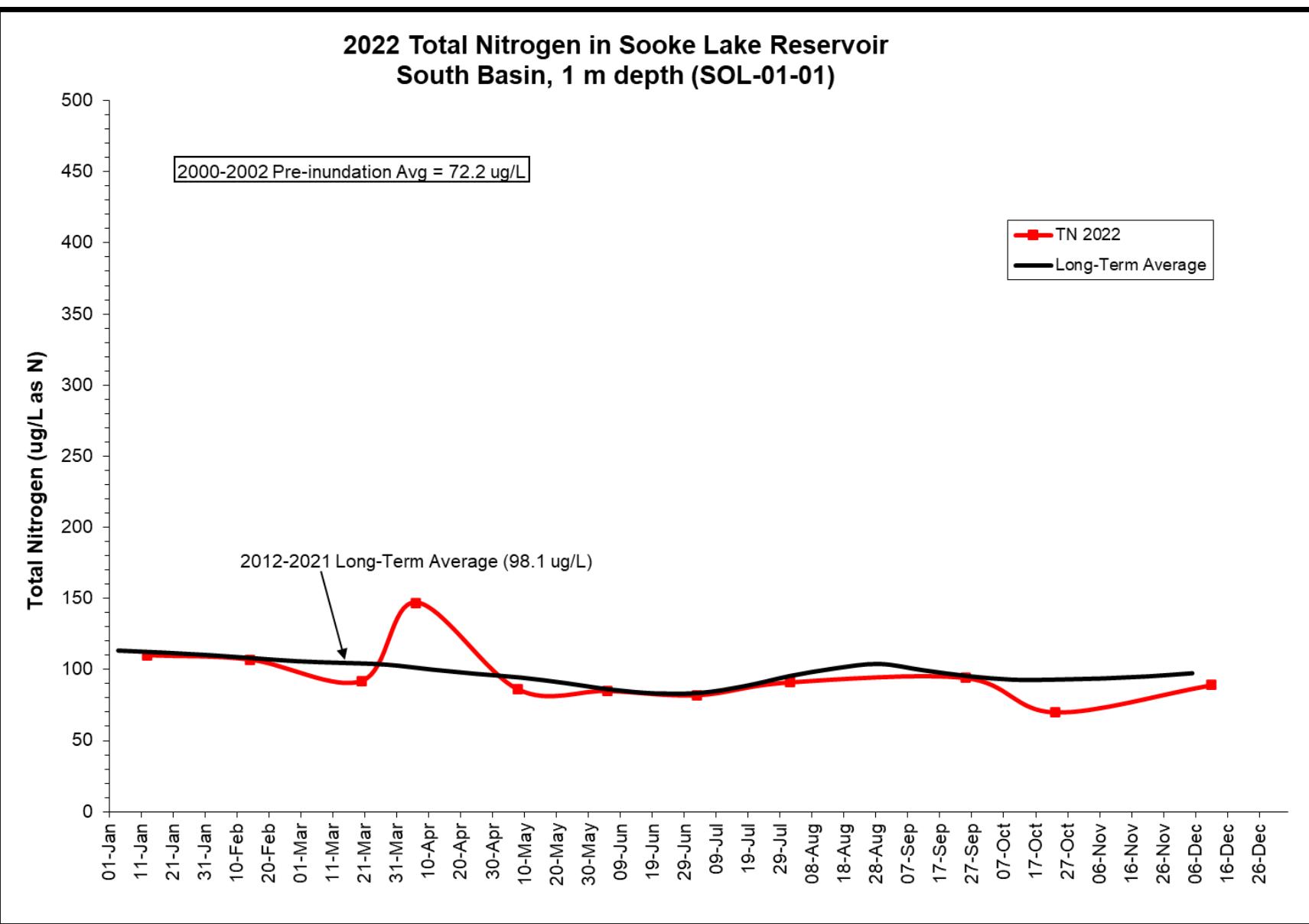


Figure 20 Total Nitrogen in Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

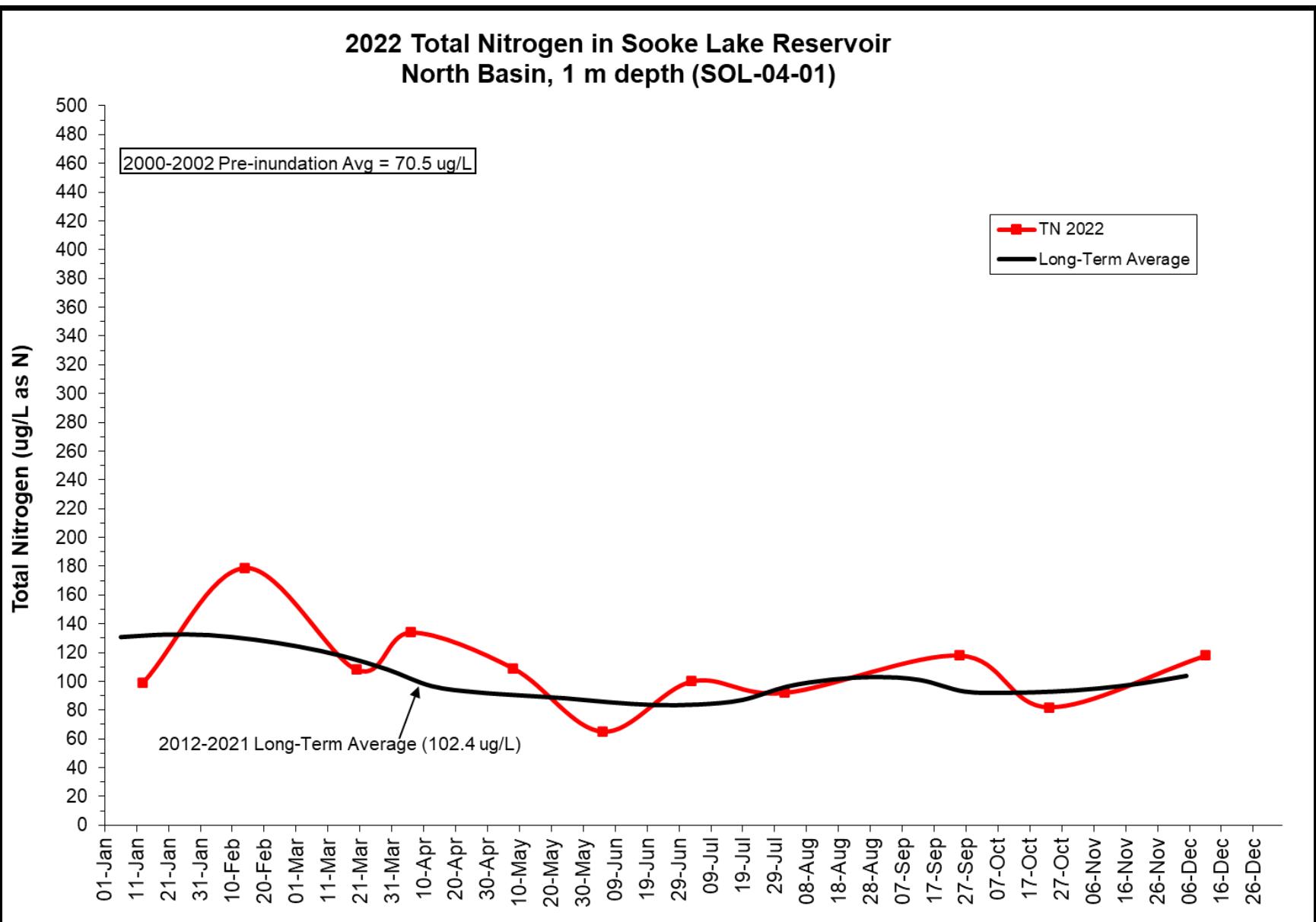


Figure 21 Total Nitrogen in Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

2022 Total Phosphorus in Sooke Lake Reservoir South Basin, 1 m depth (SOL-01-01)

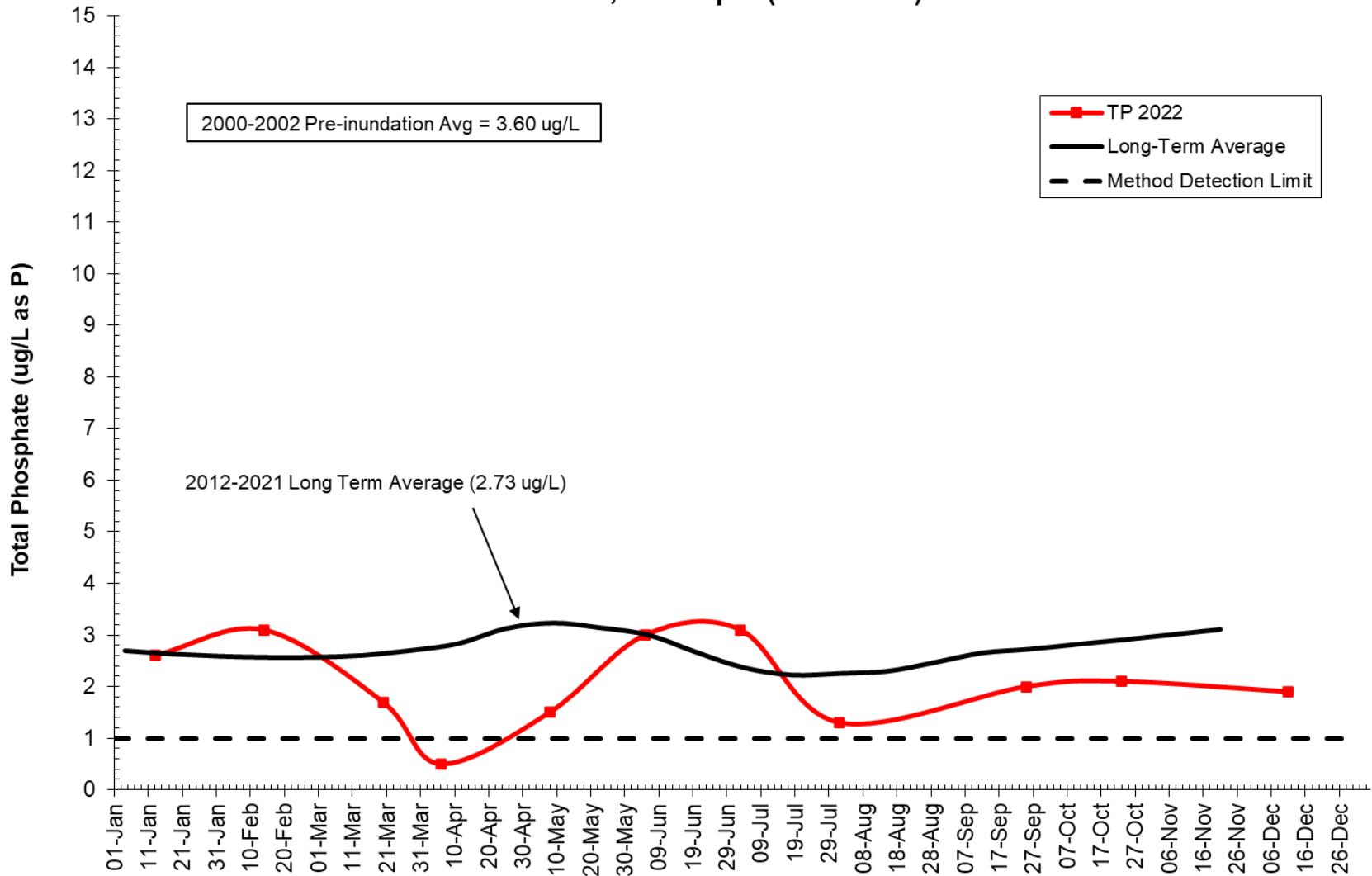


Figure 22 Total Phosphorus in Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

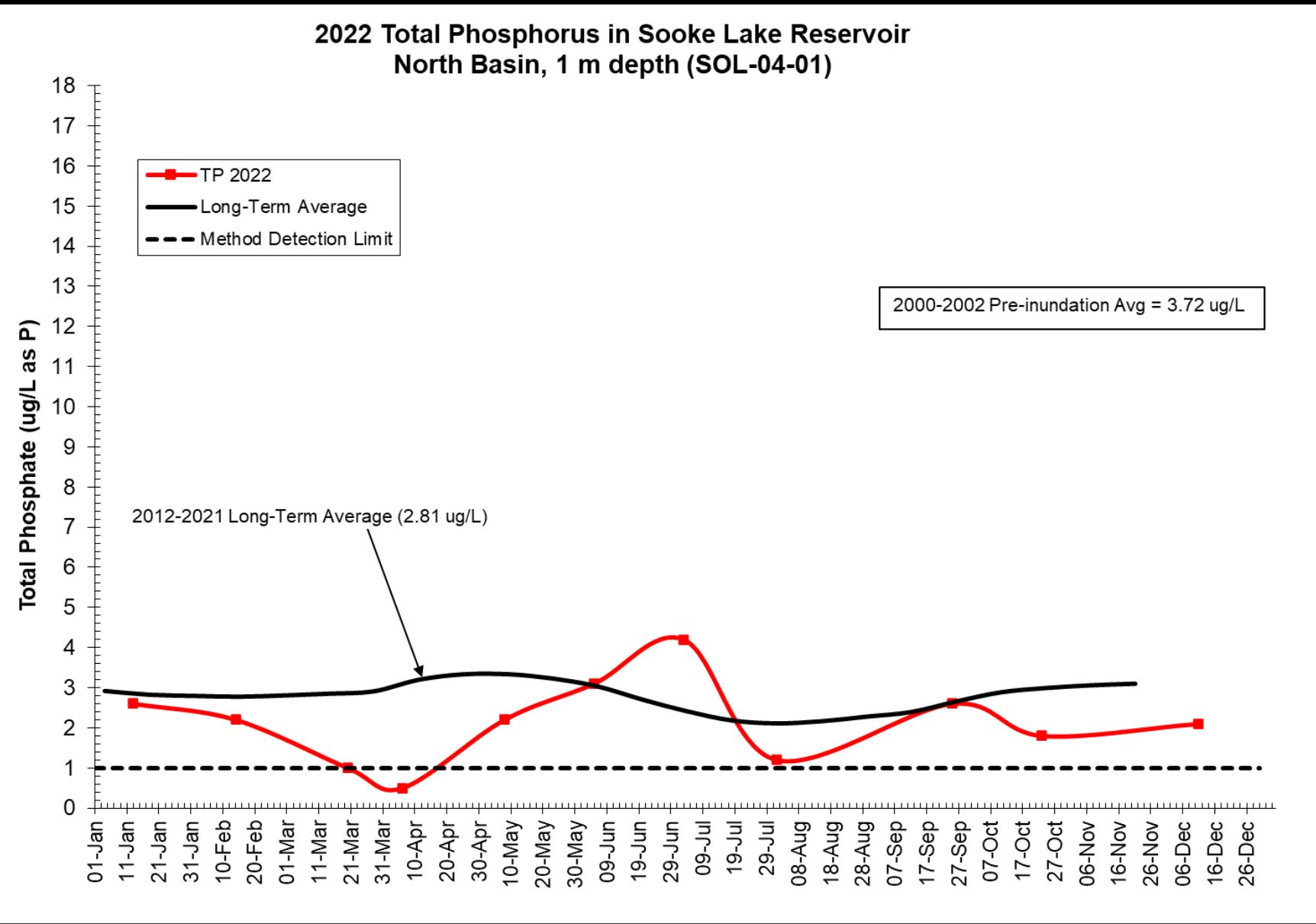


Figure 23 Total Phosphorus in Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

7.2 Treatment Monitoring Results

The following sections summarize the water quality data collected and analyzed to monitor and verify the effectiveness of the disinfection process at both CRD disinfection facilities in the GVDWS.

7.2.1 Goldstream Water Treatment Plant

Bacteriological Results after UV Treatment. Figure 24 shows the results from 242 samples collected and analyzed just downstream of the UV reactors. The results indicate that the UV treatment is capable of greatly reducing the *E. coli* and total coliform concentrations. On very few occasions, six in all of 2022, and only in very low concentrations, have total coliform bacteria been found downstream of the UV treatment. The UV treatment is followed up by chlorination disinfection, designed to kill viruses and bacteria. These multiple disinfection stages are important components of the multi-barrier concept, which eliminates the reliance on only one module to achieve compliance.

Turbidity. The Goldstream Water Treatment Plant experienced three adverse turbidity events in 2022.

June 22, 2022: First high-demand watering day (Wednesday) of the year. With peak demand and high flows due to outdoor water demand, sediments in Main #4 and #5 between the Kapoor Tunnel and the Goldstream plant were dislodged and caused a short-period turbidity excursion to above 1 NTU (4h exceedance with a peak at 3.4 NTU).

June 29, 2022: Second high-demand watering Wednesday of the year. With peak demand and high flows due to outdoor water demand, sediments in Main #4 and #5 between the Kapoor Tunnel and the Goldstream plant were dislodged and caused a short-period turbidity excursion to above 1 NTU (2h exceedance with a peak at 1.15 NTU).

December 20, 2022: A power outage at the Head Tank due to adverse weather conditions in the evening of December 19, 2022, and a generator failure led to extremely high flows through Main #10 and #11 between the Intake Tower and the Head Tank. These high flows mobilized pipe sediments in these two mains, which caused a turbidity spike at the Goldstream plant in the morning of December 20, 2022. The turbidity at the Goldstream plant rose to 1.1 NTU for about 10 minutes.

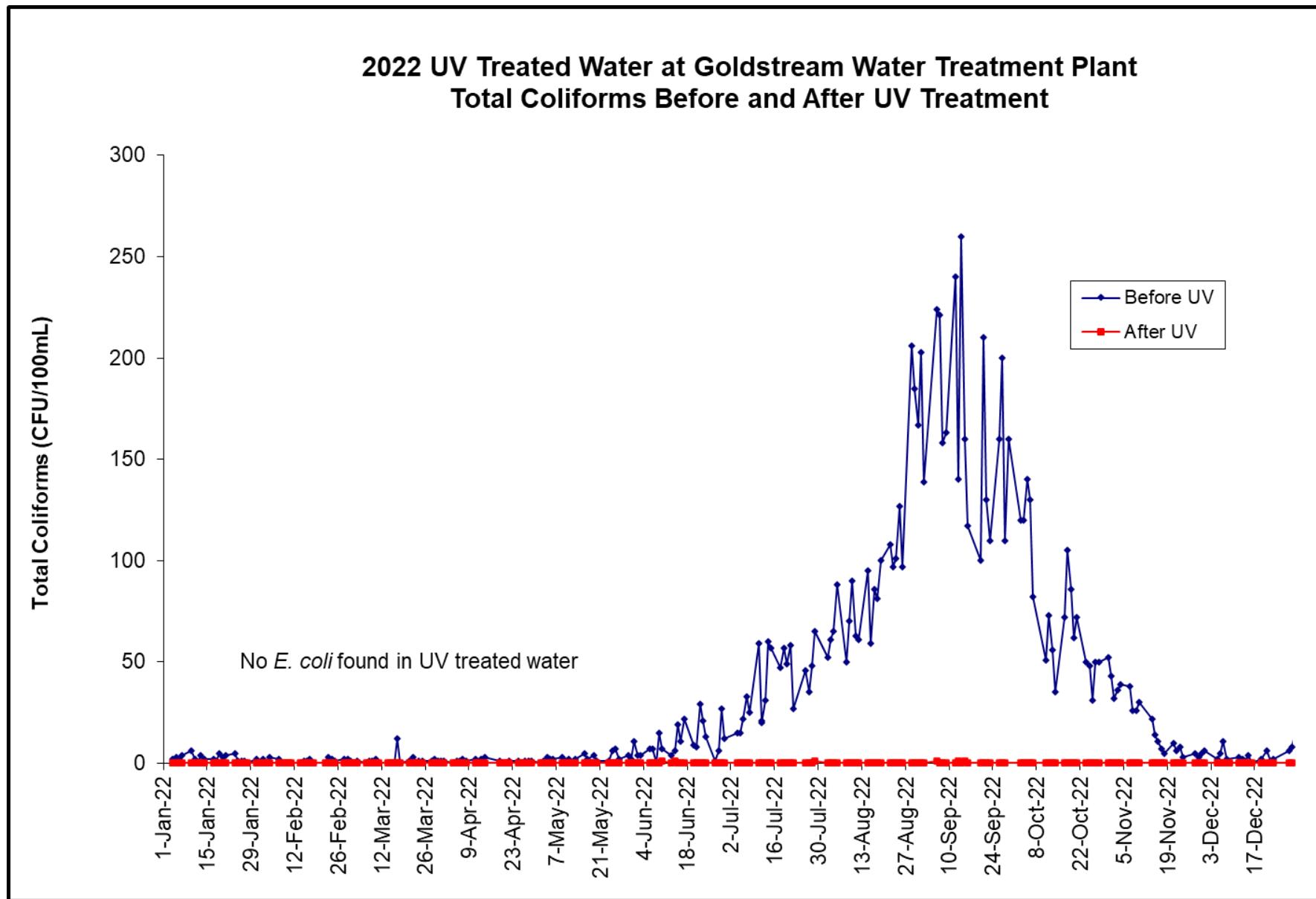


Figure 24 2022 UV Treated Water at Goldstream Water Treatment Plant Total Coliforms Before and After UV Treatment

Treated Water at Both First Customer Sampling Locations. The data collected from the two treated water sampling locations near the first customers below the Goldstream Water Treatment Plant (one at Main #4 and one at Main #5) indicated that the bacteriological quality of the disinfected water was good in all months of 2022 (Figure 25 and Appendix A, Table 2). In total, 240 samples were collected from the Main #4 first customer location and 218 samples from the Main #5 first customer location, for a combined total of 458 samples.

There were only five total coliform-positive samples from both sampling stations throughout the year. Four positive samples registered at the Main #5 first customer sampling station and one at the Main #4 station. All were very low total coliform concentrations. For all five positive results, no subsequent resample was positive for total coliform bacteria.

The few total coliform-positive results remained well under 10% of the monthly totals at both first customer locations. None of the positive results were in exceedance of the 10 CFU/100 mL total coliform limit, as per *Drinking Water Protection Regulation*. The negative resample results ruled out a breach in the system and any real contamination of the treated water. While the regulations require 90% of all monthly samples in the entire system to be free of total coliform bacteria, the CRD monitors the first customer locations based on even more stringent criteria, where water quality is gauged on the bacteriological results of these two first customer locations only.

The total chlorine residual ranged from 1.53-2.23 mg/L (Appendix A, Table 2), with a median value of 1.86 mg/L (Figure 25).

The treated water leaving the Goldstream Water Treatment Plant had the following physical and chemical characteristics:

- Median pH: 7.4
- Median Alkalinity: 16.20 mg/L
- Median Colour: 2.0 TCU
- Median Total Organic Carbon: 1.85 mg/L
- Median Conductivity (25°C): 50.30 μ S/cm
- Median Turbidity: 0.2 NTU

The values of the parameters above are consistent with those of previous years.

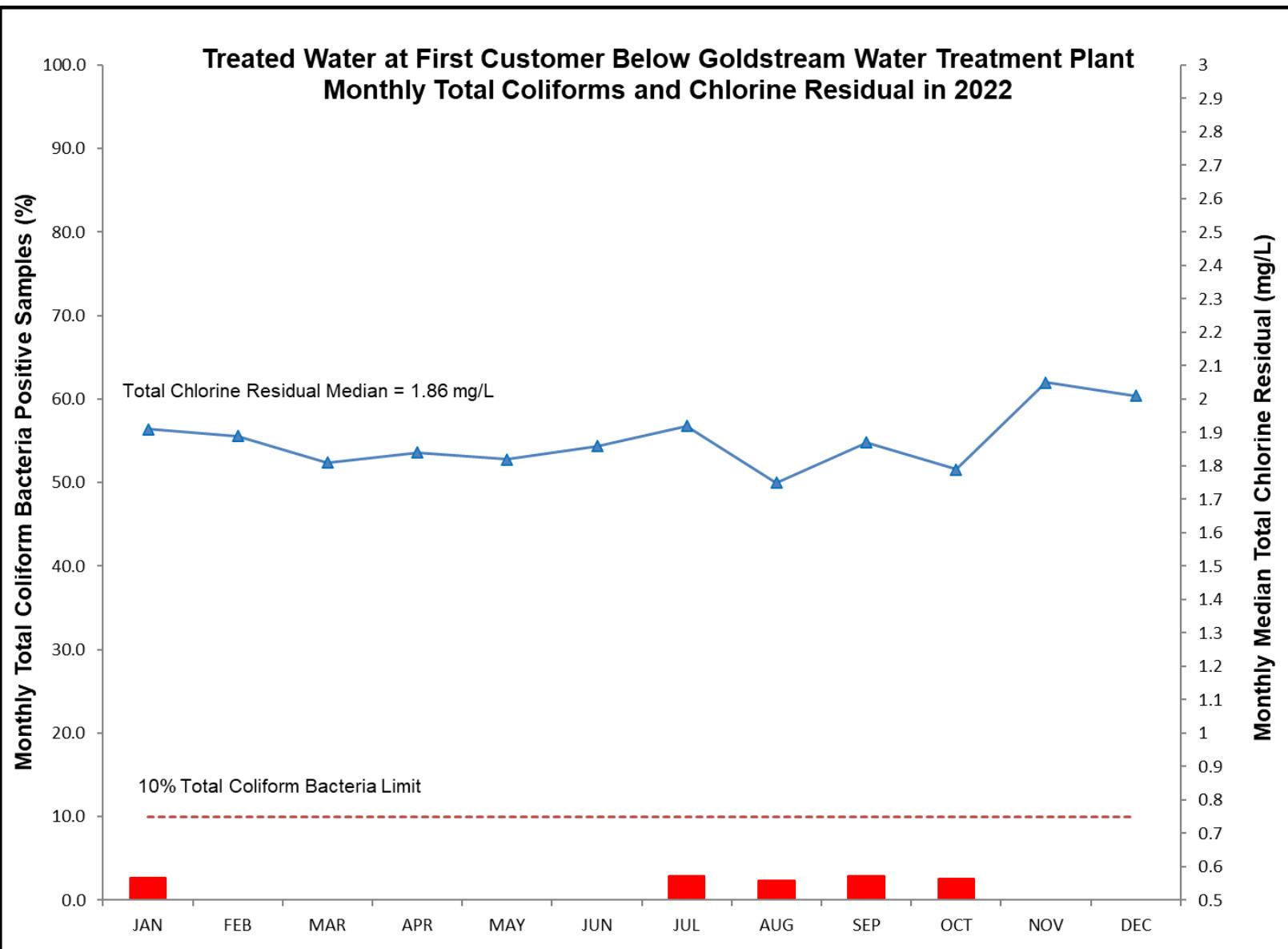


Figure 25 Treated Water at First Customer Locations below Goldstream Water Treatment Plant; Monthly Total Coliforms and Chlorine Residual in 2022

7.2.2 Sooke River Road Water Treatment Plant

Bacteriological Results after UV Treatment. Figure 26 shows the results from 37 samples collected and analyzed just downstream of the UV reactors. The results indicate that the UV treatment is capable of greatly reducing the *E. coli* and total coliform concentrations. Only on one occasion, and only in very low concentration, have total coliform bacteria been found downstream of the UV treatment. This is evidence of a very effective UV disinfection stage at this plant. The UV treatment is followed up by chlorination disinfection, designed to kill viruses and bacteria. These multiple disinfection stages are important components of the multi-barrier concept, which eliminates the reliance on only one module to achieve compliance.

Turbidity. The Sooke River Road Water Treatment Plant experienced one adverse turbidity event in 2022.

December 20, 2022: A power outage at the Head Tank due to adverse weather conditions in the evening of December 19, 2022, and a generator failure led to extremely high flows through Main #10 and #11 between the Intake Tower and the Head Tank. These high flows mobilized pipe sediments in these two mains, which caused a turbidity spike at the Sooke plant in the morning of December 20, 2022. The turbidity at the Sooke plant rose to 1.5 NTU for about 50 minutes.

2022 UV Treated Water at Sooke River Road Water Treatment Plant Total Coliforms Before and After UV Treatment

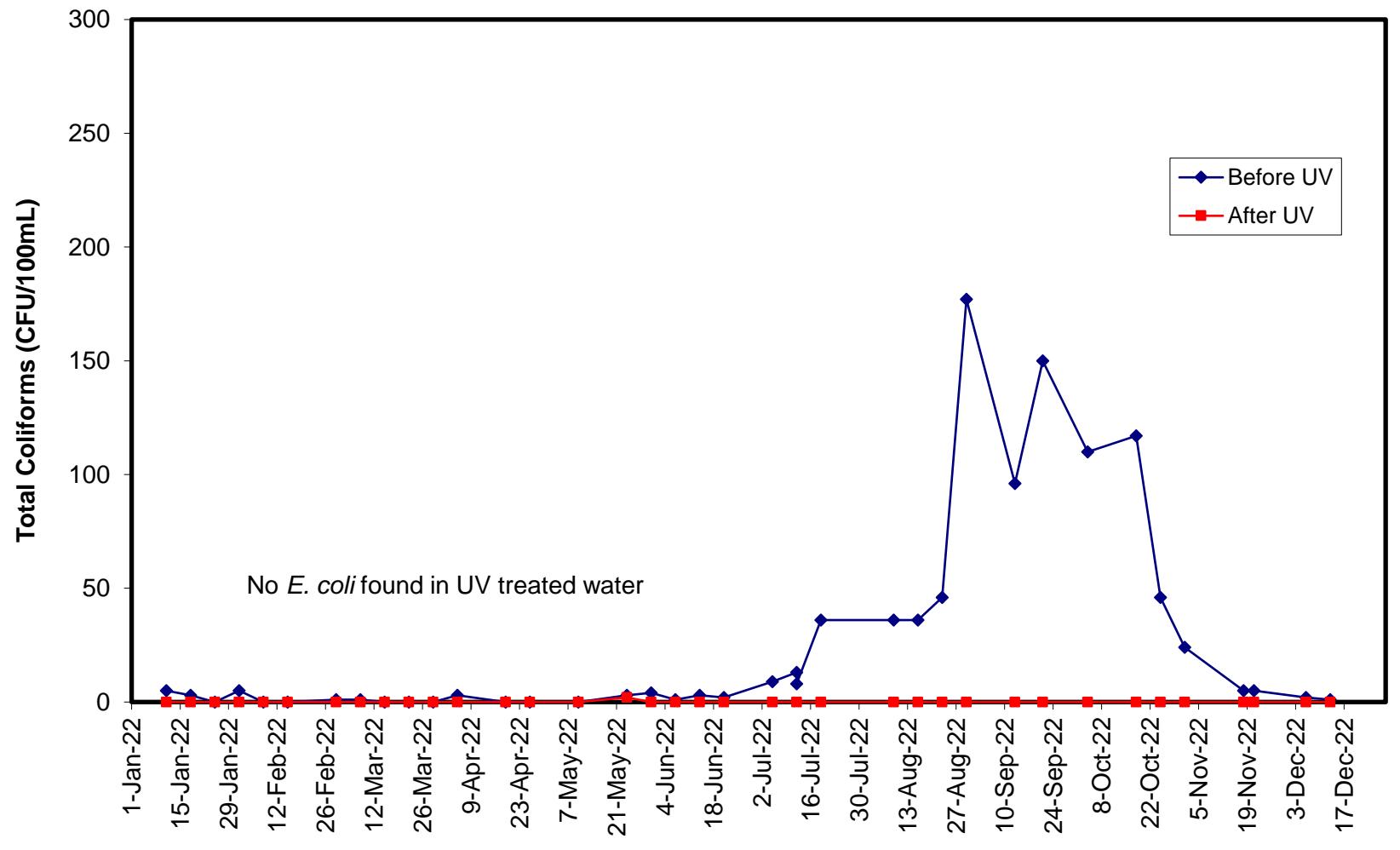


Figure 26 2022 UV Treated Water at Sooke River Road Water Treatment Plant Total Coliforms Before and After UV Treatment

Treated Water at First Customer. The data collected from the treated water sampling location near the first customer below the Sooke River Road Water Treatment Plant indicated that the bacteriological quality of the disinfected water was good in all months of 2022 (Figure 27).

No total coliform bacteria were detected in all 39 samples from this sampling station in 2022.

There were two total coliform-positive samples in 39 samples from this sampling station throughout the year. One positive sample occurred on June 21 and another on August 9. Both were very low total coliform concentrations and no subsequent resample was positive for total coliform bacteria.

Due to the low number of samples per month at this sampling station (four per month), the total coliform-positive results exceeded 10% of the monthly totals at this first customer location. None of the positive results were in exceedance of the 10 CFU/100 mL total coliform limit, as per *Drinking Water Protection Regulation*. The negative resample results ruled out a breach in the system and any real contamination of the treated water. While the regulations require 90% of all monthly samples in the entire system to be free of total coliform bacteria, the CRD monitors the first customer locations based on even more stringent criteria, where water quality is gauged on the bacteriological results of this first customer locations only. While total coliform hits at this sampling station are rare and unusual, they do occur from time to time and are likely a result of sampling error. These rare hits in the context of the aforementioned circumstances do not pose a risk to public health.

The total chlorine residual ranged from 1.28 - 2.38 mg/L with a median value of 2.03 mg/L.

The treated water leaving the Sooke River Road Water Treatment Plant had the following physical and chemical characteristics:

- Median pH: 7.5
- Median Alkalinity: 15.90 mg/L
- Median Colour: 2.0 TCU
- Median Conductivity (25°C): 52.70 μ S/cm
- Median Turbidity: 0.25 NTU

The values of the parameters above are consistent with those of previous years.

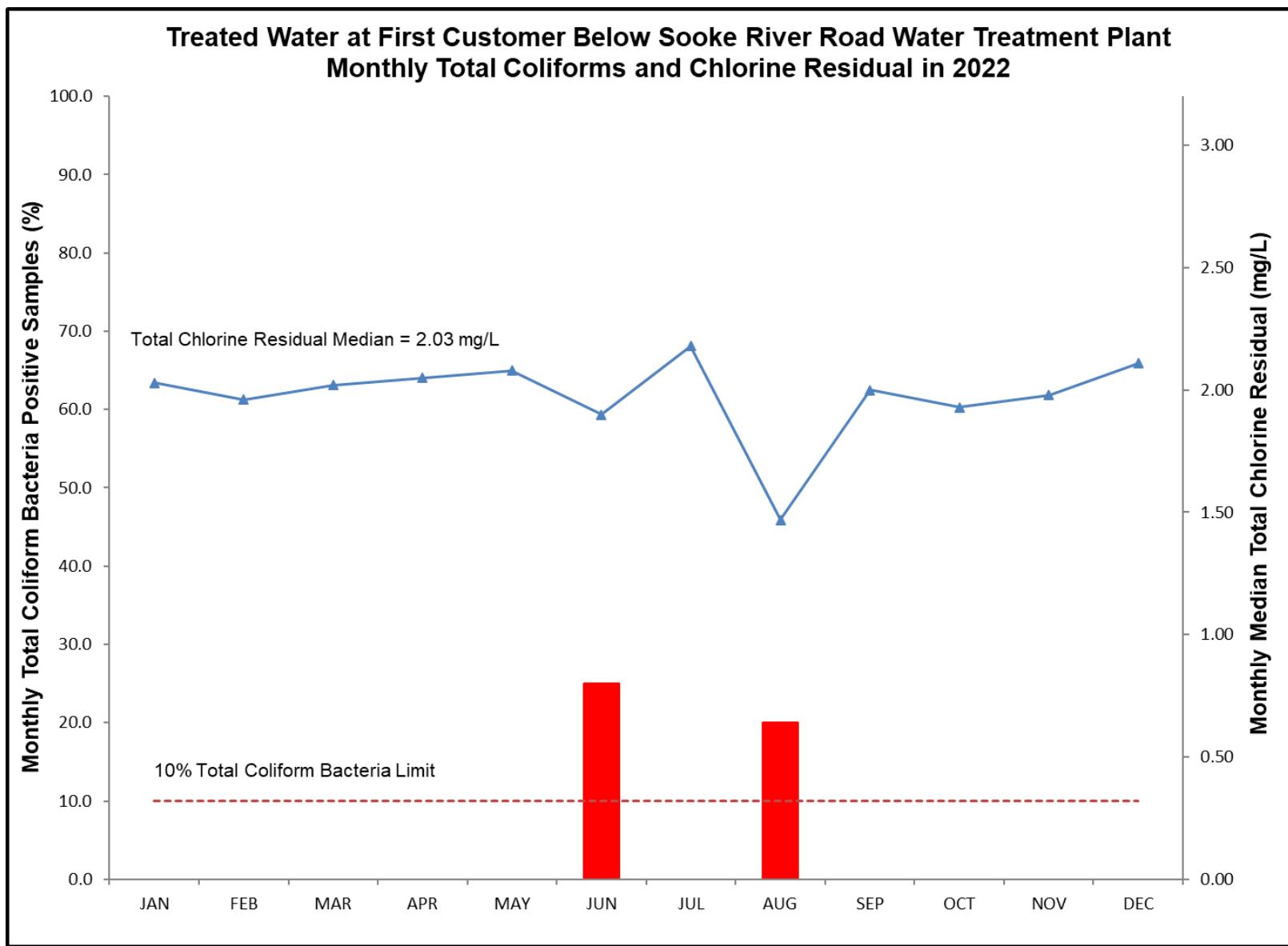


Figure 27 Treated Water at First Customer below Sooke River Road Water Treatment Plant, Monthly Total Coliforms and Chlorine Residual in 2022

7.3 CRD Transmission System Results

The following sections summarize the water quality data collected and analyzed for monitoring and verifying the safety of the drinking water conveyed through the transmission system before it reaches the municipal distribution systems. Bacteriological results of the samples collected in the transmission system are considered for compliance purposes. There is no applicable requirement for monthly sample numbers for a transmission system. The number of samples collected monthly from the CRD Transmission System infrastructure was based on a water quality risk assessment, and based on professional judgement.

7.3.1 Transmission Mains

The CRD transmission mains were sampled in 19 different sampling locations. The sampling locations for CRD transmission mains also include the Main #4 and Main #5 first customer sampling stations. In 2022, a total of 872 bacteriological and 848 water chemistry samples were collected and analyzed.

Bacteriological Results. Figure 28 and Table 1 show the results from 872 CRD transmission main samples collected and analyzed in 2022. The results (no *E. coli* and few total coliform bacteria detected) indicate that the water delivered through the transmission mains was bacteriologically safe. This system complied with the 10% total coliform-positive limit for all months. One sample each in July and August exceeded the 10 CFU/100 mL total coliform concentration threshold. There were no consecutive positive samples in 2022.

There were no *E. coli* or total coliform positive samples in 2022.

Chlorine Residual. Table 1 and Figure 28 demonstrate that the annual median total chlorine concentration in the transmission mains was 1.63 mg/L and, therefore, provides for adequate secondary disinfection within the transmission system and within most areas of the downstream municipal distribution systems. In October, the declining total chlorine levels almost reached the operational minimum target of 1.5 mg/L at the Main #4 and #5 First Customer locations. Hence, the chlorine dosage was increased in November 2022.

Water Temperature. The annual median water temperature in the transmission mains was 9.3°C, with monthly medians ranging between 5.1°C (January) and 17.0°C (September) (Table 1). Based on these results, the water temperatures in the transmission mains were lower than in previous years.

Table 1 2022 Bacteriological Quality of the CRD Transmission Mains

Month	Samples Collected	Total Coliforms (CFU/100mL)				E. coli CFU/100mL	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU	
JAN	72	1	1.4	0	0	0	39	0	1.70	5.1
FEB	69	0	0.0	0	0	0	38	0	1.66	5.5
MAR	85	0	0.0	0	0	0	45	0	1.56	6.3
APR	68	0	0.0	0	0	0	38	0	1.62	7.6
MAY	76	0	0.0	0	0	0	43	0	1.56	9.1
JUN	78	0	0.0	0	0	0	47	2	1.65	11.5
JUL	69	3	4.3	0	1	0	36	0	1.61	12.8
AUG	86	3	3.5	0	1	0	44	0	1.58	14.4
SEP	67	1	1.5	0	0	0	35	0	1.57	17.0
OCT	72	1	1.4	0	0	0	41	0	1.56	16.7
NOV	72	1	1.4	0	0	0	39	0	1.77	9.0
DEC	58	0	0.0	0	0	0	35	0	1.77	6.2
Total:	872	10	1.1	0	2	0	480	2	1.63	9.3

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. The CRD collected six sets of samples for a disinfection byproduct analysis from a transmission main at Mills Road. The annual average total trihalomethane (TTHM) and annual average total haloacetic acid (HAA) concentrations were 17.5 and 17.2 µg/L, respectively, well below the MAC (TTHM = 100 and HAA = 80 µg/L) stipulated in the Canadian guidelines. These annual averages are in-line with the pre-2021 disinfection byproduct concentrations. At the beginning of 2021, the GVDWS was switched to free chlorine for about one month, which resulted in higher disinfection byproduct concentrations (see [2021 Annual Report](#)). While this was a short-term effect and concentrations remained below the health limits, these results have demonstrated the importance of using chloramines for secondary disinfection for the purpose of disinfection byproduct management. This sampling location was also sampled and tested for the disinfection byproduct Nitrosodimethylamine (NDMA), a newly-listed parameter that is classified as “probably carcinogenic” by Health Canada and associated with disinfection using chloramines. The Canadian guidelines MAC for NDMA is 40 ng/L. All NDMA results at this location were below the detection limit of 1.9 ng/L.

This was the only transmission main where disinfection byproduct samples were collected (bi-monthly). The CRD disinfection byproduct monitoring focuses on locations with higher potential for disinfection byproduct formation, such as system extremities with high water age or areas downstream of re-chlorination stations (free chlorine).

Metals. The CRD Water Quality Monitoring Program for the CRD Transmission System included regular metals tests in three strategic locations, where the water transitions from the CRD Transmission System to a downstream distribution system. In particular, the CRD pays attention to metals commonly found in drinking water, such as iron, manganese, copper and lead. All metal results were below the Canadian guideline.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Physical/Chemical Parameters. The drinking water in the regional transmission mains had the following physical and chemical characteristics:

- Median pH: 7.4
- Median CaCO₃ Hardness: 16.5 mg/L
- Median Alkalinity: 16.40 mg/L
- Median Colour: 2.00 TCU
- Median Turbidity: 0.25 NTU
- Median Conductivity (25°C): 50.60 µS/cm

Compliance Status. The transmission mains of the CRD Transmission System were in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*, except for July and August, with two total coliform-positive results in exceedance of 10 CFU/100 mL. Immediate resamples following these results were negative for total coliform bacteria and did, therefore, confirm the safety of the drinking water.

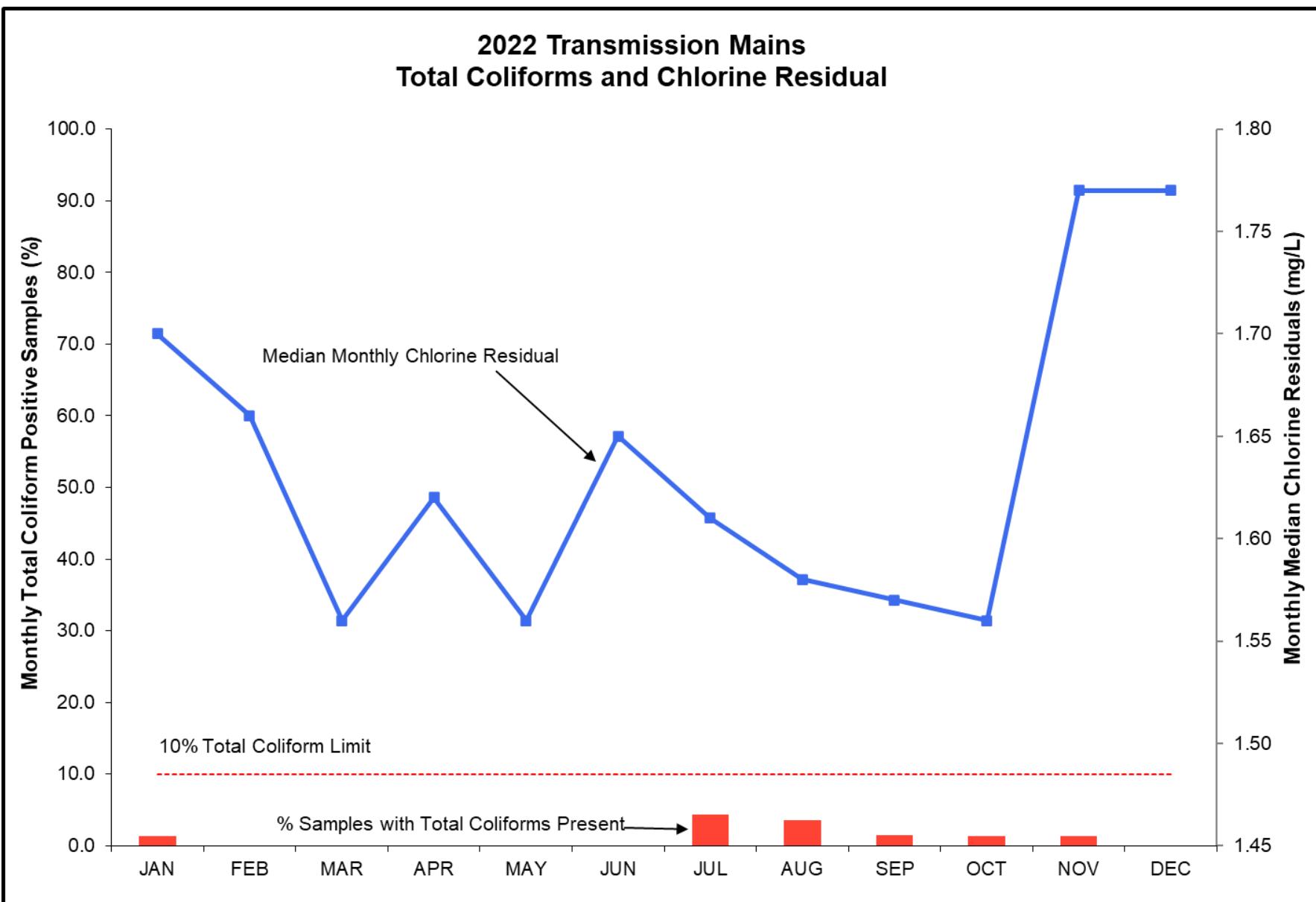


Figure 28 Transmission Mains Total Coliforms and Chlorine Residual in 2022

7.3.2 Supply Storage Reservoirs

The CRD supply storage reservoirs were sampled in seven different sampling locations. In 2022, a total of 166 bacteriological and 79 water chemistry samples were collected and analyzed.

Bacteriological Results. Typically, storage reservoirs are vulnerable to bacteria regrowth and potential contamination, due to the long retention times and generally lower chlorine residual concentrations. Because of the higher risks to water quality in reservoirs compared to pipes, the CRD typically monitors the water quality closely in all of its storage reservoirs and follows a rigorous maintenance schedule at these facilities.

Figure 29 and Table 2 show the 2022 results from the samples on the CRD supply storage reservoirs that are considered part of the CRD Transmission System. There was one total coliform-positive sample in June and two more in July (Table 2). The June total coliform positive sample and one of the July positive samples exceeded the 10 CFU/100 mL total coliform concentration threshold. This system complied with the 10% total coliform-positive limit for all months except for July when 12.5% of all collected bacteriological samples tested positive for total coliforms. All resamples following a total coliform positive hit tested negative for total coliform bacteria. The annual total coliform positive percentage was well below the 10% limit at 1.8% (Table 3).

The number of total coliform positive tests and the number of 10 CFU/100mL exceedances in June and July in the Supply Storage Reservoirs were unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. Such suspicious test results occurred between June and September 2022 randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

There were no *E coli* or total coliform positive samples in 2022.

Table 2 2022 Bacteriological Quality of Storage Reservoirs

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity		Chlorine Residual Median mg/L as Cl ₂	Water Temp. Median ° C
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU	
JAN	9	0	0.0	0	0	0	0	2	0	1.53
FEB	14	0	0.0	0	0	0	0	2	0	1.44
MAR	18	0	0.0	0	0	0	0	2	0	1.42
APR	16	0	0.0	0	0	0	0	1	0	1.39
MAY	11	0	0.0	0	0	0	0	2	0	1.30
JUN	15	1	6.7	0	1	0	0	2	0	1.44
JUL	16	2	12.5	0	1	0	0	2	0	1.42
AUG	14	0	0.0	0	0	0	0	2	0	1.29
SEP	18	0	0.0	0	0	0	0	2	0	1.35
OCT	14	0	0.0	0	0	0	0	1	0	1.33
NOV	13	0	0.0	0	0	0	0	2	0	1.58
DEC	8	0	0.0	0	0	0	0	1	0	1.49
Total:	166	3	1.8	0	2	0	21	0	1.42	10.6

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*; Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Chlorine Residual. Table 2 and Figure 29 indicate that the median total chlorine concentration in the storage reservoirs ranged from 1.29-1.58 mg/L, with an annual median total chlorine concentration of 1.42 mg/L. These results demonstrate adequate secondary disinfection within the Supply Storage Reservoirs.

Water Temperature. The annual median water temperature in the storage reservoirs was 10.6°C, with monthly medians ranging between 6.0°C (January) and 17.2°C (September) (Table 2).

Disinfection Byproducts. The CRD collected a total of 36 samples for a disinfection byproduct analysis. The samples were collected at two storage reservoirs in the CRD Transmission System (Cloake Hill and Upper Dean Park reservoirs). Upstream of both locations, the CRD maintains a re-chlorination station that can boost free chlorine concentrations, if the residuals fall below 0.2 mg/L. While this procedure is rarely exercised, any free chlorine concentration can lead to an increase in disinfection byproduct formation. The annual average TTHM and HAA concentrations were 17.2 and 17.3 µg/L at Cloake Hill and 17.7 and 12.7 µg/L at Upper Dean, respectively, well below the MAC (TTHM = 100 and HAA = 80 µg/L) stipulated in the Canadian guidelines. These annual averages are in-line with the pre-2021 disinfection byproduct concentrations. At the beginning of 2021, the GVDWS was switched to free chlorine for about 1 month which resulted in higher disinfection byproduct concentrations (see [2021 Annual Report](#)). While this was a short-term effect and concentrations remained below the health limits, these results have demonstrated the importance of using chloramines for secondary disinfection for the purpose of disinfection byproduct management. In five out of six samples, the NDMA concentrations at both locations were below the detection limit (1.9 ng/L). One sample from Upper Dean Park reservoir recorded a very low NDMA concentration of 2.1 ng/L. All NDMA results were therefore well below the Canadian guideline MAC of 40 ng/L.

Physical/Chemical Parameters. The drinking water in the regional supply storage reservoirs had the following physical and chemical characteristics in 2022:

- Median pH: 7.7
- Median Alkalinity: 16.1 mg/L
- Median Colour: 2.5 TCU
- Median Turbidity: 0.25 NTU
- Median Conductivity (25°C): 51.40 µS/cm

Metals. No data for 2022.

Nitrification. Nitrification occurs in many chloraminated water systems. It is a complex bacteriological process in which ammonia is oxidized initially to nitrite and then to nitrate and is caused by two groups of bacteria that have low growth rates relative to other bacteria. Water temperature seems to be a critical factor for nitrification in distribution systems, as it has been almost exclusively associated with warm water temperatures. Nitrification is also associated with high water age (reservoirs, dead ends, low-flow pipes) and with sediment biofilms.

Monitoring for nitrifying bacteria directly is inefficient; however, the extent of nitrification in the distribution system can be monitored by measuring chlorine residuals and nitrite (also nitrate, free ammonia). When the chlorine residuals drop (in the absence of any pipe break or plant disinfection failure), accompanied by increases of nitrite, then nitrification is occurring. Since Greater Victoria's source water has no background nitrite, the presence of nitrite in the distribution system is the best indicator of nitrification.

The control of nitrification in a chloraminated distribution system involves limiting the excess free ammonia leaving the disinfection plant, maintaining an adequate chlorine residual throughout the distribution system, minimizing water age in storage facilities and in the low-flow areas of the distribution system, and maintaining annual flushing routines to limit the accumulation of sediment and biofilm in the distribution system piping. CRD Water Quality Operations staff, in conjunction with Integrated Water Services Department Operations and Engineering staff, are undertaking projects to optimize the reservoir and pipe-cleaning schedules to address nitrification and other water quality affecting processes throughout the

distribution systems. The new hypochlorite plant at the Goldstream Water Treatment Plant has improved the chemical dosing system and reduced the potential for free ammonia in the treated water.

Compliance Status. The CRD-owned and operated supply storage reservoirs in the CRD Transmission System were in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* except for June, with one total coliform-positive result in exceedance of 10 CFU/100 mL, and July, with an exceedance of the 10% total coliform-positive limit and one total coliform-positive result in exceedance of 10 CFU/100 mL. In all these cases, immediate resamples confirmed the safety of the drinking water.

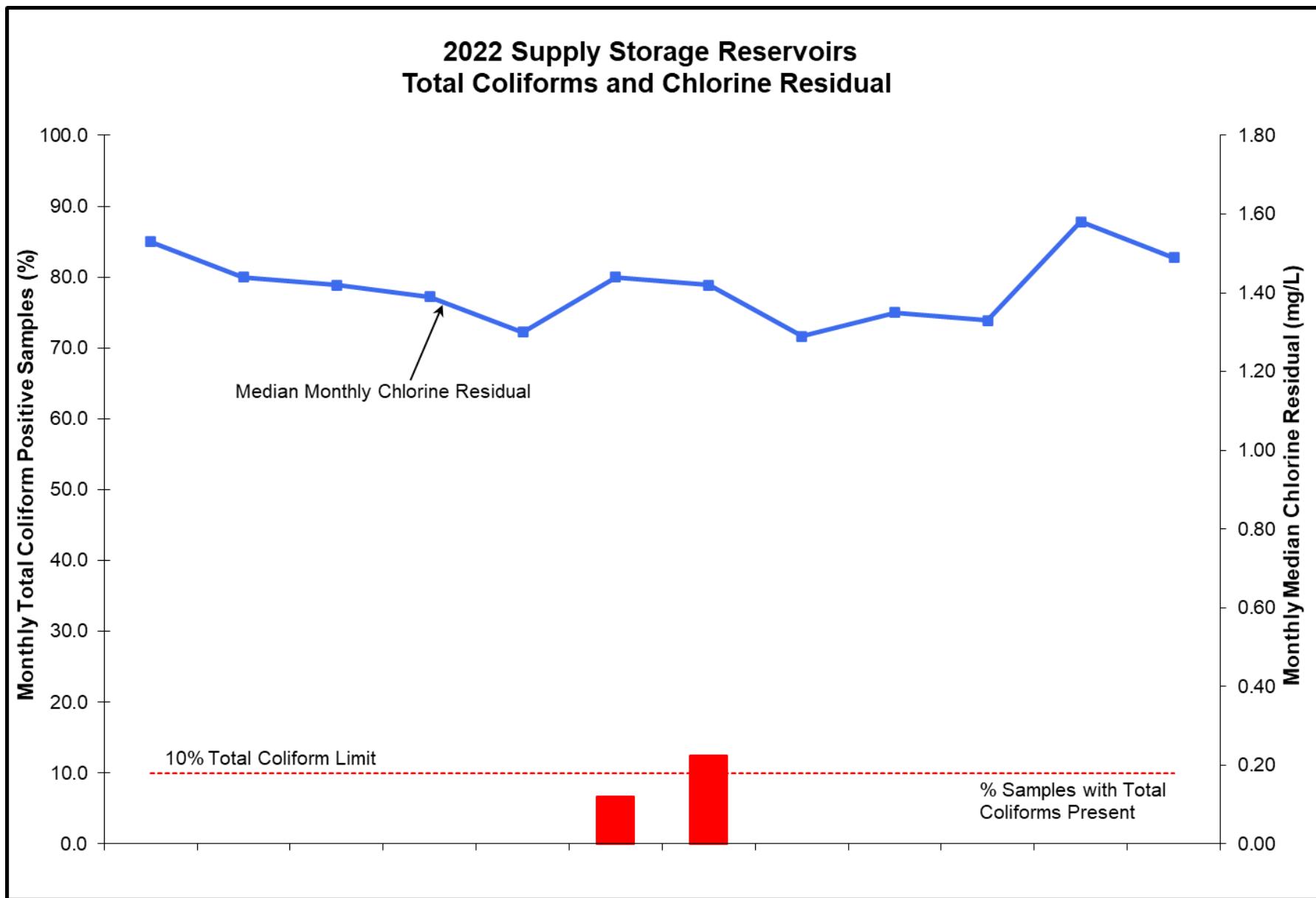


Figure 29 Supply Storage Reservoirs Total Coliforms and Chlorine Residual in 2022

7.4 Distribution System Results

The following sections summarize the water quality monitoring results within the various distribution systems and indicate the compliance status of each system.

7.4.1 Juan de Fuca Water Distribution System – Westshore Municipalities (CRD-owned and operated)

In 2022, 32 distribution system sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the Westshore system.

Sample Collection. In 2022, 903 bacteriological and 248 water chemistry samples were collected from the Juan de Fuca Water Distribution System (Table 3). Based on current population data for the Westshore municipalities, 66 samples are required for bacteria testing each month. Table 3 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Total coliforms were found in seven samples throughout the year. All resamples, immediately collected after a total coliform positive result, were free of total coliform bacteria. No sample exceeded the 10 CFU/100 mL total coliform concentration threshold. This system complied with the 10% total coliform-positive limit for all months of the year during 2022. The annual total coliform positive percentage was well below the 10% limit at 0.8% (Table 3).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

There were no *E coli*-positive samples in 2022.

Table 3 2022 Bacteriological Quality of the Juan de Fuca Distribution System – Westshore Municipalities (CRD)

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU	
JAN	71	0	0.0	0	0	0	0	6	0	1.39
FEB	71	0	0.0	0	0	0	0	8	0	1.31
MAR	84	0	0.0	0	0	0	0	8	0	1.32
APR	73	0	0.0	0	0	0	0	7	0	1.34
MAY	71	0	0.0	0	0	0	0	8	0	1.23
JUN	83	0	0.0	0	0	0	0	9	0	1.30
JUL	71	3	4.2	0	0	0	0	8	0	1.09
AUG	82	0	0.0	0	0	0	0	8	0	1.03
SEP	73	2	2.7	0	0	0	0	7	0	1.06
OCT	74	2	2.7	0	0	0	0	7	0	1.07
NOV	81	0	0.0	0	0	0	0	6	0	1.04
DEC	69	0	0.0	0	0	0	0	4	0	1.38
Total:	903	7	0.8	0	0	0	0	86	0	1.24
										10.7

Notes:

TC = Total Coliforms, E. coli = Escherichia coli, Cl2 = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Chlorine Residual. The annual median chlorine residual in the Westshore municipalities of the Juan de Fuca Water Distribution System was 1.24 mg/L (Table 2). The lowest monthly median was in August (1.03 mg/L) and the maximum monthly median was in January (1.39 mg/L) (Figure 30, Table 3).

Water Temperature. The annual median water temperature in the Juan de Fuca Water Distribution System was 10.7°C, with monthly medians ranging between 5.6°C (January) and 17.8°C (September) (Table 3).

Disinfection Byproducts. One location in the Juan de Fuca Water Distribution System had 18 samples collected for disinfection byproducts. The annual average TTHM and haloacetic acid (HAA5) concentrations in six samples each were 15.5 µg/L and <5 µg/L, respectively, far below the Canadian guideline MAC (TTHM = 100; HAA5 = 80). In five samples, the NDMA concentrations were below the detection limit of 1.9 ng/L, and in one sample 1.92 ng/L, well below the Canadian guideline MAC of 40 ng/L.

Physical/Chemical Parameters. The drinking water in the Westshore municipalities of the Juan de Fuca Water Distribution System had the following physical and chemical characteristics in 2022:

- Median pH: 7.4
- Median CaCO₃ Hardness: 16.5 mg/L
- Median Alkalinity: 16.60 mg/L
- Median Colour: 2.0 TCU
- Median Conductivity (25°C): 52.50 µS/cm
- Median Turbidity: 0.20 NTU

Metals. One sampling station in this system was sampled for metals bi-monthly. All metals were below the Canadian guideline limits.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems as well as in the vast majority of private plumbing systems is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Westshore municipalities of the Juan de Fuca Water Distribution System were in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2022.

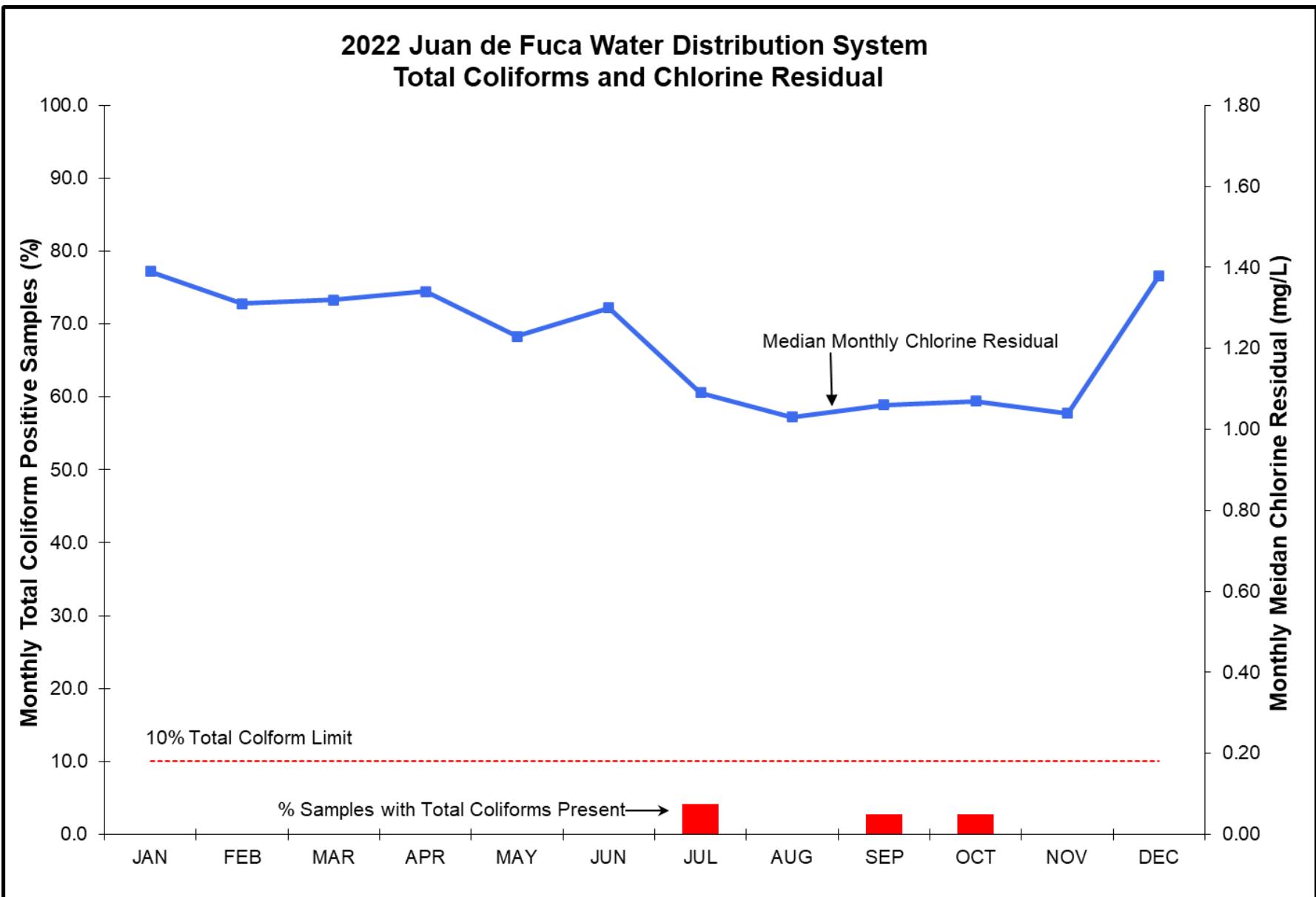


Figure 30 Juan de Fuca – Westshore Distribution System Total Coliforms and Chlorine Residual in 2022

7.4.2 Sooke/East Sooke Distribution System (CRD-Owned and Operated)

In 2022, 20 sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in Sooke/East Sooke system. Half of all Sooke/East Sooke sampling stations were typically sampled once per week for a bi-weekly sampling frequency of all stations.

Sample Collection. In 2022, 384 bacteriological and 206 water chemistry samples were collected from the Sooke/East Sooke Distribution System (Table 4). Based on current population data for the District of Sooke, 13 samples are required for bacteria testing each month. Table 4 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Total coliforms were found in six samples throughout the year. All resamples, immediately collected after a total coliform positive result, were free of total coliform bacteria. No sample exceeded the 10 CFU/100 mL total coliform concentration threshold. This system complied with the 10% total coliform-positive limit for all months of the year during 2022. The annual total coliform positive percentage was well below the 10% limit at 1.6% (Table 4).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

No *E. coli* bacteria were found in any sample collected in 2022 (Table 4).

Table 4 2022 Bacteriological Quality of the Sooke/East Sooke Distribution System (CRD)

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100m L)	Turbidity			Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU		
JAN	30	0	0.0	0	0	0	0	6	0	1.20	6.0
FEB	29	0	0.0	0	0	0	0	9	1	1.20	6.5
MAR	48	0	0.0	0	0	0	0	12	0	1.13	7.3
APR	30	0	0.0	0	0	0	0	8	0	1.09	8.9
MAY	31	1	3.2	0	0	0	0	9	0	0.95	11.1
JUN	32	2	6.3	0	0	0	0	7	0	1.08	13.1
JUL	30	0	0.0	0	0	0	0	9	0	1.04	15.5
AUG	48	3	6.3	0	0	0	0	11	0	0.99	17.2
SEP	25	0	0.0	0	0	0	0	7	0	0.53	17.3
OCT	31	0	0.0	0	0	0	0	7	1	0.68	15.3
NOV	31	0	0.0	0	0	0	0	9	0	0.83	9.8
DEC	19	0	0.0	0	0	0	0	5	0	1.10	7.2
Total:	384	6	1.6	0	0	0	99	2	1.02	10.9	

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Chlorine Residual. The annual median chlorine residual in the Sooke/East Sooke Distribution System was 1.02 mg/L (Table 4, Figure 31). The lowest monthly median was in September (0.53 mg/L), and the maximum monthly median was in January/February (1.20 mg/L). The low chlorine residual in early fall is typical for the Sooke/East Sooke System, due to the increased chlorine demand in the warm water season.

Water Temperature. The annual median water temperature in the Sooke/East Sooke Distribution System was 10.9°C, with monthly medians ranging between 6.0°C (January) and 17.3°C (September) (Table 4).

Disinfection Byproducts. One location in the Sooke distribution system had 18 samples collected for disinfection byproducts. The annual average TTHM and HAA5 concentrations from six samples each were 26.7 and 23.5 µg/L, respectively, far below the Canadian guideline MAC (TTHM = 100; HAA5 = 80). In six samples, the NDMA concentrations were below the detection limit of 1.9 ng/L, well below the Canadian guideline MAC of 40 ng/L.

Physical/Chemical Parameters. The drinking water in the Sooke/East Sooke Distribution System had the following physical and chemical characteristics:

- Median pH: 7.5
- Median CaCO₃ Hardness: 16.8 mg/L
- Median Colour: 2.0 TCU
- Median Alkalinity: 16.10 mg/L
- Median Turbidity: 0.20 NTU
- Median Conductivity (25°C): 53.70 µS/cm

Metals. The CRD Water Quality Monitoring Program for the Sooke/East Sooke system included bi-monthly metal tests in two strategic locations in 2022: first customer sampling station on Sooke River Road, and Whiffen Spit Road. All metallic parameters, including lead, were well below the Canadian guideline limits.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Sooke/East Sooke Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2022.

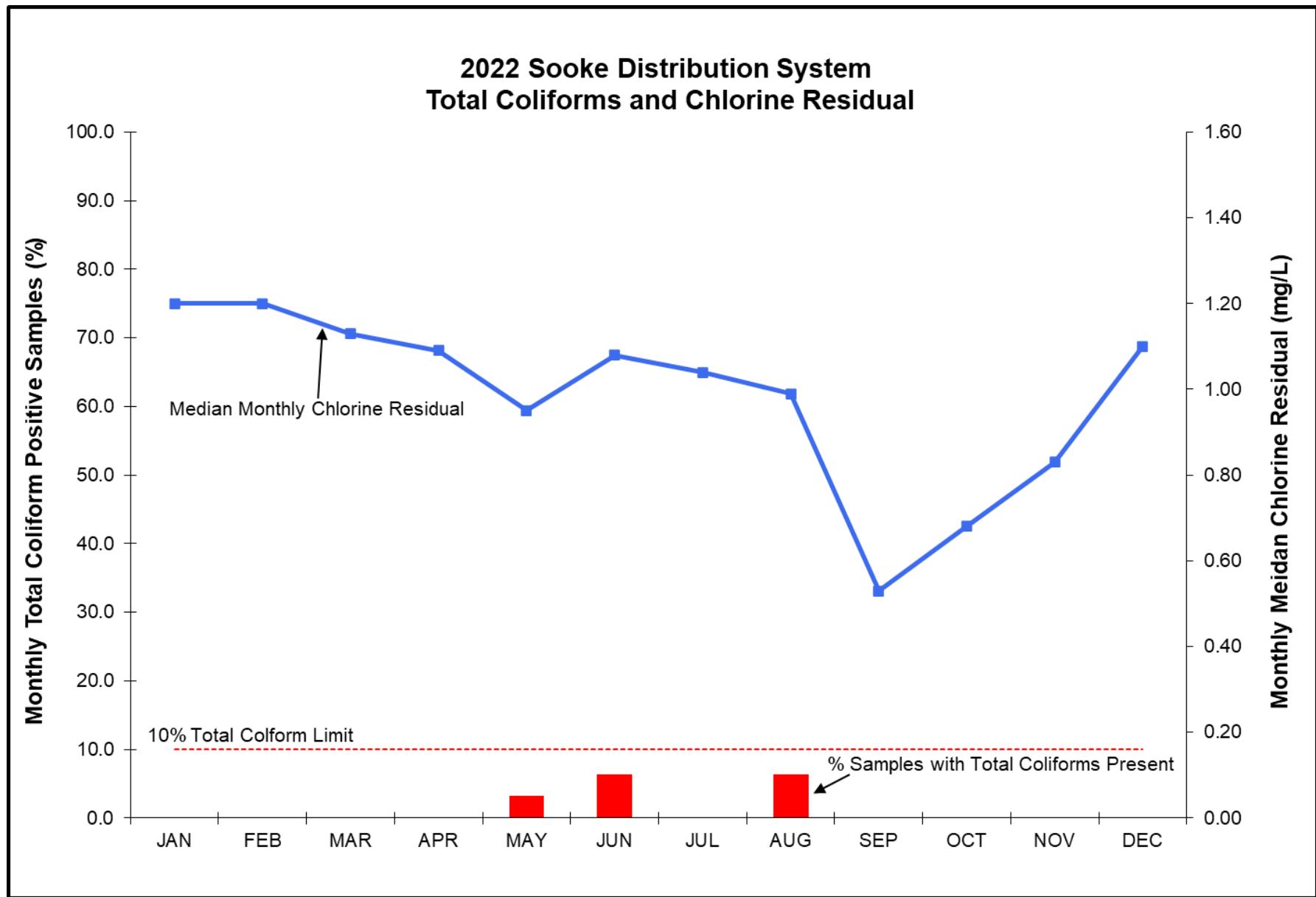


Figure 31 Sooke/East Sooke Distribution System Total Coliforms and Chlorine Residual in 2022

7.4.3 Central Saanich Distribution System – (District of Central Saanich-Owned and Operated)

In 2022, 11 sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the Central Saanich Distribution System. Central Saanich sampling stations are part of the daily distribution sampling runs by CRD staff.

Sample Collection. In 2022, 274 bacteriological and 218 water chemistry samples were collected from the Central Saanich Distribution System (Table 5). Based on current population data for the District of Central Saanich, 17 samples are required for bacteria testing each month. Table 5 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Total coliforms were found in four samples throughout the year. All resamples, immediately collected after a total coliform positive result, were free of total coliform bacteria. No sample exceeded the 10 CFU/100 mL total coliform concentration threshold. This system complied with the 10% total coliform-positive limit for all months of the year during 2022. The annual total coliform positive percentage was well below the 10% limit at 1.5% (Table 5).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

No *E. coli* bacteria were found in any sample collected in 2022 (Table 5).

Chlorine Residual. The annual median chlorine residual in the Central Saanich Distribution System was 1.46 mg/L (Table 5). The lowest monthly median was in October (1.34 mg/L) and the maximum monthly median was in December (1.62 mg/L) (Figure 32, Table 5).

Water Temperature. The annual median water temperature in the Central Saanich Distribution System was 11.4°C, with monthly medians ranging between 6.5°C (January) and 17.8°C (September) (Table 5).

Table 5 2022 Bacteriological Quality of the Central Saanich Distribution System

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples Collected	Samples >1 NTU		
JAN	23	0	0.0	0	0	0	10	0	1.57	6.5
FEB	21	0	0.0	0	0	0	10	0	1.41	7.0
MAR	25	0	0.0	0	0	0	7	0	1.45	7.8
APR	20	0	0.0	0	0	0	9	0	1.45	9.2
MAY	22	0	0.0	0	0	0	11	0	1.42	10.8
JUN	26	1	3.8	0	0	0	12	0	1.47	13.1
JUL	20	0	0.0	0	0	0	10	0	1.41	15.1
AUG	25	0	0.0	0	0	0	10	0	1.42	16.8
SEP	25	2	8.0	0	0	0	9	0	1.45	17.8
OCT	23	0	0.0	0	0	0	10	0	1.34	16.7
NOV	26	1	3.8	0	0	0	10	0	1.53	11.2
DEC	18	0	0.0	0	0	0	7	0	1.62	8.4
Total:	274	4	1.5	0	0	0	115	0	1.46	11.4

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2022.

Physical/Chemical Parameters. The drinking water in the Central Saanich Distribution System had the following physical and chemical characteristics in 2022:

- Median pH: 7.6
- Median Turbidity: 0.25 NTU
- Median Colour: 2.0 TCU
- Median Alkalinity: 16.40 mg/L
- Median Conductivity (25°C): 51.20 μ S/cm

Metals. No data for 2022.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Central Saanich Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2022.

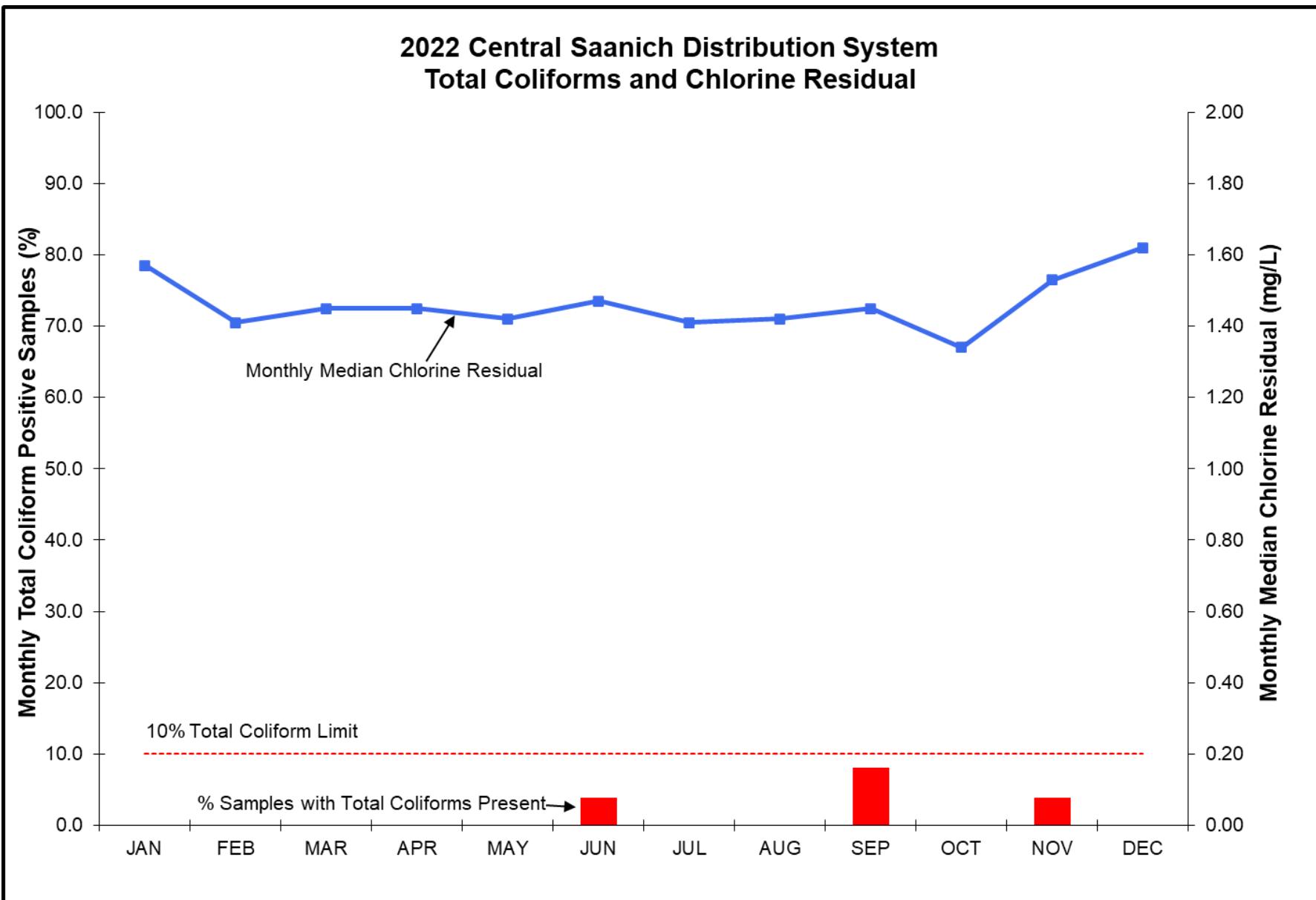


Figure 32 Central Saanich Distribution System Total Coliforms and Chlorine Residual in 2022

7.4.4 North Saanich Distribution System – (District of North Saanich-Owned and Operated)

In 2022, eight sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the North Saanich Distribution System. North Saanich sampling stations are part of the daily distribution sampling runs by CRD staff.

Sample Collection. In 2022, 235 bacteriological and 81 water chemistry samples were collected from the North Saanich Distribution System (Table 6). Based on current population data for the District of North Saanich, 12 samples are required for bacteria testing each month. Table 6 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. There were five total coliform-positive samples in 2022 (Table 6). Two of the three total coliform positive samples in August exceeded the 10 CFU/100 mL total coliform concentration threshold. This system complied with the 10% total coliform-positive limit for all months except for August, when 11.1% of all collected bacteriological samples tested positive for total coliforms. All resamples following a total coliform positive hit tested negative for total coliform bacteria. The annual total coliform positive percentage was well below the 10% limit at 2.1% (Table 6).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

None of the samples contained *E. coli* in 2022 (Table 6).

Table 6 2022 Bacteriological Quality of the North Saanich Distribution System

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU	
JAN	19	0	0.0	0	0	0	0	1	0	1.19
FEB	18	0	0.0	0	0	0	0	2	0	1.10
MAR	19	0	0.0	0	0	0	0	2	0	1.16
APR	18	0	0.0	0	0	0	0	2	0	1.19
MAY	18	0	0.0	0	0	0	0	2	0	1.13
JUN	22	0	0.0	0	0	0	0	3	0	1.22
JUL	18	1	5.6	0	0	0	0	2	0	1.32
AUG	27	3	11.1	0	2	0	0	2	0	1.14
SEP	20	0	0.0	0	0	0	0	1	0	1.14
OCT	19	0	0.0	0	0	0	0	2	0	1.04
NOV	21	1	4.8	0	0	0	0	3	0	1.05
DEC	16	0	0.0	0	0	0	0	1	0	1.25
Total:	235	5	2.1	0	2	0	23	0	1.15	11.4

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Chlorine Residual. The annual median chlorine residual in the North Saanich Distribution System was 1.15 mg/L (Table 6). The lowest monthly median was in October (1.04 mg/L) and the maximum monthly median was in July (1.32 mg/L) (Figure 33, Table 6).

Water Temperature. The annual median water temperature in the North Saanich Distribution System was 11.4°C, with monthly medians ranging between 7.0°C (January) and 17.5°C (September) (Table 6).

Disinfection Byproducts. No data in 2022.

Physical/Chemical Parameters. The drinking water in the North Saanich Distribution System had the following physical and chemical characteristics in 2022:

- Median pH: 7.7
- Median Colour: 2.0 TCU
- Median Turbidity: 0.20 NTU
- Median Alkalinity: 16.40 mg/L
- Median Conductivity (25°C): 52.00 µS/cm

Metals. No data in 2022.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The North Saanich Distribution System was in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* **except** for August, with two total coliform-positive results in exceedance of 10 CFU/100 mL, and an exceedance of the 10% total coliform-positive limit. In all these cases, immediate resamples confirmed the safety of the drinking water.

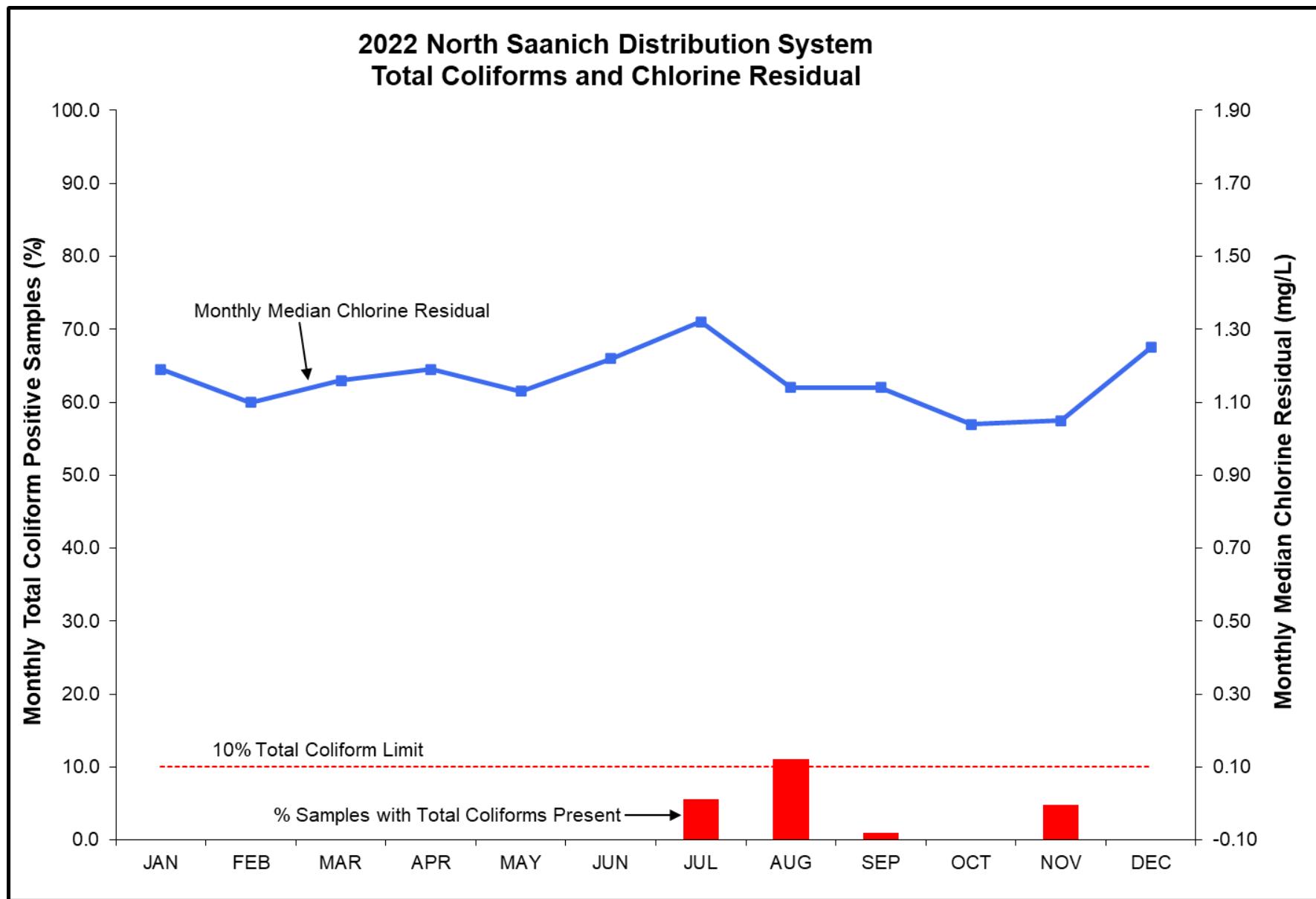


Figure 33 North Saanich Distribution System Total Coliforms and Chlorine Residual in 2022

7.4.5 Oak Bay Distribution System – (District of Oak Bay-Owned and Operated)

In 2022, eight sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the Oak Bay Distribution System. Oak Bay sampling stations are part of the daily distribution sampling runs by CRD staff.

Sample Collection. In 2022, 285 bacteriological and 160 water chemistry samples were collected from the Oak Bay Distribution System (Table 7). Based on current population data for the District of Oak Bay, 19 samples are required for bacteria testing each month. Table 7 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Five samples throughout the year tested positive for total coliform bacteria. With three total coliform hits and therefore 11.1% of all samples collected in June testing total coliform positive, this system did not comply with the 10% total coliform-positive limit for that month. All resamples following a total coliform positive hit tested negative for total coliform bacteria. No sample exceeded the 10 CFU/100 mL total coliform concentration threshold. The annual total coliform positive percentage was well below the 10% limit at 1.8% (Table 7).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

No *E. coli* bacteria were found in any sample collected in 2022 (Table 7).

Chlorine Residual. The annual median chlorine residual in the Oak Bay Distribution System was 1.46 mg/L (Table 7). The lowest monthly median was in October (1.38 mg/L) and the maximum monthly median was in December (1.61 mg/L) (Figure 34).

Water Temperature. The annual median water temperature in the Oak Bay Distribution System was 11.8°C, with monthly medians ranging between 6.7°C (January) and 18.4°C (September) (Table 7).

Table 7 2022 Bacteriological Quality of the Oak Bay Distribution System

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL)	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples Collected	Samples >1 NTU		
JAN	23	0	0.0	0	0	0	3	0	1.60	6.7
FEB	21	0	0.0	0	0	0	3	0	1.46	7.3
MAR	25	0	0.0	0	0	0	3	0	1.50	8.1
APR	21	0	0.0	0	0	0	4	1	1.45	10.1
MAY	24	0	0.0	0	0	0	5	0	1.42	11.8
JUN	27	3	11.1	0	0	0	4	0	1.40	14.0
JUL	22	1	4.5	0	0	0	3	0	1.49	15.6
AUG	26	1	3.8	0	0	0	3	0	1.39	17.0
SEP	25	0	0.0	0	0	0	3	0	1.40	18.4
OCT	24	0	0.0	0	0	0	4	0	1.38	17.4
NOV	25	0	0.0	0	0	0	3	0	1.46	10.9
DEC	22	0	0.0	0	0	0	2	0	1.61	8.0
Total:	285	5	1.8	0	0	0	40	1	1.46	11.8

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2022.

Physical/Chemical Parameters. The drinking water in the Oak Bay Distribution System had the following physical and chemical characteristics:

- Median pH: 7.7
- Median Alkalinity: 16.90 mg/L
- Median Turbidity: 0.25 NTU
- Median Conductivity (25°C): 51.30 μ S/cm
- Median Colour: 4.0 TCU

Metals. No data in 2022.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Oak Bay Distribution System was in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* except for June, with an exceedance of the 10% total coliform-positive limit. In all these cases, immediate resamples confirmed the safety of the drinking water.

2022 Oak Bay Distribution System Total Coliforms and Chlorine Residual

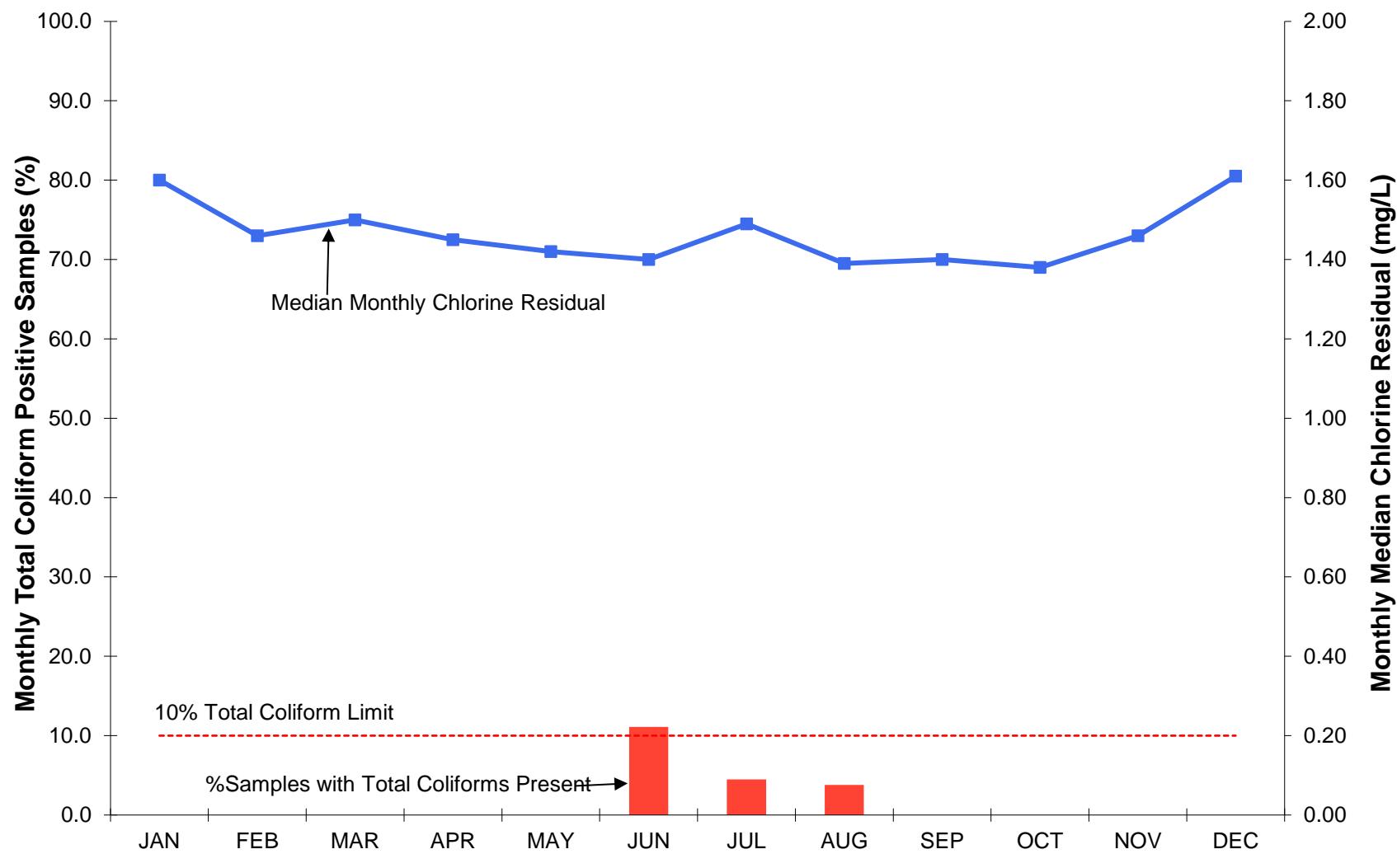


Figure 34 Oak Bay Distribution System Total Coliforms and Chlorine Residual in 2022

7.4.6 Saanich Distribution System – (District of Saanich-Owned and Operated)

In 2022, 64 sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the Saanich Distribution System. Saanich sampling stations were part of the daily distribution sampling runs by CRD staff and a weekly run by Saanich staff.

Sample Collection. In 2022, 1,171 bacteriological and 177 water chemistry samples were collected from the Saanich Distribution System (Table 8). Based on current population data for the District of Saanich, 93 samples are required for bacteria testing each month. Table 8 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. A small number of total coliform-positive results were recorded throughout the year. There were no consecutive positive samples in 2022. One sample in August exceeded the 10 CFU/100 mL total coliform concentration limit. This system complied with the 10% total coliform-positive limit for all months. The annual total coliform positive percentage was well below the 10% limit, at only 0.3% (Table 8).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

No *E. coli* bacteria were found in any sample collected in 2022 (Table 8).

Chlorine Residual. The annual median chlorine residual in the Saanich Distribution System was 1.44 mg/L (Table 8). The lowest monthly median was in October (1.28 mg/L) and the maximum monthly median was in December (1.59 mg/L) (Figure 35).

Water Temperature. The annual median water temperature in the Saanich Distribution System was 11.3°C, with monthly medians ranging between 6.0°C (January) and 18.2°C (September) (Table 8).

Table 8 2022 Bacteriological Quality of the Saanich Distribution System

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity			Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU		
JAN	95	0	0.0	0	0	0	0	3	0	1.58	6.0
FEB	94	0	0.0	0	0	0	0	5	0	1.50	6.6
MAR	100	0	0.0	0	0	0	0	5	0	1.42	7.8
APR	96	0	0.0	0	0	0	0	4	0	1.42	9.4
MAY	96	0	0.0	0	0	0	0	6	1	1.39	11.0
JUN	101	1	1.0	0	0	0	0	6	0	1.45	13.2
JUL	98	1	1.0	0	0	0	0	6	1	1.43	15.0
AUG	99	1	1.0	0	1	0	0	6	0	1.38	16.6
SEP	99	0	0.0	0	0	0	0	4	0	1.41	18.2
OCT	96	0	0.0	0	0	0	0	6	0	1.28	17.0
NOV	101	0	0.0	0	0	0	0	7	0	1.47	11.5
DEC	96	0	0.0	0	0	0	0	4	0	1.59	7.6
Total:	1171	3	0.3	0	1	0	62	2	1.44	11.3	

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2022.

Physical/Chemical Parameters. The drinking water in the Saanich Distribution System had the following physical and chemical characteristics in 2022:

- Median pH: 7.5
- Median Alkalinity: 16.8 mg/L
- Median Turbidity: 0.25 NTU
- Median Conductivity (25°C): 52.80 μ S/cm
- Median Colour: 2.0 TCU

Metals. No data in 2022.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Saanich Distribution System was in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* **except** for August, with one total coliform-positive result in exceedance of 10 CFU/100 mL. An immediate resample confirmed the safety of the drinking water.

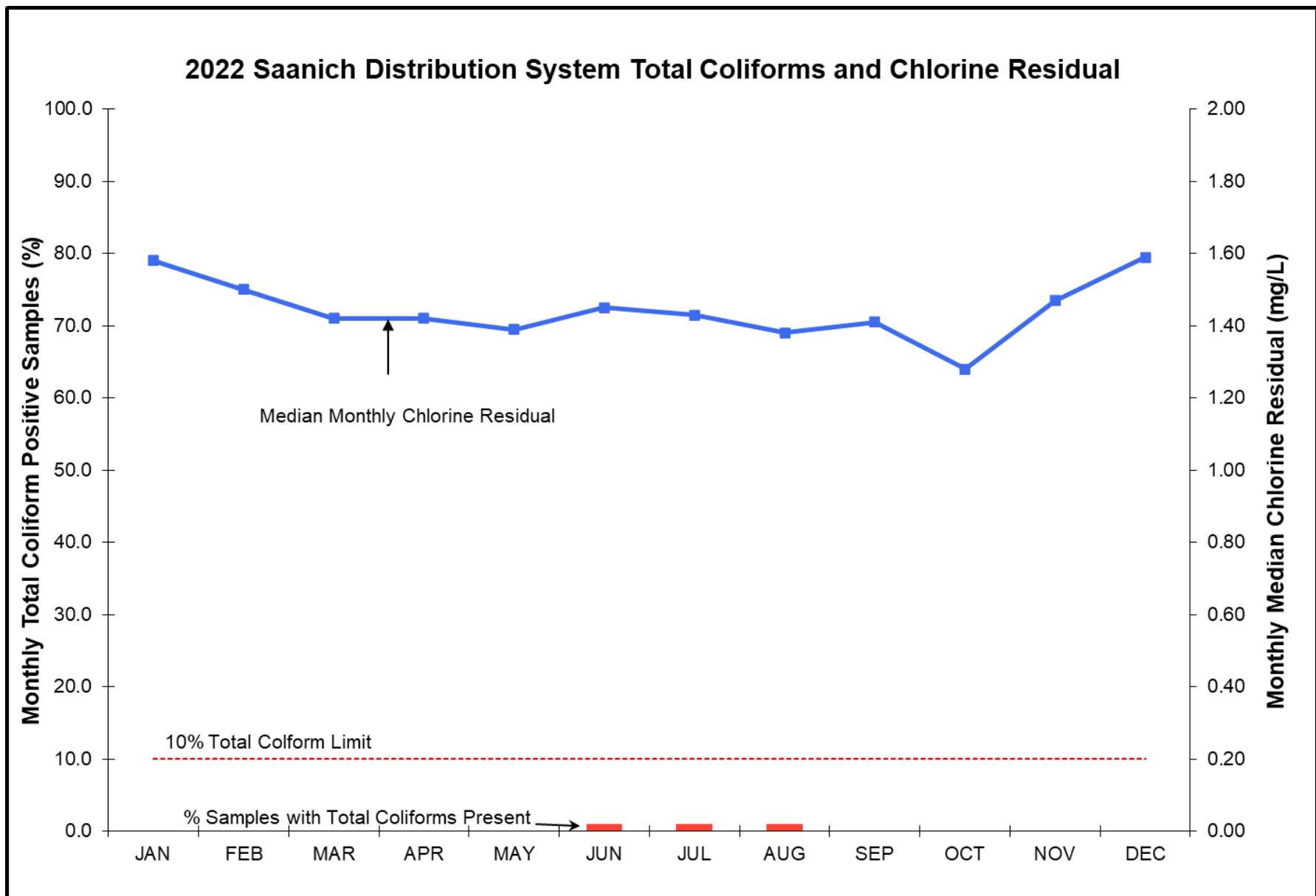


Figure 35 Saanich Distribution System Total Coliforms and Chlorine Residuals in 2022

7.4.7 Sidney Distribution System – (Town of Sidney-Owned and Operated)

In 2022, seven sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the Sidney Distribution System. Sidney sampling stations are part of the daily distribution sampling runs by CRD staff.

Sample Collection. In 2022, 204 bacteriological and 82 water chemistry samples were collected from the Sidney Distribution System (Table 9). Based on current population data for the Town of Sidney, 12 samples are required for bacteria testing each month. Table 9 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Two samples tested positive for total coliforms in 2022. The resamples were negative, so there were no consecutive positive samples in 2022. No sample exceeded the 10 CFU/100 mL total coliform concentration. This system complied with the 10% total coliform-positive limit for all months. The annual total coliform positive percentage was well below the 10% limit at only 1.0% (Table 9).

No sample tested positive for *E. coli* in 2022 (Table 9).

Chlorine Residual. The annual median chlorine residual in the Sidney Distribution System was 1.38 mg/L (Table 9). The lowest monthly median was in October (1.27 mg/L) and the maximum monthly median was in December (1.58 mg/L) (Figure 36).

Water Temperature. The annual median water temperature in the Sidney Distribution System was 11.4°C, with monthly medians ranging between 7.1°C (January) and 18.2°C (September) (Table 9).

Table 9 2022 Bacteriological Quality of the Sidney Distribution System

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU	
JAN	16	0	0.0	0	0	0	0	3	0	1.45
FEB	15	0	0.0	0	0	0	0	1	0	1.34
MAR	16	0	0.0	0	0	0	0	1	0	1.39
APR	16	0	0.0	0	0	0	0	2	0	1.40
MAY	17	0	0.0	0	0	0	0	2	0	1.33
JUN	20	0	0.0	0	0	0	0	2	0	1.39
JUL	16	0	0.0	0	0	0	0	2	0	1.40
AUG	18	0	0.0	0	0	0	0	3	0	1.28
SEP	17	0	0.0	0	0	0	0	2	0	1.39
OCT	17	0	0.0	0	0	0	0	1	0	1.27
NOV	20	1	5.0	0	0	0	0	2	0	1.46
DEC	16	1	6.3	0	0	0	0	1	0	1.58
Total:	204	2	1.0	0	0	0	22	0	1.38	11.4

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2022.

Physical/Chemical Parameters. The drinking water in the Sidney Distribution System had the following physical and chemical characteristics in 2022:

- Median pH: 7.7
- Median Alkalinity: 16.50 mg/L
- Median Turbidity: 0.20 NTU
- Median Conductivity (25°C): 51.00 µS/cm
- Median Colour: 2.5 TCU

Metals. No data in 2022.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Sidney Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*.

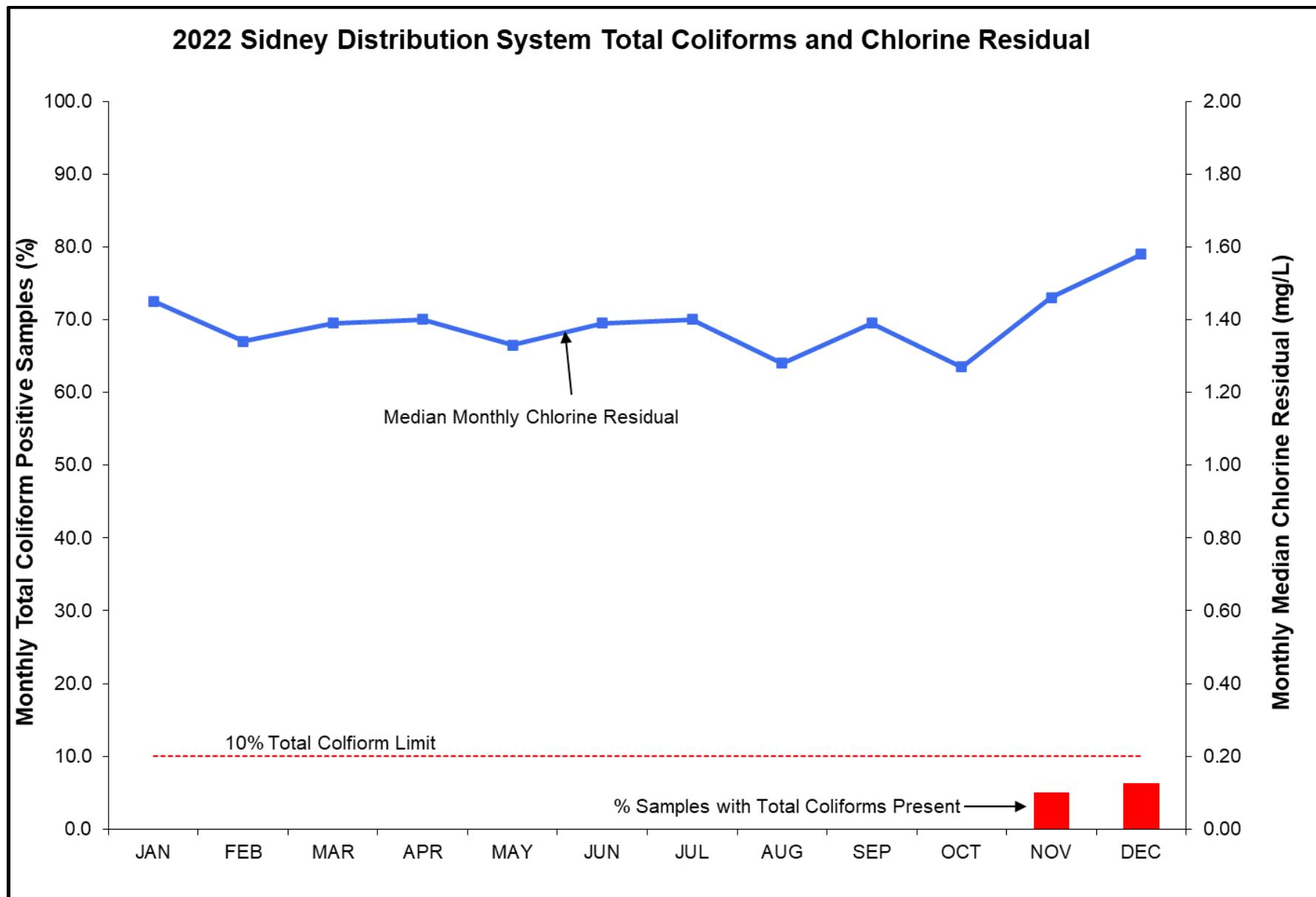


Figure 36 Sidney Distribution System Total Coliforms and Chlorine Residuals in 2022

7.4.8 Victoria/Esquimalt Distribution System – (City of Victoria-Owned and Operated)

In 2022, 16 sampling locations were used by the CRD Water Quality Monitoring Program to monitor the bacteriological quality of the water in the Victoria/Esquimalt Distribution System. Victoria/Esquimalt sampling stations are part of the daily distribution sampling runs by CRD staff.

Sample Collection. In 2022, 1,213 bacteriological and 220 water chemistry samples were collected from the Victoria/Esquimalt Distribution System (Table 10). Based on current population data for Victoria and Esquimalt, 92 samples are required for bacteria testing each month. Table 10 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Nine total coliform-positive results were recorded throughout the year. All resamples were negative, so there were no consecutive positive samples in 2022. One sample in June and one in August exceeded the 10 CFU/100 mL total coliform concentration limit. This system complied with the 10% total coliform-positive limit for all months. The annual total coliform positive percentage was well below the 10% limit at only 0.7% (Table 10).

The number of total coliform positive tests in the GVDWS between June and September was unusual and subject of a thorough investigation by CRD staff. Sampling and laboratory procedures and equipment were reviewed and investigated for possibly producing false positives. Unfortunately, no conclusive answers were found. These suspicious test results occurred randomly across all parts of the GVDWS, including the separately treated and supplied Sooke/East Sooke Distribution System. This, and the fact that all resamples tested negative, supports the conclusion that no actual drinking water contamination that could have posed a risk to public health occurred.

No *E. coli* was detected in any sample in 2022 (Table 10).

Chlorine Residual. The annual median chlorine residual in the Victoria/Esquimalt Distribution System was 1.43 mg/L (Table 10). The lowest monthly median was in August (1.31 mg/L) and the maximum monthly median was in December (1.62 mg/L) (Figure 37).

Water Temperature. The annual median water temperature in the Victoria/Esquimalt Distribution System was 12.1°C, with monthly medians ranging between 6.4°C (January) and 18.8°C (September) (Table 10).

Table 10 2022 Bacteriological Quality of the Victoria Distribution System

Month	Samples Collected	Total Coliforms (CFU/100mL)				E.coli CFU/100mL	Turbidity		Chlorine Residual	Water Temp.
		Samples TC > 0	Percent TC>0	Resamples TC > 0	Samples TC > 10		Samples >0	Samples Collected	Samples >1 NTU	
JAN	96	0	0.0	0	0	0	8	0	1.61	6.4
FEB	94	0	0.0	0	0	0	8	0	1.49	7.1
MAR	111	0	0.0	0	0	0	7	0	1.43	8.2
APR	95	0	0.0	0	0	0	8	0	1.43	10.0
MAY	96	0	0.0	0	0	0	9	0	1.43	12.2
JUN	110	2	1.8	0	1	0	10	0	1.45	14.5
JUL	98	5	5.1	0	0	0	8	0	1.40	17.0
AUG	111	2	1.8	0	1	0	9	0	1.31	18.3
SEP	106	0	0.0	0	0	0	7	0	1.37	18.8
OCT	95	0	0.0	0	0	0	7	0	1.34	17.2
NOV	107	0	0.0	0	0	0	10	0	1.53	10.9
DEC	94	0	0.0	0	0	0	6	0	1.62	7.5
Total:	1213	9	0.7	0	2	0	97	0	1.43	12.1

Notes:

TC = Total Coliforms, *E. coli* = *Escherichia coli*, Cl₂ = chlorine, NTU = Nephelometric turbidity unit.

> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2022.

Physical/Chemical Parameters. The drinking water in the Victoria/Esquimalt Distribution System had the following physical and chemical characteristics in 2022:

- Median pH: 7.5
- Median Alkalinity: 16.60 mg/L
- Median Turbidity: 0.25 NTU
- Median Conductivity (25°C): 52.00 μ S/cm
- Median Colour: 3.0 TCU

The system experienced occasional elevated turbidity in certain dead-end pipe sections, which were addressed with regular or ad hoc flushing at those locations.

Metals. No data in 2022.

The Greater Victoria pH & Corrosion Study completed in 2021 concluded that metal corrosion and lead leaching in the public piping systems, as well as in the vast majority of private plumbing systems, is not an issue in the Greater Victoria Drinking Water System.

Compliance Status. The Victoria/Esquimalt Distribution System was in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* **except** for June and August, with one total coliform-positive result each in exceedance of 10 CFU/100 mL. Immediate resamples confirmed the safety of the drinking water.

2022 Victoria/Esquimalt Distribution System Total Coliforms and Chlorine Residual

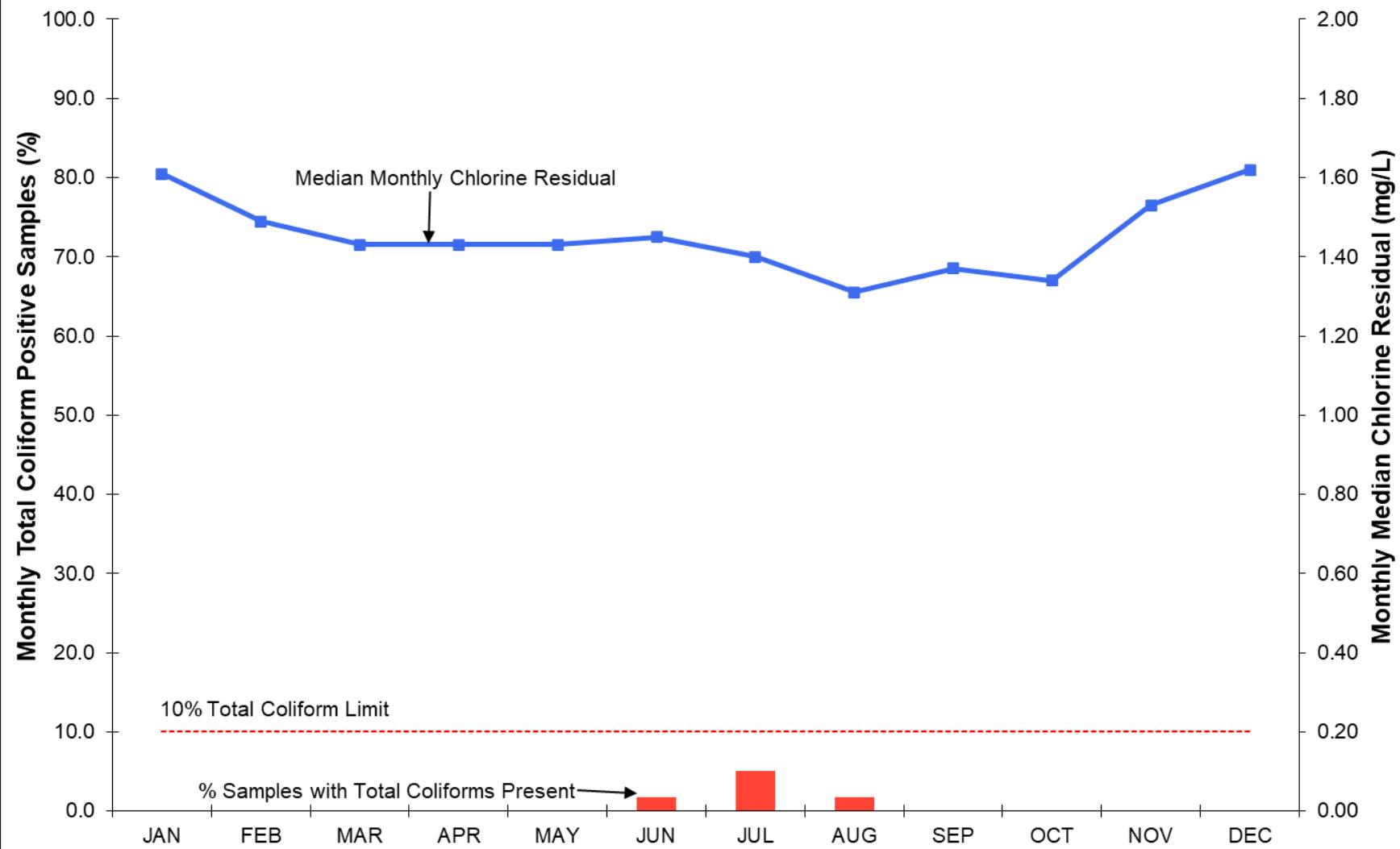


Figure 37 Victoria/Esquimalt Distribution System Total Coliforms and Chlorine Residuals in 2022

7.5 Water Quality Inquiry Program

Records of customer inquiries, including complaints about drinking water quality, have been maintained since 1992. In 2022, there was no single category of water quality inquiry or complaint that stood out among the rest. During periods of water main flushing activities (January-May, September-December) in the distribution systems, complaints or concerns about water discolouration were more prevalent. Throughout the year, a number of inquiries or complaints about chlorine taste and odour were received in 2022, but most of these were of a general nature where people object to the addition of any chemical to the drinking water. A few complaints were related to residue observed in water kettles and fouling of tap filters. Both phenomena are not uncommon in an unfiltered water system.

CRD staff have communicated regularly with Island Health hospital facility management staff to provide useful water quality information to these facilities. No hospital staff complaints or concerns were raised in 2022.

In addition to complaints, CRD staff received a number of queries from people concerned about the general safety of their drinking water. These concerns were addressed individually and, in general, most customers are content to know that CRD staff are actively sampling both the source water and the treated drinking water being delivered to their homes. For those people wanting to know more about the composition of their drinking water, they were either provided with the annual tables or directed to the CRD website. Newly emerging topics in customer inquiries were related to potential contamination of the drinking water with microplastics and forever chemicals (PFAS), both topics that have had a strong presence in the media recently. A few questions to staff were also related to a potential addition of fluoride to the drinking water, with some customers strongly against and some in favour.

7.6 Cross Connection Control Program

This program was created based on an Order by the Chief Medical Health Officer of the Island Health Authority in 2005. Since then, it has become exemplary for an effective and efficient cross connection control program in Canada and it forms an important component of the multi-barrier concept in the Greater Victoria Drinking Water System. Working with Island Health, the 13 municipalities and participating electoral areas, the objective of this program is to identify, eliminate and prevent cross connections within the Greater Victoria Drinking Water System that could lead to drinking water contaminations. The CRD was tasked to take over the responsibility for this program under a newly-created Cross Connection Control Bylaw (enacted in 2006). In 2019, the CRD Cross Connection Control Bylaw 3516 was amended in whole by amendment Bylaw No. 4340. This most recent update brought the technical and administrative requirements in line with new provincial legislation, the *BC Building Act*. The method by which the program meets its objectives is enforcement of the backflow prevention requirements under the BC Building Code and as described by the Canadian Standard Association's CSAB64 series, and through public education. CRD staff work with municipal building officials, industry professionals and business and facility owners to achieve the goals of the Cross Connection Control Program.

In 2022, the Cross Connection Control Program conducted a total of 678 facility audits on high risk (393) and moderate risk (285) facilities. The focus for 2022 was on severe hazard facilities and reaudits of these severe connections with a fresh look at agricultural connections, which CRD staff started late in 2022 and expect to continue into 2023. Another priority in 2022 was checking construction sites for compliance with cross connection control requirements. Staff found a notable improvement in construction site compliance by the end of the year. The compliance rate, measured as facilities with outstanding deficiencies divided by the number of facilities audited, increased from 78% in 2021 to 92% by the end of 2022. This success is attributed to a shift to an outcome-oriented approach, coupled with effective outreach campaigns. The goal for 2023 is to continue with these audits and maintain or further improve current compliance levels.

In total, by the end of 2022, the Cross Connection Control Program had 28,768 cross connection control devices registered in 14,087 facilities, an increase of 1,284 assemblies in 706 new or newly-audited facilities across the region. On all testable devices, a total of 23,318 test reports (11,623 digital, 11,695 paper) were received and recorded by CRD staff in 2022. The compliance rate for getting testable devices tested in

accordance with the bylaw was 70%. Through more public education and a “Get On The Portal” campaign, staff expect to increase these testing numbers.

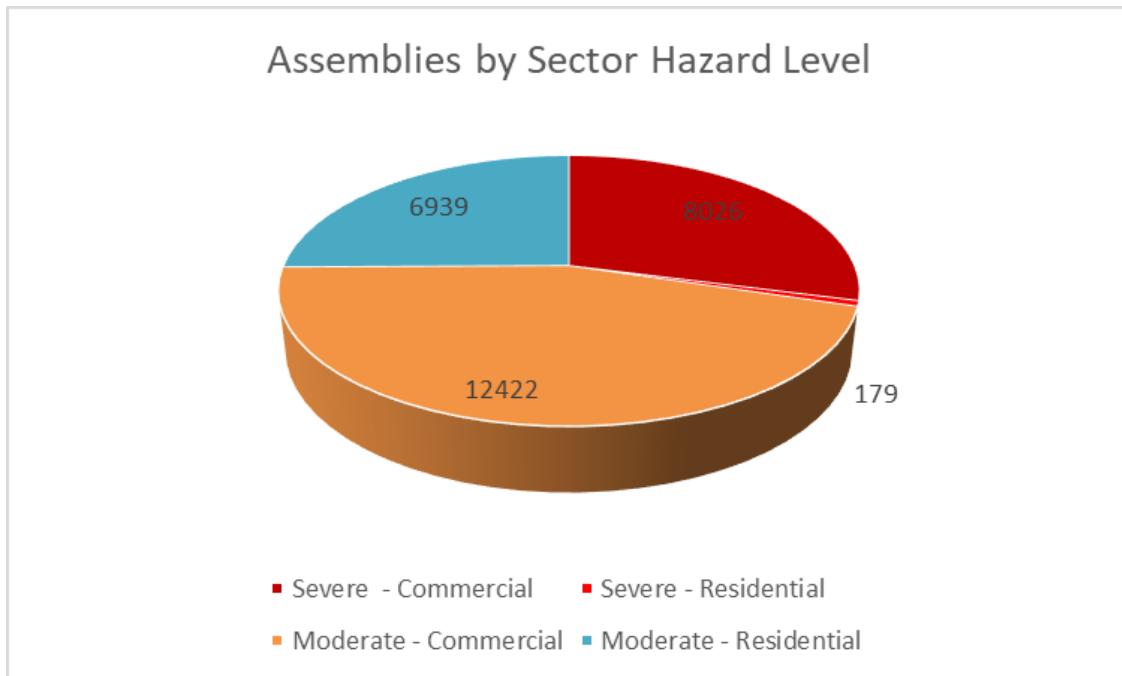


Figure 38 Backflow Devices in Greater Victoria in Different Sectors and Hazard Categories

In 2022, the CRD conducted a study on all bulk water connections to the CRD transmission system to identify potential backflow risks. As per Bylaw No. 4340, all connections to CRD water mains shall be protected against backflow risks. This is consistent with requirements of many other large water suppliers in North America (e.g., Metro Vancouver, Seattle Public Utilities, Massachusetts Water Resource Utility, San Francisco Public Utilities Commission). An inventory of all known connections was created and all connections were ranked according to their risk to water quality in the supply system. Several high-risk connections were identified for upgrades to mitigate the backflow and water quality risk. The final report will be presented in the spring of 2023.

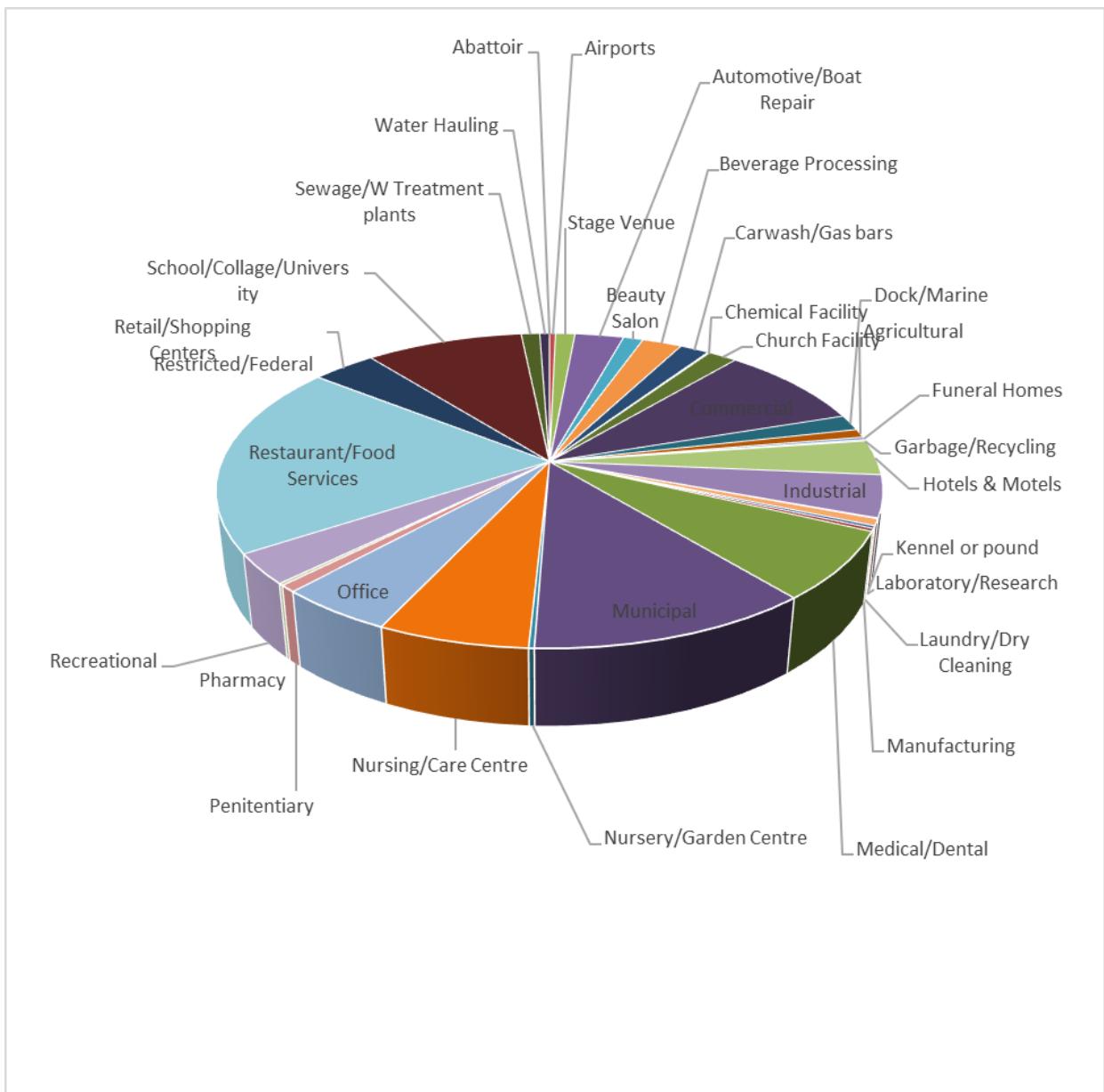


Figure 39 Cross Connection Relevant Facilities Across Greater Victoria

8.0 CONCLUSIONS

1. The water quality data collected in 2022 indicate that the drinking water in Greater Victoria was of good quality and safe to drink. The drinking water temperature exceeded the aesthetic objective of 15°C between the end of August and the end of October. This is the only parameter that system-wide did not meet water quality criteria listed in the *Guidelines for Canadian Drinking Water Quality*.
2. Greater Victoria continues to enjoy a water supply in which *Giardia* and *Cryptosporidium* parasites are well below the levels commonly considered by the health authorities to be responsible for disease outbreaks.
3. The bacteriological quality of the raw source water was excellent in 2022. Total coliform concentrations during the summer months were naturally elevated but very low during the rest of the year. The higher total coliform concentrations during the summer were consistent with concentrations in previous years. This seasonal increase in bacteria load had no impact on the treated water quality. *E. coli* bacterial levels in the raw source water were very low for the entire year.
4. Consumers in the GVDWS received drinking water that had very low disinfection byproducts. Overall levels of trihalomethanes and haloacetic acids remain well below the Canadian guideline limits and the USEPA limits. The newly-monitored disinfection byproduct, Nitrosodimethylamine, was, if detected at all, only in concentrations well below the current MAC in the Canadian guidelines.
5. The algal activity in 2022 was in line with the long-term average trend in Sooke Lake Reservoir. The species that were active, and relatively abundant in 2022, belonged to known and low-risk algal species. Cyanobacteria, with the potential to produce harmful cyanotoxins under bloom conditions, were present, as usual, throughout the year. However, a stable and nutrient-poor ecosystem, such as the Sooke Lake Watershed, does not provide conditions needed for cyanobacteria or other adverse algal blooms with serious implications for the drinking water quality. These natural nutrient-poor conditions limit the biological productivity in Sooke Lake Reservoir, which is very favourable for a drinking water source.
6. The number of water quality inquiries and complaints received by CRD staff in 2022 was lower than in 2021 when the CRD temporarily switched to free chlorine for one month and had several complaints about chlorine taste and odour. In 2022, the number and nature of customer complaints or inquiries were similar to years prior to 2021.
7. The CRD Transmission System, the CRD Supply Storage Reservoirs, North Saanich, Saanich and Victoria/Eskwimalt were not in full compliance with the *BC Drinking Water Protection Regulation*, due to samples containing total coliform concentrations higher than the limit of 10 CFU/100 mL. Oak Bay, North Saanich and CRD Supply Storage Reservoirs were also not in full compliance with the *BC Drinking Water Protection Regulation* due to more than 10% of the monthly samples collected being positive for total coliform bacteria. The unusual occurrence of total coliform positive results and concentration exceedances warranted an investigation by staff. While no cause for the random bacteria hits was found, staff also found no evidence of an actual drinking water contamination and it was concluded that no risk to public health existed.
8. The Sidney, Central Saanich, CRD Sooke/East Sooke and CRD Juan de Fuca systems were in full compliance with the *BC Drinking Water Protection Regulation*.
9. All systems did meet the monthly sampling requirements, as per *BC Drinking Water Protection Regulation*.
10. The analytical results in all CRD and municipal water systems show that the drinking water was of good quality and was safe for consumption at all times throughout 2022.

APPENDIX A

TABLE 1. UNTREATED (RAW) WATER QUALITY ENTERING GOLDSTREAM WATER TREATMENT PLANT
(Guideline values provide reference only for untreated water)

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency	
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range			
				Minimum	Maximum				Minimum - Maximum			
Physical Parameters (ND means less than instrument can detect)												
Alkalinity, Total	mg/L	14.8	12	13.6	16.7		15.3	143	8.84-19.1	12/yr		
Carbon, Dissolved Organic	mg/L as C	1.8	12	1.2	2.3		1.7	116	< 0.5-4	12/yr		
Carbon, Total Organic	mg/L as C	1.8	12	1.1	2.0	Guideline Archived	1.87	117	0.82-3.9	12/yr		
Colour, True	TCU	6.0	55	< 2	9.0	≤15 AO	6.3	526	< 2-19	52/yr		
Conductivity @ 25 C	uS/cm	41.3	54	38.3	45.5		42.3	519	28.2-62.9	52/yr		
Hardness as CaCO ₃	mg/L	15.9	7	15.3	17.3	No Guideline Required	17.3	139	6.95-20.9	6/yr		
pH	pH units	7.2	56	6.5	7.4	7.0 - 10.5 AO	7.29	548	6.45-7.94	52/yr		
Tannins and Lignins	mg/L	< 0.2	3	< 0.2	0.3	Guideline Archived	< 0.2	21	< 0.1-0.38	2/yr		
Total Dissolved Solids	mg/L	31.0	12	14.0	58.0	≤500 AO	26.75	112	< 10-48	12/yr		
Total Suspended Solids	mg/L	< 1.3	12	< 1	3.2		< 1	111	0.1-4	12/yr		
Total Solids	mg/L	< 1.3	12	< 1	3.2		< 1	111	0.1-4	12/yr		
Turbidity, Grab Samples	NTU	0.3	242	0.2	1.0	1.0 MAC	0.3	2432	0.15-3.1	250/yr		
Ultraviolet Absorption, 5 cm	Abs. @ 254 nm	0.3	56	0.1	0.3		0.255	499	0.158-88.2	52/yr		
Ultraviolet Transmittance	%	87.7	56	86.3	91.0		88.8	493	0.203-94.4	52/yr		
Water Temp., Grab Samples	degrees C	8.8	242	3.7	18.7	≤15 AO	10.3	2489	2.7-21	250/yr		
Non-Metallic Inorganic Chemicals (ND means less than instrument can detect)												
Bromide	ug/L as Br	< 0.01	4	< 0.01	0.011		< 0.7	52	0.011-13	4/yr		
Chloride	mg/L as Cl	2.4	4	2.1	2.50	≤ 250 AO	2.4	26	< 0.045-4.9	4/yr		
Cyanide	mg/L as Cn	< 0.0005	4	< 0.0005	0.001	0.2 MAC	< 0.0005	26	< 0.0005-0.006	4/yr		
Fluoride	mg/L as F	< 0.05	4	< 0.05	< 0.05	1.5 MAC	0.022	27	< 0.007-0.05	4/yr		
Iodide, dissolved	mg/L as I	< 0.1	2	< 0.1	< 0.1		< 0.1	10	< 0.1-0.1	4/yr		
Nitrate, Dissolved	ug/L as N	< 20	12	< 20	41.00	10000 MAC	< 20	108	0.3-46.4	12/yr		
Nitrite, Dissolved	ug/L as N	< 5	12	< 5	< 5	1000 MAC	< 5	107	< 0.3-10	12/yr		
Nitrate + Nitrite	ug/L as N	< 20	12	< 20	41.00		< 20	109	0.3-46.4	12/yr		
Nitrogen, Ammonia	ug/L as N	< 15	12	< 15	30.00	No Guideline Required	< 15	112	0.079-130	12/yr		
Nitrogen, Total Kjeldahl	ug/L as N	102	12	65	820.00		101.5	108	52.4-610	12/yr		
Nitrogen, Total	ug/L as N	109.5	12	83	153.00		112	113	49.4-610	12/yr		
Phosphate, Ortho, Dissolved	ug/L as P	< 1	12	< 1	1.70		< 3	109	0.05-24.3	12/yr		
Phosphorus, Total, Dissolved	ug/L as P	1.65	12	< 1	2.00		2.49	112	0.35-31	12/yr		
Phosphorus, Total	ug/L as P	2.4	12	1	8.00		3.2	113	< 1-10	12/yr		
Silica	mg/L as SiO ₂	4.8	11	4.5	4.90		4	101	0.09-5.6	12/yr		
Silicon	ug/L as Si	2130	7	1790	2350.00		1870	81	681-2520	6/yr		

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Target Sampling Frequency
				Minimum	Maximum				Minimum - Maximum		
Sulphate	mg/L as SO ₄	1.4	12	< 1	< 10	≤ 500 AO	1.5025	112	< 0.5-8.16	12/yr	
Sulphide	mg/L as H ₂ S	< 0.0018	13	< 0.0018	< 0.0018	≤ 0.05 AO	< 0.0018	11	< 0.0018- < 0.0019	12/yr	
Sulphur	mg/L as S	< 3	7	< 3	< 3		< 3	80	< 3- < 3	6/yr	
Metallic Inorganic Chemicals (ND means less than instrument can detect)											
Aluminum	ug/L as Al	17.8	7	6.7	20.20	2900 MAC / 100 OG	14.3	81	3.9-52.3	6/yr	
Antimony	ug/L as Sb	< 0.5	7	< 0.5	< 0.5	6 MAC	< 0.5	81	< 0.5- < 5	6/yr	
Arsenic	ug/L as As	< 0.1	7	< 0.1	< 0.1	10 MAC	< 0.1	81	< 0.1-0.24	6/yr	
Barium	ug/L as Ba	3.5	7	3.4	3.90	2000 MAC	3.8	81	1.6-5.3	6/yr	
Beryllium	ug/L as Be	< 0.1	7	< 0.1	< 0.1		< 0.1	81	< 0.1- < 10	6/yr	
Bismuth	ug/L as Bi	< 1	7	< 1	< 1		< 1	81	< 1- < 10	6/yr	
Boron	ug/L as B	< 50	7	< 50	< 50	5000 MAC	< 50	81	< 50- < 50	6/yr	
Cadmium	ug/L as Cd	< 0.01	7	< 0.01	< 0.01	7 MAC	< 0.01	81	< 0.01-0.07	6/yr	
Calcium	mg/L as Ca	4.53	7	4.37	5.05	No Guideline Required	4.98	81	2.06-6.13	6/yr	
Chromium	ug/L as Cr	< 1	7	< 1	< 1	50 MAC	< 1	81	< 1- < 1	6/yr	
Cobalt	ug/L as Co	< 0.2	7	< 0.2	< 0.2		< 0.5	81	< 0.2- < 0.5	6/yr	
Copper	ug/L as Cu	0.97	7	0.85	1.12	2000 MAC / ≤ 1000 AO	1.35	81	0.33-13.9	6/yr	
Iron	ug/L as Fe	19.3	7	12.7	37.4	≤ 300 AO	28	81	12-217	6/yr	
Lead	ug/L as Pb	< 0.2	7	< 0.2	< 0.2	5 MAC	< 0.2	81	< 0.2-0.3	6/yr	
Lithium	ug/L as Li	< 2	7	< 2	< 2		< 5	62	< 2-10.4	6/yr	
Magnesium	mg/L as Mg	1.11	7	1.06	1.18	No Guideline Required	1.18	81	0.439-1.42	6/yr	
Manganese	ug/L as Mn	4.3	7	1.4	6.70	120 MAC / ≤ 20 AO	5.4	81	1.4-81.8	6/yr	
Mercury, Total	ug/L as Hg	< 0.0019	7	< 0.0019	< 0.0019	1.0 MAC	< 0.01	80	< 0.0019- < 10	6/yr	
Molybdenum	ug/L as Mo	< 1	7	< 1	< 1		< 1	81	< 1- < 1	6/yr	
Nickel	ug/L as Ni	< 1	7	< 1	< 1		< 1	81	< 1-2.3	6/yr	
Potassium	mg/L as K	0.128	7	0.127	0.14		0.136	81	0.081-0.214	6/yr	
Selenium	ug/L as Se	< 0.1	7	< 0.1	< 0.1	50 MAC	< 0.1	81	< 0.1- < 0.1	6/yr	
Silver	ug/L as Ag	< 0.02	7	< 0.02	0.07	No Guideline Required	< 0.02	81	< 0.02-0.021	6/yr	
Sodium	mg/L as Na	1.62	7	1.49	1.86	≤ 200 AO	1.71	81	0.651-2.91	6/yr	
Strontium	ug/L as Sr	13.5	7	13.2	15.00	7000 MAC	15.3	81	6.3-21.8	6/yr	
Thallium	ug/L as Tl	< 0.01	7	< 0.01	< 0.01		< 0.05	81	< 0.01- < 0.05	6/yr	
Tin	ug/L as Sn	< 5	7	< 5	< 5		< 5	81	< 5- < 5	6/yr	
Titanium	mg/L as Ti	< 5	7	< 5	< 5		< 5	81	< 5- < 5	6/yr	
Uranium	ug/L as U	< 0.1	7	< 0.1	< 0.1	20 MAC	< 0.1	81	< 0.01- < 0.1	6/yr	
Vanadium	ug/L as V	< 5	7	< 5	< 5		< 5	81	< 5- < 5	6/yr	
Zinc	ug/L as Zn	< 5	7	< 5	< 5	≤ 5000 AO	< 5	81	< 5-82.9	6/yr	
Zirconium	ug/L as Zr	< 0.1	7	< 0.1	< 0.1		< 0.5	81	< 0.0005- < 0.5	6/yr	

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency							
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Minimum - Maximum							
				Minimum	Maximum				Range	Minimum - Maximum								
Microbial Parameters																		
Coliform Bacteria																		
Coliforms, Total	Coliforms/100 mL	6	242	< 1	260.00		11	2436	0-24200	250/yr								
<i>E. coli</i>	<i>E. coli</i> /100 mL	< 1	241	< 1	2.00		< 1	2439	0-15	250/yr								
Heterotrophic / Other Bacteria																		
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	300.0	246.0	22.0	1200.0		330	2309	< 1-7200	250/yr								
Cyanobacterial Toxins																		
Anatoxin a	ug/L	Analyzed as required - last analyzed in 2005									Special							
Microcystin-LR	ug/L	Analyzed as required - last analyzed in 2011				1.5 MAC (Total Microcystins)					Special							
Parasites																		
Cryptosporidium, Total oocysts	oocysts/100 L	ND	8	ND	ND	Zero detection desirable	0	70	0-< 1	8/yr								
Giardia, Total cysts	cysts/100 L	ND	8	ND	ND	Zero detection desirable	0	69	0-1.1	8/yr								
Radiological Parameters (ND means less than instrument can detect)																		
Gross alpha radiation	Bq/L	<0.02	2	<0.02	<0.03	0.5 (Screening)	<0.03	17	<0.02-0.06	2/yr								
Gross beta radiation	Bq/L	<0.02	2	<0.02	0.03	1.0 (Screening)	<0.02	17	<0.02-0.11	2/yr								
Iodine-131	Bq/L	<0.2	2	<0.2	<0.2	6 Bq/L	<0.2	17	<0.1-<0.5	Special								
Cesium-137	Bq/L	<0.1	2	<0.1	<0.1	10 Bq/L	<0.2	17	<0.04-<0.2	Special								
Organic Parameters (ND means less than instrument can detect)																		
Pesticides/Herbicides																		
1,4-DDD	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.001	6	< 0.001-< 0.001	2/yr								
1,4'-DDE	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.001	6	< 0.001-< 0.001	2/yr								
1,4'-DDT	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.001	6	< 0.001-< 0.001	2/yr								
2,4,5-T	ug/L	<0.5	2	<0.08	<0.5	Guideline Archived	<1.0	20	<0.5-<1.0	2/yr								
2,4,5-TP (Silvex)	ug/L	<0.5	2	<0.08	<0.5	Guideline Archived	<0.1	20	<0.1-<1.0	2/yr								
2,4-D (2,4-Dichlorophenoxyacetic acid)	ug/L	< 0.05	2	< 0.05	< 0.05	100 MAC	<0.1	14	<0.1-<1.0	2/yr								
2,4-D (BEE)	ug/L	< 0.5	2	< 0.5	< 0.5		< 2	27	< 0.5-< 2	2/yr								
2,4-DP (Dichlorprop)	ug/L	< 0.05	2	< 0.08	< 0.5		<0.5	19	<0.5-<1.0	2/yr								
4,4'-DDD	ug/L	< 0.005	2	< 0.001	< 0.005	Guideline Archived	<0.001	16	< 0.001-< 0.005	2/yr								
4,4'-DDE	ug/L	< 0.005	2	< 0.001	< 0.005	Guideline Archived	<0.001	17	< 0.001-< 0.005	2/yr								
4,4'-DDT	ug/L	< 0.005	1	< 0.005	< 0.005	Guideline Archived	< 0.001	14	< 0.001-< 0.005	2/yr								
Alachlor	ug/L	Not tested in 2022				Guideline Archived	< 0.5	6	< 0.5-< 0.5	2/yr								
Aldicarb	ug/L	<0.1	2	<0.1	<5	Guideline Archived	< 0.1	20	< 0.1-< 5	2/yr								
Aldrin	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	19	< 0.003-< 0.005	2/yr								
Aldrin + Dieldrin	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.003	11	< 0.003-< 0.005	2/yr								
Atrazine	ug/L	< 0.05	2	< 0.05	< 0.05	5 MAC	< 0.1	20	< 0.1-< 1	2/yr								

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS			CANADIAN GUIDELINES		TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Target Sampling Frequency
				Minimum	Maximum				Minimum - Maximum		
Azinphos-methyl	ug/L	< 0.2	2	< 0.2	< 0.2	Guideline Archived	< 0.2	17	< 0.001-< 2	2/yr	
BHC (alpha)	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	19	< 0.003-< 0.005	2/yr	
BHC (beta)	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	19	< 0.003-< 0.005	2/yr	
BHC (delta)	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	4	< 0.003-< 0.003	2/yr	
Bendiocarb	ug/L	<0.1	2	< 0.1	< 2	Guideline Archived	< 0.1	20	< 0.1-< 2	Irregular	
Bromacil	ug/L	< 0.05	2	< 0.05	< 0.05		< 0.1	16	< 0.1-< 0.1	2/yr	
Bromoxynil	ug/L	< 0.02	2	< 0.02	< 0.02	5.0 MAC	< 0.1	18	< 0.1-< 0.5	2/yr	
Captan	ug/L	< 0.1	2	< 0.1	< 0.1		< 0.1	13	< 0.003-< 1	2/yr	
Carbaryl	ug/L	<0.1	2	< 0.1	< 5	90 MAC	< 0.1	20	< 0.1-< 5	2/yr	
Carbofuran	ug/L	<0.1	2	< 0.1	< 5	90 MAC	< 0.1	20	< 0.1-< 5	2/yr	
Chlordane (alpha)	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.003	16	< 0.003-< 0.005	2/yr	
Chlordane (gamma)	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.003	18	< 0.003-< 0.005	2/yr	
Chlorpyrifos (Dursban)	ug/L	< 0.01	2	< 0.01	< 0.01	90 MAC	< 0.01	20	< 0.0008-< 2	2/yr	
Chlorothalonil	ug/L	< 0.05	2	< 0.05	< 0.05		< 0.003	14	< 0.003-< 0.003	2/yr	
Cyanazine (Bladex)	ug/L	< 0.05	2	< 0.05	< 0.05	Guideline Archived	< 0.1	18	< 0.1-< 5	2/yr	
Demeton	ug/L	< 2	2	< 2	< 2		< 2	9	< 2-< 2	2/yr	
Diazinon	ug/L	< 0.02	2	< 0.02	< 0.02	20 MAC	< 0.02	21	< 0.002-< 2	2/yr	
Dicamba	ug/L	< 0.005	2	< 0.005	< 0.005	120 MAC	< 0.006	20	< 0.006-< 1	2/yr	
Diclofop-methyl	ug/L	< 0.05	2	< 0.05	< 0.05	90 MAC	< 0.05	17	< 0.0007-< 0.9	2/yr	
Dichlorvos	ug/L	< 2	2	< 2	< 2		< 2	18	< 2-< 2	2/yr	
Dieldrin	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.002	19	< 0.002-< 0.005	2/yr	
Dimethoate	ug/L	< 0.05	2	< 0.05	< 0.05	20 MAC	< 0.05	2	< 0.05-< 0.05	2/yr	
Dinoseb (DNBP)	ug/L	< 0.02	2	< 0.02	< 0.02	Guideline Archived	< 0.05	4	< 0.05-< 0.05	2/yr	
Diquat	ug/L	< 7	2	< 7	< 7	70 MAC	< 7	19	< 7-< 350	2/yr	
Endosulfan I	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	18	< 0.003-< 0.005	2/yr	
Endosulfan II	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	18	< 0.003-< 0.005	2/yr	
Endosulfan Sulphate	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	19	< 0.003-< 0.005	2/yr	
Endosulfan (Total)	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	17	< 0.003-< 0.005	2/yr	
Endrin	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.005	19	< 0.005-< 0.005	2/yr	
Endrin Aldehyde	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	20	< 0.003-< 0.005	2/yr	
Endrin Ketone	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	19	< 0.003-< 0.005	2/yr	
Ethion	ug/L	< 1	2	< 1	< 1		< 1	15	< 0.5-< 1	2/yr	
Parathion Ethyl	ug/L	<0.05	2	< 0.05	<2.0		< 2	15	< 1-< 2	2/yr	
Fenchlorophos (Ronnel)	ug/L	< 2	2	< 2	< 2		< 2	19	< 0.5-< 2	2/yr	
Fenthion	ug/L	< 1	2	< 1	< 1		< 1	15	< 0.5-< 1	2/yr	
Fonofos	ug/L	< 2	2	< 2	< 2		< 2	15	< 0.5-< 2	2/yr	
Glyphosate	ug/L	< 10	2	< 10	< 10	280 MAC	< 10	20	< 10-< 10	2/yr	
Heptachlor	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.003	19	< 0.003-< 0.005	2/yr	

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Minimum - Maximum
				Minimum	Maximum				< 0.003	19	
Heptachlor Epoxide	ug/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.003	19	< 0.003-< 0.005	2/yr	
Imazapyr	ug/L	< 0.1	2	< 0.1	< 0.1		< 0.1	13	< 0.1-< 0.1	2/yr	
IPBC	ug/L	< 0.1	2	< 0.1	< 0.1		< 0.1	13	< 0.1-< 0.1	2/yr	
Malathion	ug/L	< 0.05	2	< 0.05	< 0.05	190 MAC	< 0.05	21	< 0.002-< 2	2/yr	
MCPA	ug/L	< 0.02	2	< 0.02	< 0.02	100 MAC	< 0.03	26	< 0.025-< 2	2/yr	
MCPP	ug/L	< 0.08	2	< 0.08	< 0.08		< 2	18	< 0.5-< 2	2/yr	
Methoxychlor	ug/L	< 0.01	2	< 0.01	< 0.01	Guideline Archived	< 0.003	18	< 0.003-< 0.01	2/yr	
Methyl Parathion	ug/L	< 2	2	< 2	< 2	Guideline Archived	< 2	20	< 0.1-< 2	2/yr	
Metolachlor	ug/L	< 0.05	2	< 0.05	< 0.05	Guideline Archived	< 0.1	20	< 0.1-< 5	2/yr	
Metribuzin (Sencor)	ug/L	< 0.1	2	< 0.1	< 0.1	80 MAC	< 0.1	18	< 0.0004-< 5	2/yr	
Mevinphos	ug/L	< 2	2	< 2	< 2		< 2	18	< 0.5-< 5	2/yr	
Mirex	mg/L	< 0.005	2	< 0.005	< 0.005	Guideline Archived	< 0.0039	19	< 0.003-< 0.005	2/yr	
Nitrilotriacetic acid (NTA)	ug/L	< 0.05	2	< 0.05	< 0.05	400 MAC	< 0.05	19	< 0.05-0.099	Irregular	
Oxychlordane	ug/L	< 0.005	2	< 0.005	< 0.005		< 0.003	13	< 0.003-< 0.005	2/yr	
Parathion	ug/L	< 0.05	2	< 0.05	< 0.05	Guideline Archived	< 0.05	21	< 0.0004-< 2	2/yr	
Paraquat (ion)	ug/L	< 1	2	< 1	< 1	10 MAC	< 1	19	< 1-< 1	2/yr	
Permethrin	ug/L	Not tested in 2022					< 0.04	14	< 0.0005-< 3.3	2/yr	
Phorate (Thimet)	ug/L	< 0.05	2	< 0.05	< 0.05	2 MAC	< 0.05	20	< 0.0003-< 1	2/yr	
Phosmet	ug/L	< 2	2	< 2	< 2		< 2	19	< 0.5-< 2	2/yr	
Picloram	ug/L	< 0.08	2	< 0.08	< 0.08	190 MAC	< 0.1	20	< 0.1-< 5	2/yr	
Prometryn	ug/L	< 1	2	< 1	< 1		< 1	17	< 0.25-< 1	Irregular	
Simazine	ug/L	< 0.05	2	< 0.05	< 0.05	10 MAC	< 0.1	20	< 0.1-< 2	2/yr	
Tebuthiuron	ug/L	< 0.1	2	< 0.1	< 0.1		< 0.5	1	< 0.5-< 0.5	2/yr	
Temephos	ug/L	Not tested in 2022				Guideline Archived	< 10	5	< 10-< 10	2/yr	
Terbufos	ug/L	< 0.05	2	< 0.05	< 0.05	1 MAC	< 0.05	21	< 0.0002-< 1	2/yr	
Toxaphene	ug/L	< 0.2	2	< 0.2	< 0.2	Guideline Archived	< 0.2	9	< 0.2-< 0.2	2/yr	
Trifluralin	ug/L	< 0.05	2	< 0.05	< 0.05	45 MAC	< 0.05	21	< 0.0003-< 5	2/yr	
Polycyclic Aromatic Hydrocarbons (PAH's)											
Acenaphthene	ug/L	0.025	2	< 0.01	< 0.04	Guideline Archived	< 0.04	21	< 0.01-< 0.2	2/yr	
Acenaphthylene	ug/L	0.025	2	< 0.01	< 0.04	Guideline Archived	< 0.04	21	< 0.01-< 0.2	2/yr	
Anthracene	ug/L	0.025	2	< 0.01	< 0.04	Guideline Archived	< 0.01	21	< 0.01-< 0.1	2/yr	
Benzo(a)anthracene	ug/L	0.025	2	< 0.01	< 0.04	Guideline Archived	< 0.01	21	< 0.01-< 0.1	2/yr	
Benzo(a)pyrene	ug/L	0.0125	2	< 0.005	< 0.02	0.04 MAC	< 0.005	21	< 0.0009-< 0.05	2/yr	
Benzo(b)fluoranthene	ug/L	Not tested in 2022				Guideline Archived	< 0.04	16	< 0.01-< 0.2	2/yr	
Benzo(g,h,i)perylene	ug/L	< 0.02	2	< 0.02	< 0.08	Guideline Archived	< 0.04	21	< 0.02-< 0.22	2/yr	
Benzo(b&j)fluoranthene	ug/L	< 0.01	2	< 0.01	< 0.04	Guideline Archived	< 0.01	2	< 0.01-< 0.01	2/yr	
Benzo(k)fluoranthene	ug/L	< 0.01	2	< 0.01	< 0.04	Guideline Archived	< 0.04	21	< 0.01-< 0.2	2/yr	
Chrysene	ug/L	< 0.01	2	< 0.01	< 0.04	Guideline Archived	< 0.02	21	< 0.01-< 0.15	2/yr	

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Target Sampling Frequency
				Minimum	Maximum				Minimum - Maximum		
Dibenz(a,h)anthracene	ug/L	<0.02	2	<0.02	<0.08	Guideline Archived	<0.02	20	<0.003-<0.25	2/yr	
Fluoranthene	ug/L	<0.01	2	< 0.01	< 0.04	Guideline Archived	< 0.02	21	< 0.01-< 0.1	2/yr	
Fluorene	ug/L	<0.01	2	< 0.01	< 0.04	Guideline Archived	< 0.03	21	< 0.01-< 0.15	2/yr	
Indeno(1,2,3-c,d)pyrene	ug/L	<0.02	2	<0.02	<0.08	Guideline Archived	<0.02	20	<0.02-<0.3	2/yr	
Naphthalene	ug/L	0.01	2	0.01	< 0.04	Guideline Archived	0.3	20	< 0.01-< 2.5	2/yr	
Phenanthrene	ug/L	<0.01	2	< 0.01	< 0.04	Guideline Archived	< 0.03	21	< 0.01-< 0.15	2/yr	
Pyrene	ug/L	<0.01	2	< 0.01	< 0.04	Guideline Archived	0.027	21	< 0.01-< 0.15	2/yr	
Volatile Hydrocarbons	ug/L	< 300	2	< 300	< 300	Guideline Archived	< 300	26	< 300-< 300	2/yr	
Phenols											
2,3,4,5-Tetrachlorophenol	ug/L	<0.5	2	<0.5	<1.0		<0.1	12	<0.1-<0.5	2/yr	
2,3,4,6-Tetrachlorophenol	ug/L	<0.5	2	<0.5	<1.0	100 MAC and ≤ 1.0 AO	<0.1	17	<0.1-<0.5	2/yr	
2,3,5,6-Tetrachlorophenol	ug/L	<0.5	2	<0.5	<2.0	Guideline Archived	<0.1	12	<0.1-<0.5	2/yr	
2,4,6-Trichlorophenol	ug/L	<0.5	2	<0.5	<2.0	5.0 MAC and ≤ 2.0 AO	<0.1	21	<0.1-<0.5	2/yr	
2,4-Dichlorophenol	ug/L	<0.5	2	<0.5	<2.0	90 MAC	<0.1	9	<0.1-<0.5	2/yr	
2,4-Dimethylphenol	ug/L	<2.5	2	< 2.5	< 10		<0.1	19	<0.5-<2.5	2/yr	
2,4-Dinitrophenol	ug/L	<0.5	2	<0.5	<2.0		<1.3	19	<1.3-<6.5	2/yr	
2-Chlorophenol	ug/L	<0.5	2	<0.5	<2.0		< 0.1	21	< 0.1-< 0.5	2/yr	
2-Nitrophenol	ug/L	<2.5	2	< 2.5	< 10		< 0.5	16	< 0.5-< 2.5	2/yr	
4,6-Dinitro-2-Methylphenol	ug/L	<2.5	2	< 2.5	< 10		<0.5	20	<0.5-<2.5	2/yr	
4-Chloro-3-Methylphenol	ug/L	<1	2	< 1	< 4		< 0.2	17	< 0.2-< 1	2/yr	
4-Nitrophenol	ug/L	<2.5	2	< 2.5	< 10		< 0.5	21	< 0.5-< 2.5	2/yr	
Alpha-Terpineol	ug/L	<5	2	< 5	< 20		< 1	21	< 1-< 5	2/yr	
Pentachlorophenol	ug/L	<2.5	2	< 0.5	< 2	60 MAC and ≤ 30 AO	< 0.1	21	< 0.1-< 0.5	2/yr	
Phenol	ug/L	<2.5	2	< 2.5	< 10		< 0.5	21	0.0022-3	2/yr	
Polychlorinated Biphenyls (PCBs)											
PCB-1016	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
PCB-1221	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
PCB-1232	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
PCB-1242	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
PCB-1248	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
PCB-1254	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
PCB-1260	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	18	< 0.00005-< 0.0001	Irregular	
PCB-1262	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	9	< 0.00005-< 0.0001	Irregular	
PCB-1268	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	9	< 0.00005-< 0.0001	Irregular	
Total PCBs	ug/L	< 0.00005	2	< 0.00005	< 0.00005	Guideline Archived	< 0.00005	17	< 0.00005-< 0.0001	Irregular	
Other Synthetic Chemicals											
1,1,1-Trichloroethane	ug/L	<0.5	2	<0.5	<0.5		<0.5	22	<0.5-<0.5		
1,1,1,2-Tetrachloroethane	ug/L	<0.5	2	<0.5	<0.5		<0.5	23	<0.5-<0.5		

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Target Sampling Frequency
				Minimum	Maximum				Minimum - Maximum		
1,1,2,2-Tetrachloroethane	ug/L	<0.5	2	<0.5	<0.5		<0.5	21	<0.5-<0.5		
1,1,2-Trichloroethane	ug/L	<0.5	2	<0.5	<0.5		<0.5	22	<0.5-<0.5		
1,1-Dichloroethane	ug/L	<0.5	2	<0.5	<0.5		<0.5	24	<0.5-<0.5		
1,1-Dichloroethene (1,1-Dichloroethylene)	ug/L	<0.5	2	<0.5	<0.5	14 MAC	<0.5	19	<0.5-<0.5		
1,2,3-Trichlorobenzene	ug/L	<2.0	2	<2.0	<2.0		<2.0	18	<2.0-<2.0		
1,2,4-Trichlorobenzene	ug/L	<2.0	2	<2.0	<2.0		<0.04	24	<0.04-<2.0		
1,2-Dibromoethane	ug/L	<0.2	2	<0.2	<0.2		<0.2	18	<0.2-<0.2		
1,2-Dichlorobenzene	ug/L	<0.5	2	<0.5	<0.5	200 MAC	<0.5	21	<0.5-<0.5		
1,2-Dichloroethane	ug/L	<0.5	2	<0.5	<0.5	5.0 MAC	<0.5	21	<0.5-<0.5		
1,2-Dichloroethene (cis)	ug/L	<1.0	2	<1.0	<1.0		<1.0	22	<1.0-<1.0		
1,2-dichloroethene (trans)	ug/L	<1.0	2	<1.0	<1.0		<1.0	22	<1.0-<1.0		
1,2-Dichloropropane	ug/L	<0.5	2	<0.5	<0.5		<0.5	21	<0.5-<0.5		
1,2-Diphenylhydrazine	ug/L	<0.05	2	<0.05	<0.2		<0.01	21	<0.01-<0.05		
1,3-Dichlorobenzene	ug/L	<0.5	2	<0.5	<0.5		<0.5	20	<0.5-<0.5		
1,3-Dichloropropene (cis)	ug/L	<1.0	2	<1.0	<1.0		<0.5	20	<0.5-<0.5		
1,3-Dichloropropene (trans)	ug/L	<1.0	2	<1.0	<1.0		<1.0	23	<1.0-<1.0		
1,4-Dichlorobenzene	ug/L	<0.5	2	<0.5	<0.5	5.0 MAC and ≤ 1.0 AO	<0.5	20	<0.5-<0.5		
2,4-Dinitrotoluene	ug/L	<0.25	2	<0.05	<1.0		<0.05	20	<0.05-<1.3		
2,6-Dinitrotoluene	ug/L	<0.25	2	<0.05	<1.0		<0.05	20	<0.05-<0.25		
2-Chloronaphthalene	ug/L	<0.25	2	<0.25	<1		< 0.05	21	< 0.05-< 0.25		
1-Methylnaphthalene	ug/L	<0.01	2	< 0.01	< 0.04		< 0.01	8	< 0.01-< 0.05		
2-Methylnaphthalene	ug/L	<0.01	2	< 0.01	0.16		< 0.03	21	< 0.01-< 0.15		
3,3'-Dichlorobenzidene	ug/L	<0.5	2	< 0.5	< 2		< 0.1	20	< 0.1-< 0.5		
4-Bromophenyl-phenylether	ug/L	<0.05	2	< 0.05	< 0.2		< 0.01	21	< 0.01-< 0.05		
4-Chlorophenyl-phenylether	ug/L	<0.25	2	< 0.25	< 1		< 0.05	21	< 0.05-< 0.5		
Atrazine	ug/L	< 0.05	1	< 0.05	< 0.05	5.0 MAC	< 0.1	20	< 0.1-< 1		
Benzene	ug/L	< 0.4	3	< 0.4	< 0.4	5.0 MAC	< 0.4	28	< 0.4-< 0.5		
Benzidine	ug/L	Not tested in 2022					< 10	11	< 10-< 50		
Bis(-2-chloroethoxy) methane	ug/L	<0.25	2	< 0.25	< 1		< 0.25	1	< 0.25-< 0.25		
Bis(-2-chloroethyl) ether	ug/L	<0.25	2	< 0.25	< 1		< 0.05	21	< 0.05-< 0.25		
Bis(2-chloroisopropyl) ether	ug/L	<0.25	2	< 0.25	< 1		< 0.25	1	< 0.25-< 0.25		
Bis(2-ethylhexyl) phthalate	ug/L	<5	2	< 5	< 20		1.1	21	< 1-< 5		
Bromodichloromethane	ug/L	< 1	2	< 1	< 1		< 1	21	< 1-< 1		
Bromobenzene	ug/L	< 2	2	< 2	< 2		< 2	15	< 2-< 2		
Bromoform	ug/L	< 1	2	< 1	< 1		< 1	20	< 1-< 1		
Bromomethane	ug/L	< 1	2	< 1	< 1		< 1	21	< 1-< 2.7		
Butylbenzyl phthalate	ug/L	<2.5	2	< 2.5	< 10		< 2.5	3	< 2.5-< 2.5		
Carbon Tetrachloride (Tetrabromomethane)	ug/L	< 0.5	2	< 0.5	< 0.5	2.0 MAC	< 0.5	21	< 0.5-< 0.5		

Appendix A, Table 1 continued

Parameter		2022 Analytical Results				Canadian Guidelines	Ten Year Results (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range	Minimum - Maximum	
				Minimum	Maximum						
Chloroform	ug/L	< 1	2	< 1	< 1		< 1	21	< 1-< 1		
Chloroethane	ug/L	< 1	2	< 1	< 1		< 1	21	< 1-< 1		
Chloromethane	ug/L	< 1	2	< 1	< 1		< 1	21	< 1-< 1		
Desethyl Atrazine	ug/L	< 0.1	1	< 0.1	< 0.1		< 0.1	13	< 0.1-< 0.5		
Dibromochloromethane	ug/L	< 1	2	< 1	< 1		< 1	20	< 1-< 1		
Dichlorodifluoromethane	ug/L	< 2	2	< 2	< 2		< 2	18	< 2-< 2		
Dichloromethane	ug/L	< 2	2	< 2	< 2	50 MAC	< 2	20	< 2-< 2		
Diethyl phthalate	ug/L	<0.05	2	< 0.25	< 1		0.0615	20	< 0.05-1		
Dimethyl phthalate	ug/L	<0.25	2	< 0.25	< 1		< 0.05	20	< 0.05-< 0.25		
Di-n-butyl phthalate	ug/L	<2.5	2	< 2.5	< 10		0.93	19	< 0.05-4.9		
Di-n-octyl phthalate	ug/L	<0.25	2	< 0.25	< 1		< 0.05	20	< 0.05-< 0.25		
Diuron	ug/L	< 10	2	< 10	< 10	150 MAC	< 0.1	16	< 0.1-< 10		
Ethylbenzene	ug/L	< 0.4	2	< 0.4	< 0.4	140 MAC and ≤ 1.6 AO	< 0.4	28	< 0.4-< 0.5		
Formaldehyde	ug/L	< 10	2	< 10	< 10	No Guideline Required	< 10	19	< 10-< 10		
Hexachlorobenzene	ug/L	< 0.005	1	< 0.005	< 0.005		< 0.003	20	< 0.003-< 0.5		
Hexachlorobutadiene	ug/L	< 0.5	2	< 0.25	< 1		< 0.25	27	< 0.004-< 0.5		
Hexachlorocyclopentadiene	ug/L	<0.25	2	< 0.25	< 1		< 0.05	22	< 0.01-< 0.25		
Hexachloroethane	ug/L	<0.25	2	< 0.25	< 1		< 0.05	22	< 0.003-< 0.25		
Isophorone	ug/L	<0.5	2	< 0.25	< 1		< 0.05	21	< 0.05-< 0.25		
Methyltertiarybutylether (MTBE)	ug/L	< 4	2	< 4	< 4	15 AO	< 4	34	< 0.5-< 4		
Monochlorobenzene	ug/L	< 0.5	2	< 0.5	< 0.5	80 MAC	< 0.5	21	< 0.5-< 0.5		
N-Nitrosodimethylamine (NDMA)		2.5	2	< 1	< 4		< 0.2	19	< 0.2-< 1		
Nitrobenzene	ug/L	<0.25	2	< 0.25	< 1		< 0.05	21	< 0.05-< 0.25		
N-nitroso-di-n-propylamine	ug/L	2.5	2	< 1	< 4		< 0.2	20	< 0.2-< 1		
N-nitrosodiphenylamine	ug/L	2.5	2	< 1	< 4		< 1	2	< 1-< 1		
Octachlorostyrene	ug/L	< 0.005	1	< 0.005	< 0.005		< 0.003	20	< 0.003-< 0.005		
Styrene	ug/L	<0.4	2	<0.4	<0.5		<0.4	32	<0.4-<0.5		
Tetrachloroethene	ug/L	< 0.5	2	< 0.5	< 0.5	10 MAC	< 0.5	21	< 0.5-< 0.5		
Toluene	ug/L	< 0.4	3	< 0.4	< 0.4	60 MAC and ≤ 24 AO	< 0.4	28	< 0.4-< 0.5		
Triallate	ug/L	< 0.05	2	< 0.05	< 0.05	Guideline Archived	< 0.05	20	< 0.0003-< 5		
Trichloroethylene	ug/L	< 0.5	2	< 0.5	< 0.5	5.0 MAC	< 0.5	18	< 0.5-< 0.5		
Trichlorofluoromethane	ug/L	< 4	2	< 4	< 4		< 4	1	< 4-< 4		
Trichlorotrifluoroethane	ug/L	< 2	2	< 2	< 2		<0.5	20	<0.5-<0.5		
Vinyl Chloride (Chloroethene)	ug/L	<0.5	2	<0.5	<0.5	2.0 MAC	<0.5	21	<0.5-<0.5		
o-Xylene	ug/L	< 4	2	< 4	< 4		< 4	1	< 4-< 4		
m&p-Xylene	ug/L	< 0.4	2	< 0.4	< 0.4		< 0.4	27	< 0.4-< 1		
Xylenes (Total)	ug/L	< 0.4	2	< 0.4	< 0.4	90 MAC and ≤ 20 AO	< 0.4	27	< 0.4-< 1		

Appendix A, Table 1 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Minimum - Maximum
				Minimum	Maximum				Minimum - Maximum		
Miscellaneous											
Perfluoropentanoic Acid (PFPeA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorohexanoic Acid (PFHxA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluoroheptanoic Acid (PFHpA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorooctanoic Acid (PFOA)	ng/L	< 2	2	< 2	< 2	0.2 MAC	< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorononanoic Acid (PFNA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorododecanoic acid (PFDoA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorodecanoic Acid (PFDA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluoroundecanoic Acid (PFUnA)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorotridecanoic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorotetradecanoic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorobutanesulfonic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluoropentanesulfonic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	1	< 0.02-< 0.02		2/yr
Perfluorohexanesulfonic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluoroheptanesulfonic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluoroctanesulfonic Acid	ng/L	< 2	2	< 2	< 2		< 0.02	1	< 0.02-< 0.02		2/yr
Perfluorononane sulfonic Acid (PFOS)	ng/L	< 2	2	< 2	< 2	0.6 MAC	< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorodecanesulfonic Acid (PFDS)	ng/L	< 2	2	< 2	< 2		< 0.02	3	< 0.02-< 0.02		2/yr
Perfluorooctane Sulfonamide (PFOSA)	ng/L	< 4	2	< 4	< 4		< 0.02	3	< 0.02-< 0.02		2/yr
4:2 Flurotelomer Sulfonic Acid	ng/L	< 4	2	< 4	< 4		< 0.02	2	< 0.02-< 0.02		2/yr
6:2 Flurotelomer Sulfonic Acid	ng/L	< 4	2	< 4	< 4		< 0.02	1	< 0.02-< 0.02		2/yr
8:2 Flurotelomer Sulfonic Acid	ng/L	< 4	2	< 4	< 4		< 0.02	1	< 0.02-< 0.02		2/yr

Notes: mg/L = milligrams per litre; ug/L = micrograms per litre; ND = Not Detected; CFU = Colony Forming Units; NTU = Nephelometric Units; TCU = True Colour Units; AO = Aesthetic Objective; MAC = Max. Acceptable Conc.; Median = middle point of all values

APPENDIX A
TABLE 2. 2022 TREATED WATER QUALITY AFTER GOLDSTREAM WATER TREATMENT PLANT

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency										
			Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range								
Physical Parameters (ND means less than instrument can detect)																				
Alkalinity, Total	mg/L	16.15	12	14.7	17.7		13.4	109	6.92-18.1	12/yr										
Carbon, Dissolved Organic	mg/L	1.9	12	1	2.3		1.7	90	< 0.5-370	12/yr										
Carbon, Total Organic	mg/L	1.75	12	1.4	2.1	Guideline Archived	1.8	90	0.93-4.99	12/yr										
Colour, True	TCU	< 2	53	< 2	6	≤ 15 AO	3.9	393	< 1.4-10	52/yr										
Conductivity @ 25 C	uS/cm	50.3	54	45.4	56.8		45.7	390	31.1-98.6	52/yr										
Hardness as CaCO ₃	mg/L	16.35	12	15.2	17.7	No Guideline Required	17.3	121	12-22.1	12/yr										
Odour	Odour Profile	1	233	1	1	Inoffensive	1	1811	1-1	250/yr										
pH	pH units	7.35	55	6.9	7.84	7.0-10.5 AO	7.05	412	6.54-8.24	52/yr										
Taste	Flavour Profile	1	229	1	1	Inoffensive	1	1800	1-1	250/yr										
Total Dissolved Solids	mg/L	42	12	28	54	<500 AO	27.15	90	< 10-78	12/yr										
Total Suspended Solids	mg/L	< 1	12	< 1	2.7		< 1	89	0.1-10.9	12/yr										
Total Solids	mg/L	34	12	20	110		32	86	< 1-< 100	12/yr										
Turbidity, Grab Samples	NTU	0.2	241	0.15	0.85	1.0 MAC	0.3	1859	0.14-6.3	250/yr										
Water Temperature, Grab Samples	degrees C	8.8	241	3.7	18.6	≤ 15 AO	10.6	1862	2.5-21.1	250/yr										
Non-Metallic Inorganic Chemicals (ND means less than instrument can detect)																				
Bromate	mg/L as BrO ₃	< 0.0095	12	< 0.0095	< 0.0095	0.01 MAC	< 0.0095	10	< 0.0095-0.011											
Bromide	ug/L as Br	< 0.01	4	< 0.01	0.018		< 10	30	0.018-43	4/yr										
Chloride	mg/L as Cl	3.9	4	2.4	4.30	≤ 250 AO	4.2	23	< 0.045-5.3	4/yr										
Chlorate, dissolved	mg/L as ClO ₂	< 0.1	12	< 0.1	< 0.1	1 MAC	< 0.1	16	< 0.1-< 0.1	4/yr										
Chlorite, dissolved	mg/L as ClO ₃	<0.1	9	<0.1	<0.1	1 MAC	< 0.1	10	< 0.1-< 0.1	12/yr										
Cyanide	mg/L as Cn	< 0.0005	4	< 0.0005	0.00181	0.2 MAC	0.00055	22	< 0.0005-< 0.006	4/yr										
Fluoride	mg/L as F	< 0.05	4	< 0.05	< 0.05	1.5 MAC	< 0.05	11	< 0.02-< 0.05	4/yr										
Nitrate, Dissolved	ug/L as N	< 20	12	< 20	29	10000 MAC	< 20	86	< 0.02-47.5	12/yr										
Nitrite, Dissolved	ug/L as N	< 5	12	< 5	< 5	1000 MAC	< 5	85	< 0.3-5	12/yr										
Nitrate + Nitrite	ug/L as N	< 20	12	< 20	29		< 20	86	2.9-47.5	12/yr										
Nitrogen, Ammonia	ug/L as N	245	12	98	340		< 190	90	0.11-760	12/yr										
Nitrogen, Total Kjeldahl	ug/L as N	371	12	208	449		344	85	74-950	12/yr										
Nitrogen, Total	ug/L as N	371	12	208	467		343	90	75.6-976	12/yr										
Phosphate, Ortho, Dissolved	ug/L as P	< 1	12	< 1	2.7		< 5	86	0.1-6.2	12/yr										
Phosphorus, Total, Dissolved	ug/L as P	2.15	12	1.3	4.2		2.9	90	0.37-< 30	12/yr										
Phosphorus, Total	ug/L as P	2.6	12	< 1	5.5		2.9	90	< 1-14	12/yr										
Silica	mg/L as SiO ₂	4.8	12	4	5.2		4.1	81	2.91-5.2	12/yr										
Silicon	ug/L as Si	2075	12	1760	2590		1,930.00	91	1400-2740	12/yr										
Sulphate	mg/L as SO ₄	1.25	12	< 1	< 10	≤ 500 AO	1.5	88	0.8-5.31	12/yr										
Sulphide	mg/L as H ₂ S	< 0.0018	12	< 0.0018	< 0.0018	≤ 0.05 AO	< 0.0018	11	< 0.0018-0.027	12/yr										
Sulfur	mg/L as S	< 3	12	< 3	< 3		< 3	91	< 3-< 3	12/yr										

Appendix A, Table 2 continued

PARAMETER	Parameter Name	Units of Measure	2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency									
				Samples Analyzed	Range			10 Year Median	Samples Analyzed	Range										
Metallic Inorganic Chemicals (ND means less than instrument can detect)																				
Aluminum	ug/L as Al		13.9	12	6.3	29.5	2900 MAC / 100 OG	16.4	91	4.5-67.7	12/yr									
Antimony	ug/L as Sb		< 0.5	12	< 0.5	< 0.5	6 MAC	< 0.5	91	< 0.02-< 0.5	12/yr									
Arsenic	ug/L as As		< 0.1	12	< 0.1	< 0.1	10 MAC	< 0.1	91	0.04-0.17	12/yr									
Barium	ug/L as Ba		3.65	12	3.3	4	2000 MAC	3.8	91	3.3-4.8	12/yr									
Beryllium	ug/L as Be		< 0.1	12	< 0.1	< 0.1		< 0.1	90	< 0.01-< 0.1	12/yr									
Bismuth	ug/L as Bi		< 1	12	< 1	< 1		< 1	91	< 0.005-< 1	12/yr									
Boron	ug/L as B		< 50	12	< 50	< 50	5000 MAC	< 50	91	< 10-50	12/yr									
Cadmium	ug/L as Cd		< 0.01	12	< 0.01	< 0.01	7 MAC	< 0.01	91	< 0.005-< 0.1	12/yr									
Calcium	mg/L as Ca		4.725	12	4.33	5.06	No Guideline Required	4.95	91	4.18-6.82	12/yr									
Chromium	ug/L as Cr		< 1	12	< 1	< 1	50 MAC	< 1	91	< 0.1-1.2	12/yr									
Cobalt	ug/L as Co		< 0.2	12	< 0.2	< 0.2		< 0.2	91	0.023-< 0.5	12/yr									
Copper	ug/L as Cu		1.965	12	1.24	6.28	2000 MAC / ≤ 1000 AO	13	91	1.03-202	12/yr									
Iron	ug/L as Fe		19.6	12	11.5	50.4	≤ 300 AO	26	91	12.1-198	12/yr									
Lead	ug/L as Pb		< 0.2	12	< 0.2	< 0.2	5 MAC	< 0.2	91	0.017-0.92	12/yr									
Lithium	ug/L as Li		< 2	12	< 2	< 2		< 5	53	< 0.5-13.5	12/yr									
Magnesium	mg/L as Mg		1.105	12	1.03	1.24	No Guideline Required	1.15	91	0.146-1.41	12/yr									
Manganese	ug/L as Mn		4	12	1.6	17.6	120 MAC / ≤ 20 AO	4.8	91	1.4-51.1	12/yr									
Mercury, Total	ug/L as Hg		< 0.0019	12	< 0.0019	< 0.0019	1.0 MAC	0.0023	89	< 0.0019-< 10	12/yr									
Molybdenum	Ug/L as Mo		< 1	12	< 1	< 1		< 1	91	< 0.05-< 1	12/yr									
Nickel	mg/L as Ni		< 1	12	< 1	< 1		< 1	91	0.206-1.6	12/yr									
Potassium	mg/L as K		0.127	12	0.119	0.135		0.135	91	0.111-0.216	12/yr									
Selenium	ug/L as Se		< 0.1	12	< 0.1	< 0.1	50 MAC	< 0.1	91	< 0.04-< 0.1	12/yr									
Silver	ug/L as Ag		< 0.02	12	< 0.02	< 0.02	No Guideline Required	< 0.02	91	< 0.005-0.058	12/yr									
Sodium	mg/L as Na		3.195	12	1.66	3.55	≤ 200 AO	1.7	91	1.39-3.56	12/yr									
Strontium	ug/L as Sr		14.1	12	13	14.9	7000 MAC	15.4	91	13-19.7	12/yr									
Thallium	ug/L as Tl		< 0.01	12	< 0.01	< 0.01		< 0.01	91	< 0.002-< 0.05	12/yr									
Tin	ug/L as Sn		< 5	12	< 5	< 5		< 5	91	< 0.2-< 5	12/yr									
Titanium	ug/L as Ti		< 5	12	< 5	< 5		< 5	91	< 0.05-< 5	12/yr									
Uranium	ug/L as U		< 0.1	12	< 0.1	< 0.1	20 MAC	< 0.1	91	0.004-< 0.1	12/yr									
Vanadium	ug/L as V		< 5	12	< 5	< 5		< 5	91	< 0.2-< 5	12/yr									
Zinc	ug/L as Zn		< 5	12	< 5	< 5	≤ 5000 AO	< 5	91	0.37-54.1	12/yr									
Zirconium	ug/L as Zr		< 0.1	12	< 0.1	< 0.1		< 0.1	91	< 0.1-< 0.5	12/yr									
Microbial Parameters (ND means less than method or instrument can detect)																				
Coliform Bacteria																				
Coliforms, Total	CFU/100 mL		< 1	241	< 1	6	0 MAC	1874	0-200	ND-85	250/yr									
E. coli	CFU/100 mL		< 1	241	< 1	< 1	0 MAC	1873	0-< 1	ND	250/yr									

Appendix A, Table 2 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency		
			Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range
Heterotrophic/Other Bacteria												
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	< 10	235	< 1	40		< 10	1736	0-770	250/yr		
Disinfectants (ND means less than instrument can detect)												
Disinfectants												
Chlorine, Total Residual	mg/L as Cl ₂	1.86	239	1.53	2.23	No Guideline Required (chloramines)	1.85	678	0.8-2.33	250/yr		
Monochloramine	mg/L as Cl ₂	1.72	239	1.09	2.13	No Guideline Required (chloramines)	1.71	663	0-2.17	250/yr		

Notes: mg/L = milligrams per litre; ug/L = micrograms per litre; ND = Not Detected; CFU = Colony Forming Units; NTU = Nephelometric Units; TCU = True Colour Units; AO = Aesthetic Objective; MAC = Max. Acceptable Conc.; Median = middle point of all values

APPENDIX A

TABLE 3. 2022 TREATED WATER QUALITY AFTER SOOKE RIVER ROAD WATER TREATMENT PLANT

PARAMETER		2022 ANALYTICAL RESULTS					CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)					Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		Minimum - Maximum	Target Sampling Frequency	
				Minimum	Maximum				Minimum	Maximum			
Physical Parameters (ND means less than instrument can detect)													
Alkalinity, Total	mg/L	15.9	13	14.8	17.7		16.35	146	7.1-19.4		12/yr		
Colour, True	TCU	< 2	36	< 2	7.0	≤ 15 AO	3	461	1-11.3		52/yr		
Conductivity @ 25 C	uS/cm	52.7	36	49.0	61.5		56.7	458	26.4-71.6		52/yr		
Hardness as CaCO ₃	mg/L	16.25	8	15.1	16.5	No Guideline Required	16.9	35	15.3-29.3		6/yr		
Odour	Flavour Profile	1.0	36	1.0	1.0	Inoffensive	1	468	1-1		52/yr		
pH	pH units	7.5	34	7.0	8.2	7.0-10.5 AO	7.43	459	6.32-8.32		52/yr		
Taste	Flavour Profile	1.0	34	1.0	1.0	Inoffensive	1	467	1-2		52/yr		
Turbidity, Grab Samples	NTU	0.3	37	0.2	0.5	1 MAC	0.29	485	0.15-1.3		52/yr		
Water Temperature, Grab Samples	degrees C	9.3	39	4.7	18.0	≤ 15 AO	11.05	486	4.3-20		52/yr		
Microbial Parameters (ND means less than instrument can detect)													
Coliform Bacteria													
Coliform, Total	CFU/100 mL	< 1	39	< 1	1	0 MAC	0	487	0-1		52/yr		
<i>E. coli</i>	CFU/100 mL	< 1	40	< 1	< 1	0 MAC	0	487	0-1		52/yr		
Heterotrophic Bacteria													
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	< 10	35	< 10	30		< 10	438	<10-1230		52/yr		
Disinfectants (ND means less than instrument can detect)													
Disinfectants													
Chlorine, Total Residual	mg/L as Cl ₂	2.03	39	1.28	2.38	No Guideline Required	1.48	490	0.78-4.2		52/yr		
Monochloramine	mg/L as Cl ₂	1.79	37	1.16	2.1	No Guideline Required	1.62	471	0.03-3.1		52/yr		
Metallic Inorganic Chemicals (ND means less than instrument can detect)													
Aluminum	ug/L as Al	13.55	8	7.4	19.5	2900 MAC / 100 OG	13.9	35	5.3-22.7		6/yr		
Antimony	ug/L as Sb	< 0.5	8	< 0.5	< 0.5	6 MAC	< 0.5	35	< 0.5-1.5		6/yr		
Arsenic	ug/L as As	< 0.1	8	< 0.1	< 0.1	10 MAC	< 0.1	35	< 0.1-1.0		6/yr		
Barium	ug/L as Ba	3.6	8	3.5	4	2000 MAC	3.7	35	3.3-4.2		6/yr		
Beryllium	ug/L as Be	< 0.1	8	< 0.1	< 0.1		< 0.1	35	< 0.1-1.0		6/yr		
Bismuth	ug/L as Bi	< 1	8	< 1	< 1		< 1	35	< 1-10		6/yr		
Boron	ug/L as B	< 50	8	< 50	< 50	5000 MAC	< 50	35	< 50-500		6/yr		
Cadmium	ug/L as Cd	< 0.01	8	< 0.01	< 0.01	7 MAC	< 0.01	35	< 0.01-0.015		6/yr		
Calcium	mg/L as Ca	4.68	8	4.35	4.79	No Guideline Required	4.91	37	4.31-7.67		6/yr		
Chromium	ug/L as Cr	< 1	8	< 1	< 1	50 MAC	< 1	35	< 1-10		6/yr		
Cobalt	ug/L as Co	< 0.2	8	< 0.2	0.3		< 0.2	35	< 0.2-1.0		6/yr		
Copper	ug/L as Cu	37.5	8	19.2	67.9	2000 MAC / ≤ 1000 AO	28.7	35	10.9-80.4		6/yr		

Appendix A, Table 4 continued

PARAMETER		2022 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)				Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range	Minimum - Maximum	
				Minimum	Maximum						
Iron	ug/L as Fe	19.95	8	12.2	31.4	≤ 300 AO	24.4	35	12-53		6/yr
Lead	ug/L as Pb	< 0.2	8	< 0.2	0.3	5 MAC	0.22	37	< 0.2-0.64		6/yr
Lithium	ug/L as Li	< 2	8	< 2	< 2		< 2	17	< 2-< 5		6/yr
Magnesium	mg/L as Mg	1.105	8	1.03	1.17	No Guideline Required	1.15	35	1-1.34		6/yr
Manganese	ug/L as Mn	2.45	8	1.6	5.9	120 MAC / ≤ 20 AO	3.4	35	1.3-10		6/yr
Mercury, Total	ug/L as Hg	< 0.0019	8	< 0.0019	< 0.0019	1.0 MAC	< 0.002	35	< 0.0019-< 0.01		6/yr
Molybdenum	ug/L as Mo	< 1	8	< 1	< 1		< 1	35	< 1-< 1		6/yr
Nickel	ug/L as Ni	< 1	8	< 1	< 1		< 1	35	< 1-< 1		6/yr
Potassium	mg/L as K	0.127	8	0.121	0.143		0.134	35	0.115-0.247		6/yr
Selenium	ug/L as Se	< 0.1	8	< 0.1	< 0.1	50 MAC	< 0.1	35	< 0.1-0.1		6/yr
Silver	ug/L as Ag	ND	6	ND	0	No Guideline Required	< 0.02	35	< 0.02-< 0.02		6/yr
Sodium	mg/L as Na	3.53	8	3.24	4.67	≤ 200 AO	4.41	35	3.44-7.02		6/yr
Strontium	ug/L as Sr	13.9	8	13.2	15.2	7000 MAC	14.8	35	13.2-17.1		6/yr
Thallium	ug/L as Tl	< 0.01	8	< 0.01	< 0.01		< 0.01	35	< 0.01-< 0.05		6/yr
Tin	ug/L as Sn	< 5	8	< 5	< 5		< 5	35	< 5-< 5		6/yr
Titanium	ug/L as Ti	< 5	8	< 5	< 5		< 5	35	< 5-< 5		6/yr
Uranium	ug/L as U	< 0.1	8	< 0.1	< 0.1	20 MAC	< 0.1	35	< 0.1-< 0.1		6/yr
Vanadium	ug/L as V	< 5	8	< 5	< 5		< 5	35	< 5-< 5		6/yr
Zinc	ug/L as Zn	< 5	8	< 5	< 5	≤ 5000 AO	< 5	35	< 5-79.4		6/yr
Zirconium	ug/L as Zr	< 0.1	8	< 0.1	< 0.1		< 0.1	35	< 0.1-< 0.5		6/yr

Notes: mg/L = milligrams per litre; ug/L = micrograms per litre; ND = Not Detected; CFU = Colony Forming Units; NTU = Nephelometric Units; TCU = True Colour Units; AO = Aesthetic Objective; MAC = Max. Acceptable Conc.; Median = middle point of all values

APPENDIX A

TABLE 4. 2022 TREATED WATER QUALITY TRANSMISSION / DISTRIBUTION SYSTEMS GOLDSTREAM SERVICE AREA

PARAMETER	Parameter Name	Units of Measure	2022 ANALYTICAL RESULTS	Median Value	Samples Analyzed	Range		CANADIAN GUIDELINES	TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency
						Minimum	Maximum		≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range
Metals (ND means less than instrument can detect)												
Mercury, Total	ug/L as Hg		< 0.0019	24	< 0.0019	0.00		1 MAC	< 0.002	136	< 0.0019-< 0.01	24/yr
Aluminum	ug/L as Al		13.6	24	5	23.20		2900 MAC / 100 OG	14.1	153	6.3-61	24/yr
Antimony	ug/L as Sb		< 0.5	24	< 0.5	< 0.5		6 MAC	< 0.5	153	< 0.5-5.59	24/yr
Arsenic	ug/L as As		< 0.1	24	< 0.1	0.25		10 MAC	< 0.1	153	< 0.1-1.55	24/yr
Barium	ug/L as Ba		3.65	24	2.9	4.20		2000 MAC	3.8	153	2.8-4.7	24/yr
Boron	ug/L as B		< 50	24	< 50	< 50		5000 MAC	< 50	153	< 50-50	24/yr
Cadmium	ug/L as B		< 0.01	24	< 0.01	< 0.01		7 MAC	< 0.01	153	< 0.01-0.468	24/yr
Chromium	ug/L as Cr		< 1	24	< 1	< 1		50 MAC	< 1	153	< 0.1-1.3	24/yr
Copper	mg/L as Cu		5.815	24	1.65	34.60		2000 MAC / 1000 AO	24.4	153	0.66-12400	24/yr
Iron	ug/L as Fe		19.75	24	11.3	32.60		300 AO	28	153	12.5-359	24/yr
Lead	ug/L as Pb		< 0.2	24	< 0.2	0.43		5 MAC	0.265	8	< 0.2-1.93	24/yr
Manganese	ug/L as Mn		3.3	24	1.5	6.40		120 MAC / 20 AO	4.1	153	1.4-35.1	24/yr
Selenium	ug/L as Se		< 0.1	24	< 0.1	< 0.1		50 MAC	< 0.1	153	< 0.1-< 0.1	24/yr
Strontium	ug/L as Sr		14.45	24	13.1	17.60		7000 MAC	15.3	153	11.1-18.8	24/yr
Uranium	ug/L as U		< 0.1	24	< 0.1	< 0.1		20 MAC	< 0.1	153	< 0.1-< 0.1	24/yr
Zinc	ug/L as Zn		< 5	24	< 5	13.40		≤ 5000 MAC	< 5	153	< 5-1660	24/yr
Sodium	mg/L as Na		3.22	24	3.04	3.78		≤ 200 AO	1.725	152	1.46-13	24/yr
Disinfection By-products Parameters (ND means less than method or instrument can detect)												
Nitrosamines												
N-Nitrosodiethylamine	ng/L		< 1.9	23	< 1.9	< 2.2			< 1.9	98	0.000375-3.8	24/yr
N-Nitrosodimethylamine	ng/L		< 1.9	23	< 1.9	3.3		40 MAC	< 1.9	19	< 1.9-4.9	24/yr
N-Nitroso-di-n-butylamine	ng/L		< 1.9	23	< 1.9	< 2.2			< 2	93	< 0.157-42	24/yr
N-nitroso-di-n-propylamine	ng/L		< 1.9	23	< 1.9	< 2.2			< 2	35	< 1.9-< 2.2	24/yr
N-Nitrosoethylmethylamine	ng/L		< 1.9	23	< 1.9	< 2.2			< 2	92	0-< 2.2	24/yr
N-Nitrosomorpholine	ng/L		< 1.9	23	< 1.9	< 2.2			< 2	93	0.00102-4.6	24/yr
N-nitrosopiperidine	ng/L		< 1.9	23	< 1.9	< 2.2			< 2	91	< 0.0357-< 10	24/yr
N-Nitrosopyrrolidine	ng/L		< 1.9	23	< 1.9	< 2.2			< 2	92	< 0.0662-< 8	24/yr
Haloacetic Acids (HAAs)												
Total Haloacetic Acids	ug/L		16	24	< 5	20		80 MAC	14	184	4.23-104	24/yr
Monobromoacetic Acid (MBAA)	ug/L		< 5	24	< 5	< 5			< 5	185	< 0.2-15.04	24/yr
Dichloroacetic Acid (DCAA)	ug/L		10	24	< 5	13			7.05	185	0.58-30	24/yr
Trichloroacetic Acid (TCAA)	ug/L		5.9	24	< 5	7.2			6.4	185	1.3-56	24/yr
Bromochloroacetic Acid (BCAA)	ug/L		< 5	24	< 5	< 5			< 5	185	0.13-11.63	24/yr

Appendix A, Table 4 continued

PARAMETER		2022 ANALYTICAL RESULTS	Samples Analyzed	CANADIAN GUIDELINES		TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency	
				Range	≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range		
Parameter Name	Units of Measure	Median Value	Minimum	Maximum			Minimum - Maximum			
Dibromoacetic Acid (DBAA)	ug/L	< 5	24	< 5	< 5		< 5	185	< 0.2-5.6	24/yr
Monochloroacetic Acid (MCAA)	ug/L	< 5	24	< 5	< 5		< 5	185	0.2-< 5	24/yr
Trihalomethanes TTHMs										
Total Trihalomethanes	ug/L	17	24	12	23	100 MAC	19	188	3.3-77.9	24/yr
Bromodichloromethane	ug/L	2	24	< 1	2.1		2	17	1.2-2.9	24/yr
Bromoform	ug/L	< 1	24	< 1	< 1		< 1	188	< 0.1-< 2	24/yr
Chlorodibromomethane	ug/L	< 1	24	< 1	< 1		< 1	17	< 1-< 1	24/yr
Chloroform	ug/L	16	24	12	21		16	17	9.6-19	24/yr

Notes: mg/L = milligrams per litre; ug/L = micrograms per litre; ND = Not Detected; CFU = Colony Forming Units; NTU = Nephelometric Units; TCU = True Colour Units; AO = Aesthetic Objective; MAC = Max. Acceptable Conc.; Median = middle point of all values

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TABLE 5. 2022 TREATED WATER QUALITY DISTRIBUTION SYSTEM SOOKE SERVICE AREA

PARAMETER	Parameter Name	Units of Measure	2022 ANALYTICAL RESULTS	Median Value	Samples Analyzed	CANADIAN GUIDELINES		TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency
						Range		≤ = Less than or equal to	10 Year Median	Samples Analyzed	
Metals (ND means less than instrument can detect)											
Mercury, Total	ug/L as Hg		< 0.0019	6	< 0.0019	< 0.0019	1 MAC	< 0.002	36	< 0.0019-< 0.05	6/yr
Aluminum	ug/L as Al		15.3	6	4.9	22.3	2900 MAC / 100 OG	14	38	7.5-242	6/yr
Antimony	ug/L as Sb		< 0.5	6	< 0.5	< 0.5	6 MAC	< 0.5	38	< 0.5-< 0.5	6/yr
Arsenic	ug/L as As		< 0.1	6	< 0.1	< 0.1	10 MAC	< 0.1	38	< 0.1-0.24	6/yr
Barium	ug/L as Ba		3.45	6	3.2	4.1	2000 MAC	3.7	38	3.2-4.6	6/yr
Boron	ug/L as B		< 50	6	< 50	< 50	5000 MAC	< 50	38	< 50-< 50	6/yr
Cadmium	ug/L as B		< 0.01	6	< 0.01	< 0.01	7 MAC	< 0.01	38	< 0.01-0.075	6/yr
Chromium	ug/L as Cr		< 1	6	< 1	< 1	50 MAC	< 1	38	< 1-< 1	6/yr
Copper	mg/L as Cu		6.42	6	4.35	31.7	2000 MAC / 1000 AO	5.40	44	0.85-417	6/yr
Iron	ug/L as Fe		53.9	6	39.2	91.5	300 AO	36.30	38	19.5-278	6/yr
Lead	ug/L as Pb		0.205	6	< 0.2	0.75	5 MAC	< 0.2	92	< 0.2-22.5	6/yr
Manganese	ug/L as Mn		2.65	6	2.1	4.9	120 MAC / 20 AO	2.90	45	< 0.01-1760	6/yr
Selenium	ug/L as Se		< 0.1	6	< 0.1	< 0.1	50 MAC	< 0.1	37	< 0.1-< 0.1	6/yr
Strontium	ug/L as Sr		16.25	6	15.8	19.2	7000 MAC	18.30	37	16.1-21.5	6/yr
Uranium	ug/L as U		< 0.1	6	< 0.1	< 0.1	20 MAC	< 0.1	38	< 0.1-< 0.1	6/yr
Zinc	ug/L as Zn		< 5	6	< 5	21.1	≤ 5000 MAC	< 5	38	< 5-660	6/yr
Sodium	mg/L as Na		3.635	6	3.36	4.23	≤ 200 AO	4.47	37	3.41-6.08	6/yr
Disinfection By-products Parameters (ND means less than method or instrument can detect)											
Nitrosamines											
N-Nitrosodiethylamine	ng/L		1.95	6	< 1.9	< 2.1		< 2	27	0.0000625-3.22	6/yr
N-Nitrosodimethylamine	ng/L		2	6	< 1.9	4.3	40 MAC	< 2	28	< 1-3.71	6/yr
N-Nitroso-di-n-butylamine	ng/L		1.95	6	< 1.9	< 2.1		< 2	24	< 0.268-< 3	6/yr
N-nitroso-di-n-propylamine	ng/L		1.95	6	< 1.9	< 2.1		< 2	9	< 1.9-< 2	6/yr
N-Nitrosoethylmethylamine	ng/L		1.95	6	< 1.9	< 2.1		< 2	24	< 0.082-< 2.1	6/yr
N-Nitrosomorpholine	ng/L		1.95	6	< 1.9	< 2.1		< 2	25	< 0.257-< 6.6	6/yr
N-nitrosopiperidine	ng/L		1.95	6	< 1.9	< 2.1		< 2	24	< 0.0806-< 25.9	6/yr
N-Nitrosopyrrolidine	ng/L		1.95	6	< 1.9	< 2.1		< 2	24	< 0.0806-< 141	6/yr
Haloacetic Acids (HAAs)											
Total Haloacetic Acids	ug/L		22.5	6	18	29	80 MAC	27	28	16-34	6/yr
Monobromoacetic Acid (MBAA)	ug/L		< 5	6	< 5	< 5		< 5	28	< 5-< 5	6/yr
Dichloroacetic Acid (DCAA)	ug/L		12.5	6	10	15		13	28	9.3-19	6/yr
Trichloroacetic Acid (TCAA)	ug/L		10	6	8	13		13	28	7-18	6/yr
Bromochloroacetic Acid (BCAA)	ug/L		< 5	6	< 5	< 5		< 5	28	< 5-< 5	6/yr

Appendix A, Table 5 continued

PARAMETER		2022 ANALYTICAL RESULTS	Samples Analyzed	CANADIAN GUIDELINES		TEN YEAR RESULTS (2012-2021)			Target Sampling Frequency
				Range	≤ = Less than or equal to	10 Year Median	Samples Analyzed	Range	
Parameter Name	Units of Measure	Median Value	Minimum	Maximum			Minimum - Maximum		
Dibromoacetic Acid (DBAA)	ug/L	< 5	6	< 5	< 5	< 5	28	< 5-< 5	6/yr
Monochloroacetic Acid (MCAA)	ug/L	< 5	6	< 5	< 5	< 5	28	< 5-< 5	6/yr
Trihalomethanes TTHMs									
Total Trihalomethanes	ug/L	27	6	21	30	100 MAC	33	28	25-49
Bromodichloromethane	ug/L	2	6	< 1	3		3	28	< 1-4.4
Bromoform	ug/L	< 1	6	< 1	< 1		< 1	28	< 1-< 1
Chlorodibromomethane	ug/L	< 1	6	< 1	< 1		< 1	28	< 1-< 1
Chloroform	ug/L	25	6	21	28		30	28	22-45

Notes: mg/L = milligrams per litre; ug/L = micrograms per litre; ND = Not Detected; CFU = Colony Forming Units; NTU = Nephelometric Units; TCU = True Colour Units; AO = Aesthetic Objective; MAC = Max. Acceptable Conc.; Median = middle point of all values



Making a difference...together

REPORT TO REGIONAL PARKS COMMITTEE MEETING OF WEDNESDAY, MAY 24, 2023

SUBJECT Capital Regional District Regional Parks Dam Safety – Critical Infrastructure

ISSUE

To provide information on the Capital Regional District (CRD) Regional Parks Dam Safety Program, which supports the operations, maintenance and lifecycle planning of critical dam infrastructure.

BACKGROUND

Dams within the Province of British Columbia are regulated under the *Water Sustainability Act* and its related *Dam Safety Regulation*. The CRD manages a portfolio of dams within regional park lands (Appendix A) and operates a comprehensive dam safety program to manage dam infrastructure within the legislative framework. Eleven dams are considered critical infrastructure and are included in the CRD Regional Parks Dam Safety Program. The CRD also owns other dams, associated with drinking water systems, that operate under the same legislative framework. Those dams are managed under the Integrated Water Services Dam Safety Program.

To meet the regulatory requirements, Regional Parks invests in and maintains critical aging dam infrastructure and undertakes regulatory inspections and engineered assessments to mitigate dam failure risks. Eighty percent of the dams included in the CRD Regional Park Dam Safety Program have a consequence classification of “significant” or greater, requiring a dam safety review be completed by a qualified professional engineer every 7 to 10 years.

The CRD Regional Parks Dam Safety Program 2023-2032 critical infrastructure investment plan is outlined in Appendix B. Plan implementation is complex, given the diversity of dam safety requirements, aging critical infrastructure, competing capital program priorities and climate impacts.

Extreme weather events and unpredictable climate scenarios are exposing the dams managed through the CRD Regional Parks Dam Safety Program to stressors the dams were not initially designed to accommodate. Existing dam safety guidelines and regulations do not address how to adapt dams to climate change conditions. CRD staff are exploring federal and provincial disaster mitigation and adaptation grant opportunities to conduct dam climate change vulnerability and risk assessment activities.

IMPLICATIONS

Financial Implications

The total value of dam infrastructure renewal funds needed to meet regulatory requirements over the next 10 years is approximately \$12 million. The CRD Board-approved 2023-2027 Regional Parks Capital Plan includes \$4 million to design and construct upgrades to Beaver Lake, Durrance

Lake and Humpback Reservoir dams, representing 10% of the total approved budget. Additional ongoing funding is required to complete dam safety review and engineered assessments, based on timelines defined by the dam consequence classification. Regional Parks core operating funds are allocated annually to meet the operations, maintenance, surveillance and emergency response planning requirements.

Service Delivery Implications

CRD staff are tasked with implementing the CRD Regional Parks Dam Safety Program with contracted dam engineer experts. Operational and surveillance inspections, preventative maintenance activities, engineered assessments and emergency response processes are required to meet regulatory requirements.

Alignment with Board and Corporate Priorities

The *Capital Regional District 2023-2026 Board Priorities* identify Climate Action and Environment as a regional priority, including an initiative to increase resilience, community and adaptation planning to address climate-related risks and disasters (3c).

The CRD Regional Parks Dam Safety Program aligns with the *Capital Regional District 2023-2026 Corporate Plan* goals of enhancing the safety of aging dams in watersheds and mitigating against the risk of failures (2b-1), investing in and maintaining capital assets and undertaking regulatory monitoring (2b-2) and effective emergency management (9a).

Alignment with Existing Plans and Strategies

The *Interim CRD Regional Parks and Trails Strategic Plan 2022-2032* identifies a priority action to develop and implement an Asset Management Plan for regional parks and regional trails that achieves critical infrastructure lifecycle renewal that is well-planned, managed and funded, and is consistent with legislative requirements (4-3c).

Intergovernmental Implications

The Canadian Dam Association *Dam Safety Guidelines* and the Province of BC's *Dam Safety Regulation* states dam owners are accountable for the safe management of a dam through the dam's lifecycle and for any dam with a consequence classification of "significant" or greater, must have a dam emergency plan developed. The Dam Emergency Plan provides a description of the actions to be taken during an emergency, lists local emergency authority and contact information, and is to be reviewed and shared with local authorities annually.

CONCLUSION

The CRD manages 11 dams on regional park lands and operates a CRD Regional Parks Dam Safety Program to manage the dam infrastructure within the *Dam Safety Regulation* set by the Province of BC. The aging dam infrastructure is being exposed to climate-related stressors that the dams were not initially designed to accommodate and will require ongoing CRD staff resources and investment to meet regulatory requirements and mitigate dam failure risks.

RECOMMENDATION

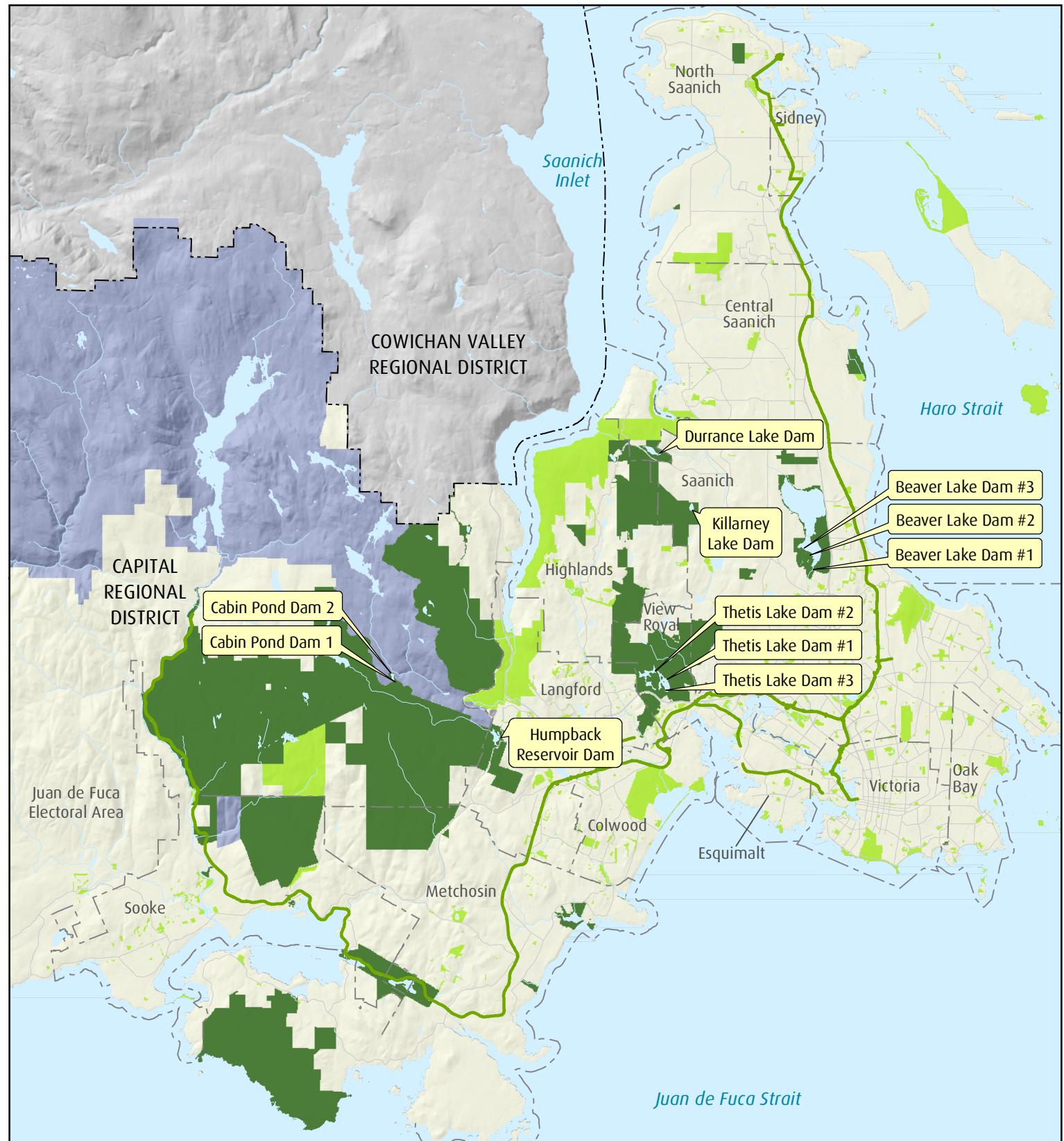
There is no recommendation. This report is for information only.

Submitted by:	Jeff Leahy, Senior Manager, Regional Parks
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

Appendix A: CRD Regional Parks Dam Portfolio – Map

Appendix B: CRD Regional Parks Dam Safety Program – Critical Infrastructure Investment Plan



Important This map is for general information purposes only. The Capital Regional District (CRD) makes no representations or warranties regarding the accuracy or completeness of this map or the suitability of the map for any purpose. **This map is not for navigation.** The CRD **will not be liable** for any damage, loss or injury resulting from the use of the map or information on the map and the map may be changed by the CRD at any time.

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- Regional Park
- Other Park / Protected Area
- Greater Victoria Water Supply Area
- First Nations Reserve
- Regional Trail
- Road / Highway
- Municipal / Electoral Boundary
- Regional District Boundary

Appendix A
CRD Regional Parks Dam Portfolio

**Regional Parks Committee
Staff Report
May 24, 2023**

CRD REGIONAL PARKS DAM SAFETY PROGRAM
CRITICAL INFRASTRUCTURE INVESTMENT PLAN

Dam Name	Type of Dam	Consequence Classification	Dam Safety Review*	Critical Dam Infrastructure Investment		
				Activity	2023-2027 Capital Plan	2028-2032 (Anticipated)
Beaver Lake Dam #1	Earth	High	2027	Design dam upgrade	Yes	No
				Submit dam alteration plan	Yes	No
				Construct dam upgrade	Yes	Yes
Beaver Lake Dam #2	Earth Saddle	High	2027	Design dam upgrade	Yes	No
				Submit dam alteration plan	Yes	No
				Construct dam upgrade	Yes	Yes
Beaver Lake Dam #3	Earth Saddle	High	2027	Design dam upgrade	Yes	No
				Submit dam alteration plan	Yes	No
				Construct dam upgrade	Yes	Yes
Durrance Lake Dam	Earth	Significant	N/A	Submit dam alteration plan	Yes	No
				Implement dam alteration plan	Yes	Yes
Killarney Lake Dam	Earth	Low	N/A	Site characterization	Yes	No
				Submit dam alteration plan	No	Yes
				Implement dam alteration plan	No	Yes
Thetis Lake Dam #1	Earth Saddle	High	2027	Geotechnical assessment	Yes	No
				Design dam upgrade	No	Yes
				Submit dam alteration plan	No	Yes
				Construct dam upgrade	No	Yes
Thetis Lake Dam #2	Earth Saddle	High	2027	Geotechnical assessment	Yes	No
				Design dam upgrade	No	Yes
				Submit dam alteration plan	No	Yes
				Construct dam upgrade	No	Yes
Thetis Lake Dam #3	Earth Saddle	Very High	2027	Geotechnical assessment	Yes	No
				Design dam upgrade	No	Yes
				Submit dam alteration plan	No	Yes
				Construct dam upgrade	No	Yes
Humpback Reservoir Dam	Concrete	Very High	2023	Upgrade dam spalling	Yes	No
				Breach and inundation assessment	No	Yes
Cabin Pond Dam #1	Earth	Low	N/A	Site characterization	No	Yes
				Submit dam alteration plan	No	Yes
Cabin Pond Dam #2	Earth	Significant	N/A	Site characterization	No	Yes
				Submit dam alteration plan	No	Yes

* Required submission year as defined by the Province of British Columbia Dam Safety Regulation, to be carried out by a Qualified Professional Engineer in accordance with the requirements of Section 20/36(4) of the Dam Safety Regulation.

REPORT TO REGIONAL PARKS COMMITTEE MEETING OF WEDNESDAY, MAY 24, 2023

SUBJECT CRD Regional Parks Division – 2023 Operational Update

ISSUE SUMMARY

To provide an update to the Regional Parks Committee on Regional Parks initiatives and projects.

BACKGROUND

Information is provided to update the Regional Parks Committee on current initiatives and projects.

Strategic Plan Priorities

Continued First Nations Engagement on the Strategic Plan

Board Direction

As part of initial engagement on development of the Strategic Plan, feedback was received from eight First Nations, and others expressed an interest in providing input but requested more time. On July 13, 2022, the CRD Board approved the Regional Parks and Trails Strategic Plan 2022-2032 on an interim basis for one year, while engagement with First Nations continues. Engagement has been ongoing with First Nations between August 2022 and April 2023. Staff are currently compiling feedback in preparation for bringing an engagement summary report and proposed edits to the Strategic Plan to the Committee and Board for consideration in Q2-Q3.

Regional Parks and Trails Strategic Plan Progress Report

Strategic Plan Priority 5.1

Progress on the implementation of the 10-year Regional Parks and Trails Strategic Plan will be reported each year. The progress report will reference the intended reporting indicators identified for each strategic priority, as well as provide an action status reflecting general progress made towards actions supporting each goal. The 2022 Progress Report was prepared in Q1 of 2023 and presented to Committee and Board this spring. The overall status for the 2022 year was calculated as 'on track', meaning 75-100% of the annual targets were progressed as envisioned within the Strategic Plan's 10-year action plan.

Species at Risk State of the Parks

Strategic Plan Priority 2-1a

Species at Risk are an important component of biodiversity within the region. Knowledge gaps impact the ability to effectively protect and manage species at risk, therefore work is underway to survey federally-listed species at risk in regional parks; this work will help inform an assessment of the state of ecological values in the regional parks system. The initiative is supported by several multi-year federal grants totalling up to \$227,000. The CRD hired two Conservation Technician staff in January 2023 to support additional data collection. A report on the state of parks is anticipated to be completed in Q4 of 2023.

Outdoor Recreation and Conservation Plan

Strategic Plan Priority 2-1b, 3-1a

Staff are scoping the development of a Conservation Plan that sets goals and targets for ecological research, protection, restoration, monitoring and enhancement and that incorporates traditional ecological knowledge, as well as the development of an Outdoor Recreation Plan that considers a range of desired user experiences, user objectives, compatibility and recreation setting characteristics. Due to the interconnectedness of managing environmental values within the CRD's regional parks while providing a diverse range of outdoor recreation opportunities for park visitors, staff will undertake these planning processes together and under one plan. A key component that will inform the development of the plan is the preparation of a State of Natural Values Report, which inventories and assesses the current condition of natural systems within CRD parks. Staff are presently developing a project charter and securing the necessary resources to undertake this initiative in 2023-2024.

Environmental Impact Assessment

Strategic Plan Priority 2-1c

The CRD Regional Parks Division is implementing an Impact Assessment process to improve infrastructure planning by assessing and mitigating the potential negative impacts of projects. After piloting a draft process, staff have finalized and are implementing the Environmental Impact Assessment Process. The process was informed by a similar one developed by BC Parks and takes into consideration cultural and environmental values.

Trail Guidelines

Strategic Plan Priority 3-1b

The CRD's regional parks contain over 485 kilometers of trails for people to visit and enjoy. In 2023, staff will develop a set of trail guidelines and best management practices to steer the location, development, maintenance and management of trails within regional parks. The guidelines and best management practices will help to protect the ecological, cultural and recreational values of the CRD's regional parks.

Resident Survey

Strategic Plan Priority 3-1c

A resident survey about Regional Parks and Trails will be mailed out to more than 5,000 CRD households in the fall of 2023. The CRD Regional Parks Division conducted resident surveys in 1992, 1998, 2005 and 2017. The surveys help to document public satisfaction, confirm visitor activities in the parks, assess understanding of the benefits of parks for conservation and recreation and get feedback on priorities for park management and facilities. Survey responses will be collected from September to November 2023. Data analysis and reporting of the resident survey results will occur between December 2023 and March 2024 (aligning with 2024 Regional Parks Committee, Transportation Committee and Board meeting schedules).

Lochside Regional Trail Licence Agreement

Strategic Plan Priority 4-1a, 4-1f, 4-3c

Securing a Licence Agreement for managing and operating the Lochside Regional Trail is a CRD Regional Parks Division priority for 2023. Staff have drafted a new licence agreement and are currently preparing associated mapping and asset inventory information to inform discussions with First Nations, provincial and municipal partners. Development of this Licence Agreement relates to an update of the Regional Trails Management Plan (priority action 4-1a), implementation of the regional active transportation network (priority action 4-1f) and work on an Asset Management Plan for regional trails (priority action 4-3c).

Regional Trails Widening and Lighting – Design (Phase A, B, C)

Strategic Plan Priority 4-1b

Preliminary design work for a section of the Galloping Goose Regional Trail, between Selkirk Trestle and Switch Bridge, is underway. The CRD has partnered and engaged with the Ministry of Transportation and Infrastructure (MOTI) and the City of Victoria to initiate designs for Phase A trail widening and lighting. Detailed designs for Phase A, a 300 m section between Gorge Road and Cecelia Road, are at 90% completion. Phase A detailed design project funds (\$67,000) are secured. Funds to complete detailed designs for Phases B and C are grant dependent; however, options to finance the project will be presented to the Transportation Committee in Q2.

Mayne Island Regional Trail

Strategic Plan Priority 4-1b

Construction of the Mayne Island Regional Trail is in progress with an anticipated completion date of December 2023. The total project cost to construct the 2.3 km multiuse trail between Village Bay (ferry terminal) and Miners Bay village is \$4M. The Government of Canada and Province of British Columbia are providing \$2.5M in funding through the Investing in Canada Infrastructure Program – Community, Culture and Recreation Infrastructure Grant. Additional grant funding of \$500,000 was secured in February 2023 through the BC Active Transportation Infrastructure Grants Program.

Regional Trails Closure Policy

Strategic Plan Priority 4-1d

Staff developed a new CRD Regional Parks Division policy for managing closures on regional trails in Q1 of 2023, in response to an initial Board motion in 2021 and Strategic Plan priority action 4-1d. An information report was provided to the CRD's Transportation Committee in May 2023. Municipalities have provided input into the development of this policy through participation in the CRD's Transportation Working Group between 2021-2023. The policy strives for a consistent approach to regional trail closures that minimizes disruptions to trail users through communications messaging, traffic management protocols, and by either implementing a partial closure that allows trail users to traverse safely through a work site or by providing a detour route that meets the region's All Ages and Abilities facility standard.

Electric Vehicle Charge Stations (Mill Hill, 728 and Regional Parks)

Strategic Plan Priority 4-2e

Feasibility studies are underway for the installation of Electric Vehicle (EV) charge stations at Mill Hill, and at 728 worksites, and at high-use regional park parking lots. The charge stations have been purchased through the CRD's Climate Action Program (with funding support from the Zero Emission Vehicle Infrastructure Program). Installations of the EV charge stations are anticipated in October/November 2023. Electrical capacity considerations at Mill Hill and 728 worksites will influence the total feasible number of EV charge stations to install in 2023. Priority high-use regional parks under consideration for public parking lot EV charge station installations include Elk/Beaver Lake Regional Park and Witty's Lagoon Regional Park.

Regional Trails Asset Renewal Plan

Strategic Plan Priority 4-3c

Through the Regional Trails Asset Renewal Plan Project, regional trail asset registry information is being updated and used to create a 20-year asset renewal plan. The updated information, including trail asset lifecycle status, condition and replacement values, will be used to inform the Regional Park Capital Project prioritization. The project is underway with a budget of \$66,000 and will be completed by June 2023.

Planning Process Update Project

Strategic Plan Alignment Priority Action 4-4a and 4-4b

In accordance with Strategic Plan direction, staff are undertaking a review and update of the existing regional parks management planning process that is based on the 2006 *Pathway for Regional Parks and Trails Management Planning* document. The update focuses on developing a planning process that is efficient, adaptable, evidence-based, addresses service level needs, financial implications and climate mitigation measures. An updated planning process would see an overall increase in the percentage of parks with management plans less than 15 years old. The update also emphasizes early and ongoing collaboration with First Nations and meaningful and inclusive stakeholder and public consultation. An updated planning process will be presented to the Board later this year.

Policy Review Project

Strategic Plan Alignment Priority Action 4-4a

Staff are creating an inventory of existing plans, procedures, standards, manuals, guidelines and policy documents related to regional parks and trails. Staff are reviewing the inventory to determine which policies are still in use and whether they need updating and are developing standardized templates for the update of existing, and development of future, policy documents. The inventory and templates may be used by Regional Parks to improve the management of policy documents that are under their purview. Staff have completed the inventory and are working to develop standardized policy document templates. This work will be ongoing and inform the planning process project.

Mount Work Management Plan

Strategic Plan Priority 4-4b

The process to finalize the Mount Work management plan continues. The draft management plan went out for public comment in 2022, and feedback received was incorporated into the final draft. In April 2023, the WSANEC Leadership Council (WLC) requested an extension to the management planning process for six months to provide time to work through remaining outstanding issues in the management plan. Staff are working with the WLC to determine a budget and timeline for completion of the management plan. Staff anticipate bringing the final version of the plan to the Regional Parks Committee and Board in Q3, 2023.

First Nations Engagement on Land Acquisition Strategy

Strategic Plan 4-5a, 4-5b

The process to update the Land Acquisition Strategy will take place over the rest of 2023 and into 2024. The first phase of the project is engagement with First Nations and is anticipated to run through the duration of 2023. Through the engagement process, the CRD is looking to understand First Nation interests related to land acquisition and key considerations that should be reflected in an updated strategy.

Regional Parks Asset Renewal Plan

Strategic Plan Priority 4-3c

Through the Regional Parks Asset Renewal Plan Project, regional park asset registry information is being updated and used to create a 20-year asset renewal plan. The updated information, including park asset lifecycle status, condition and replacement values, will be used to inform the CRD Regional Parks Division's Capital Project prioritization. The project will be initiated in June 2023, following the completion of the Regional Trails Asset Renewal Plan Project, and is anticipated to be completed March 2024, with a total project budget of \$100,000.

Inclusion and Accessibility Assessment

Strategic Plan Priority 5-1b

In 2022, an accessibility contract was launched at five regional parks to learn more about barriers and deterrents to access, and to identify improvements that can be made to enhance visitor experience opportunities at those parks. In addition, staff recently completed an internal audit to identify potential improvements to existing accessible features in regional parks to improve barrier-free visitor experiences. Work to make small “quick-win” improvements to parking facilities, pathways, picnic areas and more has begun. Building on this work, an accessibility audit for the three regional parks campgrounds will take place in 2023 to identify ways the CRD can improve camping experiences.

Other CRD Regional Parks Division Priorities

Humpback Dam Safety Review

The Humpback Dam safety review is being undertaken by a CRD contractor with a completion date of October 2023. A dam safety review is a legislated periodic review of a dam with a consequence classification of “high, very high, or extreme”, as defined through the Province of BC *Dam Safety Regulation*. The dam safety review for Humpback Dam will include an assurance statement and report prepared by a qualified professional engineer and will be submitted to the Dam Safety Office in the fall of 2023.

Elk/Beaver Lake Water Remediation Infrastructure

The Elk/Beaver Lake Initiative is a multi-pronged, holistic approach to address high nutrient levels in Elk/Beaver Lake and surrounding ecosystem. This approach aims to improve water quality, reduce frequency of blue-green algae and improve fish habitat through the implementation of two plans: a Watershed Management Plan and an In-lake Remediation Plan. The In-lake Remediation Plan includes the construction and installation of an oxygenation system in Elk Lake to improve water quality. In early 2023, construction began on the building to house the oxygenation system, near Hamsterly Road. Later in 2023, a diffuser line and oxygenator will be installed in the lake. In 2021, the Province contributed \$750,000 to help buy an oxygenator for the project and the CRD will be responsible for the system and ongoing maintenance costs once the system is operational.

Annual Paving Projects

The CRD conducts annual maintenance on asphalt surfaces in regional parks and trails to address safety concerns, improve visitors’ experiences and extend the life of the assets. In 2023, maintenance efforts will be focussed on the regional trail network with the following four projects. The Lochside Regional Trail will be repaved between Mills Road and Beacon Avenue (800 metres), with the work being made possible by a grant managed by the Victoria Foundation. A 175-metre portion of the Lochside Regional Trail, near Lochside Drive at Heritage Acres, will also be resurfaced to address root heave, cracking and slumping. The Galloping Goose Regional Trail, between the Millstream Trestle and Wale Road, will have minor surface repairs completed to address asphalt cracking. The Galloping Goose Regional Trail, Camden Avenue to Wale Road, and E&N Rail Trail – Humpback Connector, Hallowell Road to Island Highway, will have the centre lines and fog lines repainted. The value of these projects total \$393,502.

Galloping Goose Regional Trail – Bilston Creek Bridge #1 and Bridge #2 Replacement

The Galloping Goose Regional Trail has three bridges that span Bilston Creek. Situated in the City of Langford, Bilston Creek Bridge #1, located near Luxton Road, and Bilston Creek Bridge #2, located near Wild Ridge Way, are in poor condition and require replacement. The CRD has tendered the removal and replacement of the two bridges, with work scheduled to occur in the summer of 2023. Service disruptions to the trail will be managed by a detour route, with public communications provided in advance. The estimated value of the project is \$1.4 million.

Island View Beach Regional Park – Berm Design

Island View Beach Regional Park contains an approximately 320-metre-long berm that consists of varying material and was constructed prior to the establishment of the regional park. The berm separates the foreshore from low-lying park areas and supports the primary park trail. A 100-metre portion of the berm has been extensively damaged over the past few winter seasons and requires repair. Staff are seeking guidance from an engineering firm to design repairs and provide a cost estimate to restore the berm to its original state. The estimated value of this project is \$15,000.

Beaver Beach Waterline

The facilities at Beaver Beach provide essential infrastructure for Elk/Beaver Lake Regional Park visitors and are used year-round. The existing waterline infrastructure at the Beaver washroom location is at the end of service life and requires replacing. The project scope includes engineered detailed designs to repurpose the existing irrigation box, the installation of a new waterline to connect the Beaver Beach public washrooms, visitor centre, and new pipes to the irrigation system, and repaving existing pathways near the nature centre and public washrooms. An impact assessment has been completed, the archaeological Notice of Intent is drafted, and construction mobilization is planned for October 2023.

Selkirk Phase 0

As a result of a detailed condition assessment undertaken in 2021, the CRD has initiated a plan for repairs to the Selkirk Trestle beginning with preliminary investigation of, and repairs to, trestle pilings and support structures. The CRD, MOTI and the BC Transportation Financing Authority are operating within an established Memorandum of Understanding to share costs towards aspects of the Selkirk Trestle repair.

Starting in mid-February 2023, CRD contractors carried out Phase 0, which included inspections, repairs and deck maintenance work. A trestle lift was attempted in April 2023 to meet an MOTI obligation. The project budget of \$165,000 was sufficient to complete the scope of work defined for Phase 0.

Selkirk Phase 1 and 2 (Design)

The CRD has initiated pre-planning activities for the Selkirk Phase 1 and 2 (Design) Project. A statement of intent, including draft performance specifications, is being prepared and requires input from MOTI. The full detailed design package will include specifications for below-deck piling repair and structural support activities and will be inclusive of widening and lighting considerations. Approved project funds are dependent on the outcomes of a federal Active Transportation Fund application, submitted March 2022 by the Ministry of Transportation and Infrastructure. A Regional Trails Widening and Lighting Project Funding Options staff report will be presented to the Transportation Committee July 2023.

Mill Hill Sanitary Service Upgrade

To gain compliance with the City of Langford bylaw and to take pressure off an aging septic system, a new sanitary line to connect CRD Regional Parks Division headquarters to the sewer main on Atkins Avenue will be installed. The project budget is \$500,000 and includes both design and construction costs. Detailed designs are complete and the invitation to tender was released on March 24, closing May 5. Construction mobilization will start late June 2023 and is expected to last eight weeks, during which there will be impacts to visitor access and parking at Mill Hill Regional Park. A communications plan has been initiated for the project.

Brett Trestle Design

On Hold

The Brett Trestle Design Project is on hold due to full dependence on provincial Strategic Priorities grant funding. CRD Regional Parks was not successful in acquiring the funds through an application to the grant program in 2022. A Regional Trails Widening and Lighting Project Funding Options staff report will be presented to the Transportation Committee in July 2023.

RECOMMENDATION

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

Submitted by:	Jeff Leahy, Senior Manager, Regional Parks
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: Regional Parks Divisional Priorities – Gantt Chart

Today											
Feb '23	Mar '23	Apr '23	May '23	Jun '23	Jul '23	Aug '23	Sep '23	Oct '23	Nov '23	Dec '23	Finish
Planning Procedure Tue 03/01/23 - Thu 30/11/23											Fri 29/12/23
Regional trail Widening and Lighting Phase A Design Mon 02/01/23 - Fri 28/04/23				Regional Trail Widening and Lighting Phase B&C Design Mon 15/05/23 - Tue 31/10/23							
	Beaver Beach Waterline Wed 01/03/23 - Fri 28/07/23				Resident Survey Tue 16/05/23 - Tue 14/11/23		Regional Parks Asset Renewal Plan Mon 07/08/23 - Fri 29/12/23				
Selkirk Phase 0 Tue 03/01/23 - Fri 21/04/23											
Mill Hill Sanitary Service Upgrade Tue 03/01/23 - Fri 29/09/23									Accessibility Guidelines Proj Mon 02/10/23 - Tue 07/11/23		
Humpback Dam Safety Review Tue 03/01/23 - Fri 28/07/23								Brett Trestle Renewal Design Fri 08/09/23 - Fri 22/12/23			
Mount Work Management Plan Tue 03/01/23 - Fri 30/06/23						Gates and Security RFP Mon 17/07/23 - Fri 17/11/23					
	Matheson Lake Bridge Fri 03/02/23 - Fri 29/12/23										
Land Acquisition Strategy Update Phase 1 First Nations Engagement Tue 03/01/23 - Fri 29/12/23								Accessibility Guidelines Mon 02/10/23 - Tue 07/11/23			
	Paving Projects Fri 03/02/23 - Fri 29/09/23										
Strat Plan FN Engagement Tue 03/01/23 - Wed 12/07/23											
Trail Standards Tue 03/01/23 - Tue 30/05/23					Selkirk Phase 1 Thu 15/06/23 - Fri 29/09/23						
Bilsten Bridges Tue 03/01/23 - Fri 20/10/23											
	E/B Water Remediation Infrastructure Wed 01/03/23 - Fri 20/10/23										
	Strategic Plan Progress Report Fri 27/01/23 - Wed 10/05/23										
IVB Berm Design Tue 03/01/23 - Fri 30/06/23											
Mill Hill EV Char Tue 03/01/23 - T	Lochside Trail License Agreement Mon 20/02/23 - Tue 31/10/23										
Environmental Impact Assessment Tue 03/01/23 - Fri 31/03/23		Inclusion and Accessibility Assessment Mon 03/04/23 - Tue 21/11/23									
Conservation Plan SOW Tue 03/01/23 - Tue 04/04/23			Galloping Goose Widening and Lighting Design Section A Fri 14/04/23 - Fri 30/06/23								
Outdoor Recreation Plan SOW Tue 03/01/23 - Tue 04/04/23				Conservation and Outdoor Rec Plan Proj Tue 18/04/23 - Tue 06/06/23							
SAR State of the Parks Tue 03/01/23 - Fri 29/12/23											
Regional Trails Asset Renewal Plan Fri 06/01/23 - Fri 21/07/23											
Mayne Island Regional Trail Fri 06/01/23 - Fri 29/12/23											
Regional Trails Detour Policy Mon 09/01/23 - Wed 14/06/23											
	IBC Development Wed 01/03/23 - Fri 14/04/23										
		Lochside Trail License Agreement Mon 20/03/23 - Fri 27/10/23									
			IBC Development Mon 27/03/23 - Fri 28/04/2								
				Mountain Forest IMG Mon 03/04/23 - Tue 31/10/23							
				Wrigglesworth Lake IMG Mon 03/04/23 - Tue 31/10/23							
				Policy Review, Development and Standardization Mon 03/04/23 - Fri 29/12/23							
				Selkirk Phase 1&2 Design Mon 03/04/23 - Fri 15/09/23							
				728 EV Charge Stations Mon 03/04/23 - Fri 27/10/23							
				Regional Park EV Charge Stations Mon 03/04/23 - Thu 31/08/23							



CRD Regional Parks Division 2023 Operational Update

May 24, 2023







CRD



CRD





CRD



Welcome to the Galloping Goose Regional Trail

From here you can go west where the trail travels into the working landscapes of Langford and Colwood. It gradually winds its way into the rural landscape of Metchosin and finally through the wilderness of Sooke.

To the east, the Goose links the Westshore communities to Saanich and Victoria. In this direction the trail is almost entirely paved asphalt. Start at the east end of Johnson Street Bridge or get on to the Lochside Regional Trail at the Switch Bridge. Cycle, stroll or run along city back streets, rolling farmland and rugged ocean vistas. No matter which direction you choose, these trails offer spectacular West Coast scenery.



Excursions Abound!

Thetis Lake Regional Park off Six Mile Road is a popular excursion. This regional conservation area offers outdoor activities from hiking to swimming in a natural setting.

You will also travel near numerous points of interest, including Royal Roads University, Hatley Castle and Fort Rodd Hill National Historic Site.

To the east, scenic views await – Portage Inlet, the Gorge waterway, Victoria's inner harbour and its urban sights. You will pass over the historic Selkirk Trestle bustling with strollers and cyclists on a sunny afternoon.

Visit www.crd.bc.ca/parks for suggested day and weekend cycle trips.

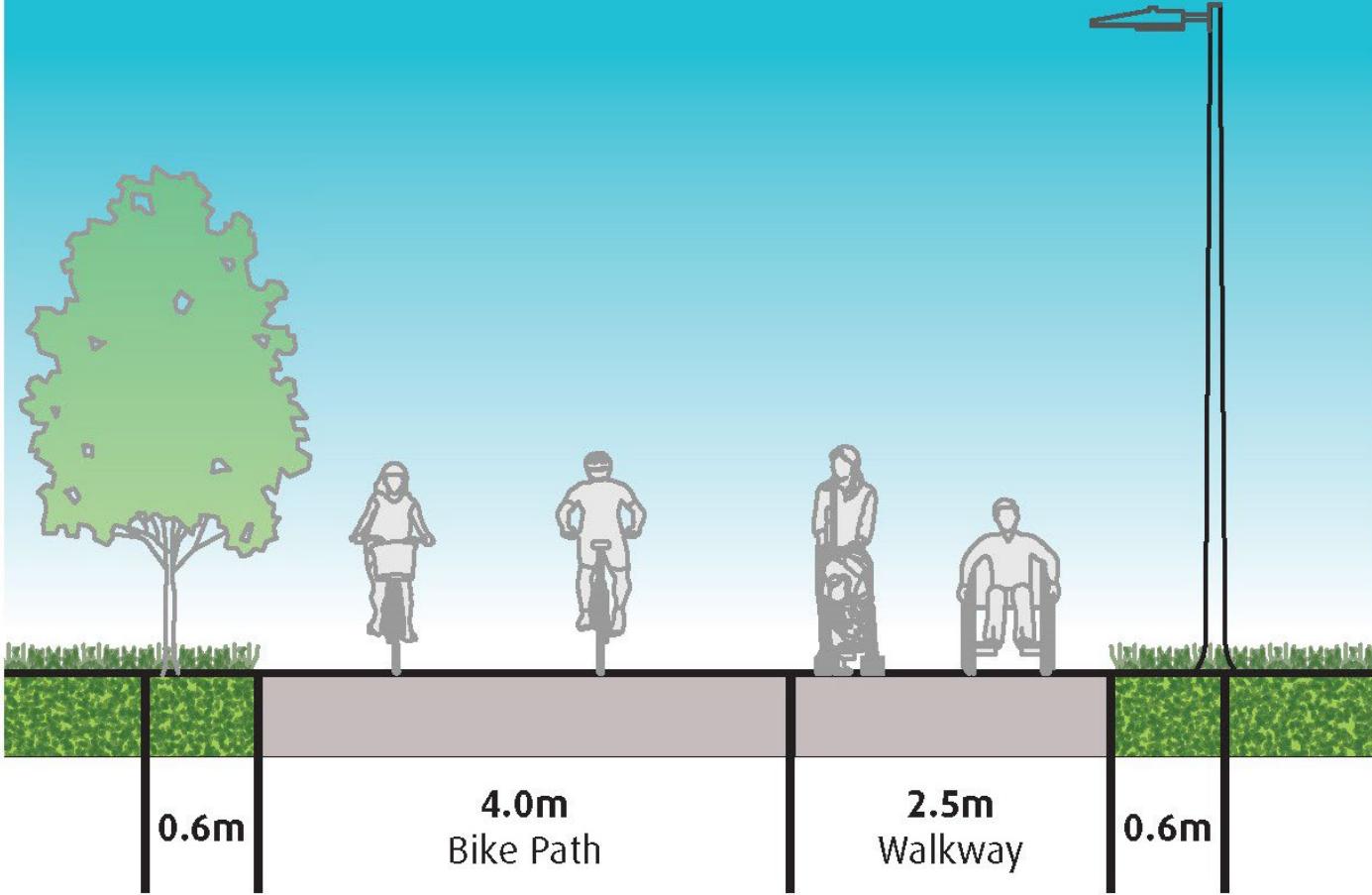
Tales of the Trails

The Galloping Goose and Lochside regional trails cover more than 80 kilometres on former historic railway lines. The Galloping Goose was named for the gas-powered passenger car that carried passengers twice daily between Victoria and Sooke during the 1920's.

Today, the 55 kilometre trail connects Victoria to Kapoor Point, the Trans Canada Trail, provincial and territorial parks, the Galloping Goose Trail, a 29-km multi-use path from Victoria to Swartz Bay.



Separated Use Pathway







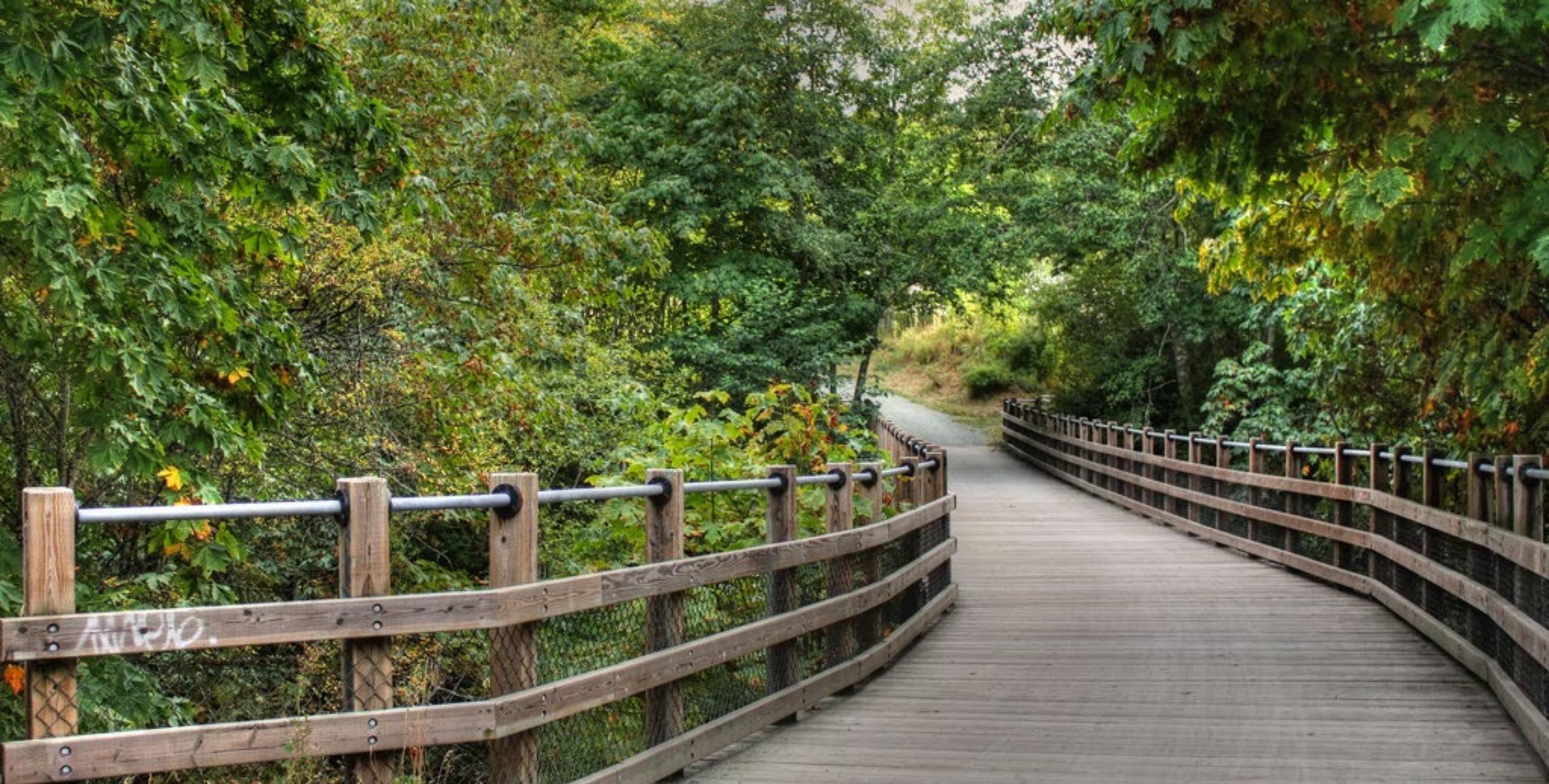
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Thank you!



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Capital Regional District



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**REPORT TO TRANSPORTATION COMMITTEE
MEETING OF WEDNESDAY, MAY 17, 2023**

SUBJECT **Regional Trails Closure Policy**

ISSUE SUMMARY

To provide information about the Capital Regional District (CRD) Regional Trails Closure Policy.

BACKGROUND

The Capital Regional District (CRD) operates and maintains a 100-kilometre multi-use regional trail network comprised of the Galloping Goose Regional Trail, the Lochside Regional Trail and the E&N Rail Trail – Humpback Connector that connects key destinations throughout the region. On occasion, temporary closures on regional trails are required to address operational issues, conduct regular maintenance or to complete infrastructure improvements and repairs. Trail closures can impede the use of regional trails as active transportation corridors if the trail is closed to public use and if safe detour routes are not provided.

At the November 10, 2021 CRD Board meeting, staff were directed to report back on current endeavors and the advisability of developing a new construction and detour policy for regional trails. On August 10, 2022, the Board received a report outlining information on the current process CRD staff follow for managing regional trail closures. It was determined that a consistent approach to regional trail closures and detour routes should be discussed with the Transportation Working Group (TWG) prior to the development of a CRD policy.

The TWG discussed regional trail closure considerations at recent meetings in 2022 and 2023. Based on the feedback received from TWG members, CRD staff developed the Regional Trails Closure Policy (the policy) – see Appendix A. The policy strives for a consistent approach to regional trail closures that minimizes disruptions to trail users through communications messaging, traffic management protocols, and by either implementing a partial closure that still allows trail users to traverse safely through a work site or by providing a detour route that meets the region's All Ages and Abilities (AAA) facility standard.

IMPLICATIONS

Intergovernmental Implications

The Transportation Working Group was formed in 2021 to advance advocacy and implementation towards regional transportation priorities. Membership is comprised of transportation planners and engineers from municipal, provincial and regional government agencies.

The policy applies to the CRD and any agency, municipality, company or individual that requests to close a CRD regional trail to public use. The CRD is responsible for administering the policy, issuing park use permits under Capital Regional District Park Regulation Bylaw No. 1, 2018 (Bylaw No. 4225), and authorizing the closure of regional trails that are under the CRD's jurisdiction. The Province of BC and municipalities are responsible for reviewing and authorizing

the use of their property (roadways, sidewalks, etc.) for detour routes associated with a regional trail closure, as described in a traffic management plan submitted to those agencies.

The policy is developed, approved, implemented and maintained by the CRD's Regional Parks division at the discretion of the General Manager, Parks & Environmental Services Department, in accordance with the CRD's Policy Management Framework.

Financial Implications

Costs associated with planning and implementing regional trail closures, such as traffic management plans, communications material, site security, liability and insurance, are the responsibility of the agency, company or individual that requested the closing of a regional trail. Costs will vary depending on the duration of the closure and the feasibility of achieving a suitable detour route that meets the desired AAA facility standard. Estimated total costs for staff time and materials related to temporary closures of regional trails are between \$1,000 and \$3,000 for unpaved/rural sections and between \$2,000 and \$5,000 for paved/urban sections. Total estimated cost of an engineered traffic management plan is between \$3,000 and \$5,000. Additional on-site traffic management costs are estimated between \$500 and \$1,000 per day.

Service Delivery Implications

The policy strives to achieve partial trail closures during a work activity where the trail is kept open to public use during peak hours but travel may be impacted due to a narrowed trail surface, alternating traffic, intermittent delays or full trail closures at off-peak hours. Where a partial closure cannot be achieved, full trail closures are permitted, provided that a traffic management plan is provided that identifies a detour route that meets the region's AAA facility standard to accommodate safe travel for pedestrians and cyclists. A lesser facility standard may be accepted in rural communities within the region and in circumstances where an AAA facility cannot be reasonably provided. Staff will continue to work with the Transportation Working Group to implement and monitor the success of this policy.

Alignment with Board & Corporate Priorities

Transportation is a priority for the 2023-2026 CRD Board term. This policy aligns with 2023-2026 Corporate Plan initiative *4b-1 Work with the Transportation Working Group to implement the regional multi-modal transportation network*, of which the regional trails are a part. This policy also aligns with the 2023-2026 Board Priorities initiative *1a Improve regional connectivity and safety across transportation modes*. The policy strives for a consistent approach to regional trail closures that minimizes service disruptions and achieves safe operating standards for active transportation.

CONCLUSION

The CRD Board directed staff to report on current approaches to regional trail closures and on the advisability of developing a policy. The Transportation Working Group has met over 2022 and 2023 to develop the CRD Regional Trails Closure Policy. The policy strives to keep trails open to public use during a work activity, whenever possible, and with communications messaging and traffic management protocols in place. When keeping the trail open during a work activity is not possible, the policy requires that a traffic management plan specify a detour route that meets the

AAA facility standard and is approved by the agency responsible for the infrastructure that comprises the detour route. Staff will continue to work with the Transportation Working Group to implement and monitor the success of this policy.

RECOMMENDATION

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

Submitted by:	Jeff Leahy, RPF, Senior Manager, Regional Parks
Concurrence:	Larisa Hutcheson, P.Eng., General Manager, Parks & Environmental Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: CRD Regional Trails Closure Policy

CAPITAL REGIONAL DISTRICT

POLICY

Policy Type	Division		
Section	Regional Parks & Trails		
Title	CRD REGIONAL TRAILS CLOSURE POLICY		
Approved Date	May 3, 2023 (by GM)	Policy Number	PARK-01
Last Amended			
Policy Owner	Parks & Environmental Services		

1. POLICY:

To establish a consistent approach to managing Capital Regional District (CRD) Regional Trail Closures (off-road sections). Wherever possible, proponents shall strive for a Partial Closure of a CRD Regional Trail. Where Partial Closures are not possible, an All Ages and Abilities (AAA) Facility detour route shall be sought.

2. PURPOSE:

The CRD authorizes closures of Regional Trails (off-road sections). Closures of Regional Trails occur from time to time to address operational issues, regular maintenance, infrastructure repair and construction. Regional Trail closures may be requested by organizations, individuals or their agents, including but not limited to, First Nations, the Province of British Columbia (BC), municipalities, utility companies, private landowners, or the CRD. A policy is required to establish a consistent approach to Regional Trail Closures that minimizes disruption to trail users.

3. SCOPE:

This policy applies to situations where Closure of a Regional Trail (off-road sections) is requested by an agency, agent, individual, or the CRD.

The CRD is responsible for administering this policy and authorizing the Closure of Regional Trails that are under the CRD's jurisdiction.

The CRD is exempt from obtaining a Permit but will otherwise adhere to this policy.

The CRD may impose conditions as part of issuance of a Permit.

First Nations, the Province of BC, municipalities and private landowners are responsible for reviewing and authorizing the use of their property (roadways, sidewalks, etc.) for detours routes associated with a Regional Trail Closure.

Permit applicants are responsible for: preparing permit applications; developing and implementing Traffic Management Plans, site maps and plans; developing Communications Plans and delivering communications material (subject to CRD review); site security; liability and insurance; all costs associated with the Permit application and the Regional Trail Closure.

4. DEFINITIONS:

AAA Facility – a cycling and pedestrian facility for all ages and abilities based on current conditions of traffic speeds and volumes as outlined in Schedule A.

Closure (Full) – means a Regional Trail and ancillary amenities, or portion thereof, is closed to public use.

Closure (Partial) – means a Regional Trail and ancillary amenities, or portion thereof, remains open to public use during peak hours (7-9 am and 3-5 pm) but travel may be impacted by a narrowed trail surface/corridor, alternating traffic, intermittent delays, or temporary closures during off-peak hours (9 am-3 pm and 5 pm-9 am).

Communications Plan – means a document outlining what, when and how information will be distributed to the public about a Regional Trail Closure.

Permit – means a park use permit issued by the CRD under Capital Regional District Park Regulation Bylaw No. 1, 2018, Bylaw No. 4225.

Regional Trail – means a trail managed and operated by the CRD for public use; includes off-road sections of the Galloping Goose, Lochside, E&N, and Mayne Island regional trails; does not include on-road sections such as at road crossing intersections and on Lochside Drive.

Traffic Management Plan – means a traffic control plan that addresses cyclist and pedestrian safety and accessibility and that includes strategies designed to safely navigate trail users around a work activity.

5. PROCEDURE:

1. A request for a Regional Trail Closure (Partial or Full) shall be made in writing to the CRD in the form of a Permit application.
2. Permit applications shall include the following:
 - A description of the proposed work activity, location, type and duration of Closure, site office requirements, and any other applicable information.
 - A description of measures taken to reduce the impact of the Closure on trail visitors, including:
 - isolating the worksite;
 - scheduling the work activity outside of peak visitation times;
 - reducing the duration of work activity; and
 - minimizing disruption to trail users.
 - A Communications Plan that provides information to trail users about the Closure, including measures to provide at least 7 days advance notice of a Partial Closure or 14 days advance notice of a Full Closure and ongoing messaging for the duration of the Closure.

- For Partial Closures: A Traffic Management Plan outlining measures for safely navigating trail users through a Partial Closure site, including but not limited to on-site traffic management, fencing and signage.
- For Full Closures: A Traffic Management Plan that includes an AAA Facility detour route for safely navigating trail users around a Closure site, where feasible and agreed upon with the local government/authority in the following municipalities:
 - Victoria
 - Saanich
 - Central Saanich
 - North Saanich
 - Sidney
 - Esquimalt
 - View Royal
 - Colwood
 - Langford.
- For Full Closures: A Traffic Management Plan outlining measures, including but not limited to on-site traffic management, fencing and signage for safely navigating trail users around a Full Closure site, where feasible and agreed upon with the local government/authority in the follow areas:
 - Southern Gulf Islands Electoral Area
 - Juan de Fuca Electoral Area
 - Sooke
 - Metchosin.

3. Traffic Management Plans that include detour routes onto infrastructure outside of the CRD Regional Trail will be reviewed and approved by the applicable municipal and/or provincial authority(ies) affected. In circumstances where an AAA Facility detour cannot be reasonably provided, the CRD and the applicable authority(ies) may determine a lesser standard is acceptable provided that cyclist and pedestrian safety and accessibility measures are addressed.
4. In extraordinary circumstances where a Closure of a Regional Trail is unplanned, such as for emergency infrastructure repair, all efforts will be made to adhere to this policy as soon as possible.
5. Any organization, individual or their agent proposing a Closure of a Regional Trail that results in use of municipal, provincial or private lands or infrastructure must comply with all applicable legislation and obtain required approvals from that authority related to any applicable permits, bylaws, liability and insurance requirements.
6. Approval of a Traffic Management Plan that includes proposed detour routes and use of infrastructure outside of the Regional Trail, and/or any on-street occupancy and/or curb use associated with the works, is required from the applicable authority.

6. SCHEDULE: A – All Ages and Ability (AAA) Facility Criteria

7. **AMENDMENT(S):**

Adoption Date	Description:
Enter date	

8. **REVIEW(S):**

Review Date	Description:
May 2026	

SCHEDULE A
ALL AGES AND ABILITY FACILITY CRITERIA

All Ages and Abilities (AAA) Cycling Facilities provide a comfortable and safe cycling experience for people of AAA, including families with children, seniors and new riders. The criteria for an AAA Cycling Facility are based on the BC Active Transportation Design Guide* and definitions used by TransLink and the City of Vancouver. For the purposes of this policy, the CRD will consider AAA Cycling Facilities to be those that meet the criteria set out in Table 1. AAA Cycling Facility Criteria.

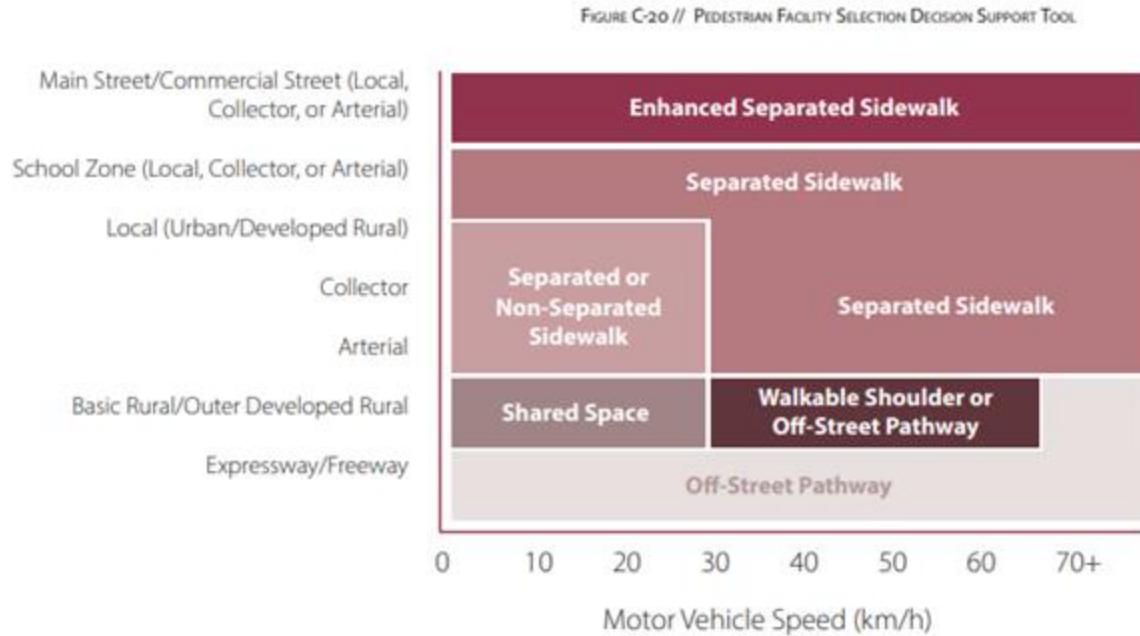
Table 1: AAA Cycling Facility Criteria

Target Motor Vehicle Speed	Target Max Motor Vehicle Volume	Motor Vehicle Lanes	Key Operational Consideration	All Ages & Abilities Bicycle Facility
Any	Any	Any	Any of the following: High curbside activity, frequent buses, motor vehicle congestion or turning conflicts	Protected Bike Lane (one-way or two-way)
≤ 30 kph	≤ 1000 per day	No centerline or single lane one-way	< 50 motor vehicles per hour in peak direction at peak hour	Neighbourhood Bikeway or Advisory Bike Lane (traffic calmed shared route)
Highways, natural / linear corridors, or geographic edge conditions with limited conflict			High pedestrian volume	Separated Multi-Use Path (off-street)
			Low pedestrian volume	Shared Multi-Use Path (off-street)

*The BC Active Transportation Design Guide provides information about facility design considerations and applications. As noted in the design guide, all designs should be applied with sound professional judgement that considers the unique context of each project.

AAA Pedestrian Facilities also provide a comfortable and safe experience for people of AAA, including families with children and seniors. The criteria for an AAA Pedestrian Facility are based on the BC Active Transportation Design Guide.* For the purposes of this policy, the CRD will consider AAA Pedestrian Facilities to be those that meet the criteria set out in Table 2: AAA Pedestrian Facility Criteria and incorporate accessible design guidance from CSA B651.

Table 2: AAA Pedestrian Facility Criteria



* The BC Active Transportation Design Guide provides information about facility design considerations and applications. As noted in the design guide, all designs should be applied with sound professional judgement that considers the unique context of each project.

**REPORT TO TRANSPORTATION COMMITTEE
MEETING OF WEDNESDAY, MAY 17, 2023**

SUBJECT **Transportation Governance Concepts and Next Steps**

ISSUE SUMMARY

To seek approval to engage local governments, electoral areas, and agency partners on transportation governance solutions.

BACKGROUND

Transportation governance is a priority for the 2023-2026 CRD Board term.

On April 12, 2023, the CRD Board directed staff to initiate the planning required to develop transportation governance options. The CRD Board provided this direction based on the Regional Transportation Plan (RTP), regional transportation priorities and lessons learned from previous attempts to create regionalized transportation governance.

This report:

- Summarizes the rationale for the transportation governance work;
- Presents a comparative scan of regional transportation authorities (Appendix A);
- Identifies governance concepts to generate feedback on the scope and scale of possible change; and,
- Proposes an engagement approach to seek that feedback.

Rationale for Governance Change and Opportunity Statements

Regional transportation authorities make transportation service delivery easier for municipalities. The end goal for any authority is to improve mobility. Authorities recognize that residents live and work across local government boundaries, want to move easily across those boundaries and expect affordable, efficient, safe, and reliable transportation options regardless of who delivers the service. Many authorities operate at arm's length from government.

As identified in the 2014 CRD Transportation Service Feasibility Study, successful authorities share three governance features: they are multi-modal, they ensure the right people make the right decisions at the right time, and they have a secure source of funding to meet service levels.

Since 2014, the CRD, local governments and partner agencies have focused on the first component. Examples include preparing local transportation and transit plans that align to the Regional Transportation Plan and identifying regional transportation priorities. The next step in terms of governance is changes to funding and decision-making.

Comparative Scan of Transportation Authorities

The CRD shares the same transportation goals as other metropolitan regions: ease congestion during peak travel times, reduce emissions, and support higher rates of walking, cycling and transit use. Staff researched three transportation authorities in comparable regions—Translink in Metro Vancouver, Auckland Transport in Auckland, New Zealand, and Halifax Region Municipality. See Appendix A for the jurisdictional scan.

Each transportation authority combines governance features in different ways. Key findings:

- Another level of government created the transportation authorities to improve mobility.
- It takes time to become fully operational. Each transportation authority required over a decade for planning and consolidation to take full effect. Changes occurred incrementally.
- Success is built from a solid base. Transportation authorities that make decisions over things like mode integration, land use, and funding have greater control over mobility outcomes.

Transportation Governance Concepts for the Capital Region

A full transportation authority would mean the CRD, or another regional body, makes funding and service-level decisions related to multiple transportation modes. This is different from where we are today. Multiple partners are responsible for service delivery. The CRD defines the regional multi-modal network, provides data and reporting and operates a regional trail. To implement a transportation authority, local governments and partner agencies would need to agree on:

- Modes subject to the authority (i.e., trails, roads, active travel, and transit)
- Desired service level for each mode
- Funding model
- Reporting relationship between the new authority and existing decision-makers

Given the scale of change associated with a full transportation authority, local governments and partner agencies need to provide input on transportation governance solutions that work. The Board needs this input to decide what can reasonably be achieved this term and deliver on partner needs.

Staff have prepared updated transportation governance concepts to seek this input, based on findings from the jurisdictional scan and recommendations from the 2014 CRD Transportation Service Feasibility Study. The concepts propose increasing levels of regional authority from one level to the next. All modes (trails, active transportation, transit, roads) can be scoped into each level, should the responsible partner wish to participate.

Level 1: New CRD service. This level consolidates CRD transportation functions to enable service level changes. Specifically, it would bring the planning function for the regional multi-modal transportation network (Regional and Strategic Planning (RSP)) and the active transportation function of regional trails (Regional Parks) together.

Level 2: Expand CRD authority. This level introduces new authorities so the CRD can raise and administer funds and offer behaviour change programming. In this level, the CRD gains new tools to help attract more funding to the region. The CRD would also offer more services related to transportation demand management. While these authorities would be new to the CRD, they are based on authorities permitted to regional districts by legislation.

Level 3: New authority. This level creates a new Capital Region Transportation Authority, meaning there are fewer organizations that make decisions about service levels and investment in the network. This change would link service levels to mobility performance and planned growth.

The changes in levels one and two can be delivered by the CRD in the short term, based on authorities permitted by legislation. A new CRD service establishment bylaw would be required to do so. The changes in level three require new provincial legislation and a CRD service establishment bylaw.

Engagement Approach

The proposed engagement approach is to build consensus on the scope and scale of governance change needed to achieve regional mobility objectives. Engagement will be with partners who deliver transportation services in the region: 13 local governments, three electoral areas, BC Transit, the Victoria Regional Transit Commission (VRTC), the Ministry of Transportation and Infrastructure (MoTI), the Ministry of Municipal Affairs, BC Ferries and the Victoria Airport Authority. First Nations governments will be informed of the process. Moving forward, the approach can be scoped to allow nations to participate should they be interested.

Using the governance concepts as a guide, organizations will be asked:

1. What are the current regional transportation challenges from the organization's perspective?
2. Why is transportation governance change important from the organization's perspective? From a regional perspective?
3. What does regional governance over transportation look like in the long term? In the short term? (i.e., what modes are included, who makes decisions and about what, who pays?).
4. What level of governance change does the organization support?

The Board will use the input to determine the level of change it can achieve over its term, and pending support, define regional aspirations over the long term.

Next Steps

- **Engagement (summer 2023):** Engage 13 local governments, three electoral areas and partner agencies to seek input. Analyse level of consensus for change.
- **Analysis and reporting (fall 2023):** Report back to the Board on findings and seek Board direction on the level of governance change to pursue this Board term.
- **Initiate service feasibility (fall 2023):** Pending direction, develop a service feasibility study to deliver on the change that is needed.

Depending on the results of this planning phase, the rest of the Board term would be used to:

- **Service establishment (2024):** Pending direction, undertake service approval and enact a service establishment bylaw.
- **Implementation and delivery (2025-ongoing):** Implement the required internal changes to increase service levels and prove the feasibility of the service, measured against performance indicators.
- **Business case for a transportation authority (2025-2026):** Pending level of support, begin a business case for a new authority, which could include transit integration.
- **Delivery (2026):** Advocate for legislative change and implement a new authority, as directed.

ALTERNATIVES

Alternative 1

The Transportation Committee recommends to the Capital Regional District Board:
That the CRD Board seek input from local governments, electoral areas, the province, and relevant partner agencies according to the engagement approach as presented.

Alternative 2

That the Transportation Governance Concepts and Next Steps staff report be referred back to staff for additional information.

IMPLICATIONS

Environmental & Climate Implications

The CRD Board has declared a climate emergency. Road based transportation is responsible for 46% of all greenhouse gas (GHG) emissions in the region. Solutions that shift mode share—get more people taking transit, walking, and cycling—are needed to reduce GHG emissions and address traffic congestion.

Intergovernmental Implications

For transportation governance to change, the CRD Board, electoral areas, local governments, and partner agencies need to agree on who will make decisions about what. The province will only consider enacting a new transportation authority if there is consensus for change. The best way to develop consensus is to build solutions collaboratively.

The proposed engagement approach will seek input from partners who deliver transportation services in the region. At this time, First Nations governments will be informed of the process. Moving forward, options will be scoped to allow nations to participate should they be interested.

Focusing on what the CRD Board and local governments control is most likely to deliver concrete change this Board term. For example, the ability to administer funds to incent priorities could make a meaningful difference to the region. In the long term, governance changes will require trade-offs. Different decision-making and funding authorities will be needed to advance mobility, climate action and liveability objectives.

Regional Growth Strategy Implications

The Regional Growth Strategy (RGS) sets the vision for the future of the region. The RGS calls for the implementation of the regional multi-modal transportation network. The RGS also sets the regional mode share target that 42% of trips be taken by walking, cycling and transit (mode share target is now 45% given subsequent changes to the transit target by BC Transit).

Financial Implications

The RSP core budget can absorb costs associated with the proposed engagement through to the end of 2023. Any costs associated with service feasibility in 2024 would require additional funding. Pending direction, these costs would be developed and presented for approval through the annual service and financial planning processes.

Service Delivery Implications

The project timelines assume that engagement will begin in late June–early July. Any delays will affect the ability to report back to the Board for a decision on next steps by the end of 2023.

RSP will need to defer incremental improvements to the transportation data collection program to free up capacity to deliver the engagement process in 2023.

The deferral would also allow the data collection program to be informed by new service needs. Pending direction, additional capacity would be needed in 2024 to establish a new service. RSP would increase its capacity by procuring consultancy services.

Alignment with Board & Corporate Priorities

A CRD Board priority for the 2023–2026 term is to present options for changes in governance for transportation in the region, including the Electoral Areas. Initiative 4a-1 in the CRD Corporate Plan is to scope and develop governance options, including consideration of a new transportation authority. Engaging local governments and partner agencies on the proposed governance concepts is critical to advancing this priority.

Alignment with Existing Plans & Strategies

Several CRD plans and strategies have informed the proposed governance concepts and engagement process, including the RGS, the Regional Transportation Plan, the Interim Regional Parks and Strategic Plan, the Regional Trails Management Plan, the CRD Climate Action Strategy, and the new intergovernmental relations policy.

CONCLUSION

Transportation governance is a priority for the 2023-2026 CRD Board term. Given the scale of change needed to achieve transportation and climate action objectives, the Board needs input from local governments, electoral areas, and agency partners on governance solutions that work. The proposed engagement approach is to build consensus on the scope and scale of governance change needed to achieve regional mobility objectives.

RECOMMENDATION

The Transportation Committee recommends to the Capital Regional District Board:
That the CRD Board seek input from local governments, electoral areas, the province, and relevant partner agencies according to the engagement approach as presented.

Submitted by:	Emily Sinclair, MCIP, RPP, Senior Manager, Regional and Strategic Planning
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Transportation Governance Jurisdictional Scan

Transportation Governance Jurisdictional Scan

Executive Summary

The Capital Regional District (CRD) shares many of the same transportation goals as other metropolitan regions: Ease congestion during peak travel times, reduce emissions, and support higher rates of walking, cycling and transit use. Similarly, the CRD is not the only jurisdiction trying to integrate different transportation modes into a single planning framework, ensure the right authorities are in place and find dedicated funding to meet service levels.

Staff researched three comparable regional examples of different transportation governance models (see *Figure 1, on page 19, illustrating the comparison*). This scan shows that each jurisdiction has combined the three dimensions of transportation governance in different ways.

- 1. TransLink (Metro Vancouver):** TransLink is a regional transportation authority for a region of 2.75 million residents and 21 local governments. TransLink plans Metro Vancouver's Major Road Network and operates the public transit system. The governance structure enables a single planning framework for the major road network and relies on funding to incentivize coordinated decision-making. TransLink has made significant investments to build out and operate a robust public transit system that moves people efficiently.

Decision-making about transportation matters remains complex as TransLink, local governments, the Metro Vancouver Regional District and Ministry of Transportation and Infrastructure (MoTI) continue to have authorities over discrete functions. Further, TransLink relies on provincial and federal investments for its major infrastructure projects and does not have stable, sufficient funding to continue its build out of the planned network.

- 2. Auckland Transport (Auckland, New Zealand):** Auckland Transport (AT) is a transportation authority for a region of 1.67 million residents. AT plans, delivers, operates and maintains a multi-modal transportation system of arterial and local roads, footpaths, cycleways, public transit, ferry wharves and two airfields. The governance structure is an amalgamation of eight local and regional councils into one organization.

Amalgamation enabled rapid investment and build-out of public transit by consolidating planning and service delivery authorities in one organization. Local and federal government have authority over funding decisions. AT relies on Auckland Council, the New Zealand Transport Agency (NZTA), and central government for the funding it needs to deliver service level expectations. This creates a governance model that enables the local government to set multi-modal goals but restricts AT's ability to implement those aspirations.

- 3. Halifax Regional Municipality (Halifax, Nova Scotia):** Halifax Regional Municipality (HRM) is the local government for 480,000 residents. HRM plans and delivers integrated mobility services through departments responsible for public transit, roads, active transportation, and land use. The governance structure is an amalgamation of four local governments and the elimination of the regional government.

HRM has integrated its transportation and land use functions. The same organization makes planning and operational decisions, guided by an Integrated Mobility Plan. Dedicated funding is provided through a variety of streams, including a transit tax for urban areas within a transit service boundary. Additionally, Halifax Harbour Bridges uses tolls for the operation and maintenance of their two large bridges. Through this governance model, HRM has a comparatively high degree of authority over decisions related to multi-modal mobility, land use and funding. As this governance model has proven successful, a new provincial Crown Corporation has been established to develop a Regional Transportation Plan. The core partners include local, provincial, and federal government, along with harbour bridges, port authority and airport.

Key Findings

- Another level of government created the transportation authorities to improve mobility. The CRD, local governments and agency partners need to provide a strong business case for change, particularly in relation to transit, to be in a position to ask the province for new powers.
- It takes time to become fully operational. Each transportation authority required over a decade for planning and consolidation to take full effect. This confirms a core assumption from a 2014 CRD Transportation Service Feasibility Study: implementation will happen incrementally, likely following a phased approach.
- Success is built from a solid base. Transportation authorities that make decisions over things like mode integration, land use, and funding have greater control over mobility outcomes.

Introduction

CRD Regional and Strategic Planning staff undertook a jurisdictional scan to examine examples of different transportation governance structures for Board consideration. This report presents three transportation authorities with different combinations of the three dimensions of transportation governance: TransLink, Auckland Transport (AT), and Halifax Regional Municipality (HRM). Each have undergone transformative change and represent archetypes of different governance models. Outlined for each authority are an introduction, history, timeline, key decision makers, key plans, desired outcomes, authority and jurisdiction over various modes, and funding structure. The scan concludes with a discussion of key findings as they pertain to the dimensions of transportation governance.

Dimensions of Transportation Governance

The 2014 Transportation Service Feasibility Study recommendations were based on three dimensions of transportation governance:

- 1. Level of multi-modal integration:** Full multi-modal integration is when the transportation planning framework – the policy, budget, and service level decisions – extends beyond a single mode and considers a range of transportation, climate action and land use impacts in decision making.
- 2. Decision-making authority:** Unfettered decision-making is when the right authorities are in place to make decisions that will lead to a desired outcome. Strategic planning decisions, often made by a policy board or elected council, relate to transportation policy, budget, and service levels. Operational decisions, often made by technical experts, relate to service delivery, maintenance, and investment in new assets.
- 3. Funding:** Building out the regional multi-modal network and changing travel behaviour costs money. Dedicated, stable funding sources are needed to make capital and program investments to increase service levels, and to operate and maintain existing service levels.

Applicability to the CRD Context

Capital Regional District (CRD)

The capital region is home to about 440,000 residents (2022) in 13 municipalities and three electoral areas, overseen by the CRD with limited authority and responsibilities. Transportation governance is split by mode. Decision making power is such that local governments have jurisdiction over regional and local roads and land use, BC Transit has jurisdiction over the regional transit network, the Province has jurisdiction over highways, and the CRD has jurisdiction over regional and multi-use trails.

TransLink

TransLink is the most logical comparator as the CRD and Metro Vancouver are working under the same legislative environment within British Columbia (BC). As well, both contain several local governments. The capital region is the second largest region with significant economic activity in the province, next to Metro Vancouver. However, the population, jobs, density, and economy are significantly larger in Metro Vancouver and thus justify a more robust public transit system.

Auckland Transport (AT)

AT was chosen to show a model where a senior government exerts a high degree of decision-making authority. AT is federally legislated and comprises a single municipality (amalgamated). The Auckland region underwent significant transportation governance changes in 2010. New Zealand is a commonwealth country and is not an American or European example, which are more challenging comparisons due to significant legislative and built form differences. Like the capital region, Auckland is on an island, was previously composed of several municipalities, and is working to solve affordability issues and accommodate growth.

Halifax Regional Municipality (HRM)

Halifax and Victoria are both capital cities that are the home ports of the Royal Canadian Navy's Atlantic and Pacific fleets, and they both include suburban and rural communities in addition to their urban cores. The Halifax Region has a very similar population size to the capital region, including a similar proportion of the population aged 65+ (HRM 20%; CRD 23.4%). However, HRM is about twice the size in land area.

The Halifax region has undergone significant change in transportation governance over the past 27-years since amalgamating. Faced with regional transportation challenges, growing community interest in creative, cost-effective ways to reduce vehicle-dependency and a revised Regional Plan, Halifax Regional Council identified the need to re-examine transportation policies and priorities. HRM has since brought together transportation and land use planning and focused on multi-modal integration. HRM also has similar mode-shift goals as the CRD.

Vancouver–TransLink

Introduction

TransLink is a regional transportation authority created by the *South Coast British Columbia Transportation Authority (SCBCTA) Act*. TransLink plans and manages Metro Vancouver's transportation system with their partners, stakeholders, and operating companies. Metro Vancouver is a federation of 21 local governments, one electoral area, and one Treaty First Nation and home to about 2.75 million residents.

Their governance structure includes a Board of Directors and Mayors' Council on Regional Transportation. The Board has the responsibility and mandate to make decisions in the interest of TransLink within the limits established by the Act.

TransLink has four areas of strategies, plans, and guidelines: Area Transport Planning, Transit and Transportation Planning, Managing the Transit Network, and transit-oriented communities. TransLink's operating budget is approximately \$2 billion (2023).

History

Transportation was the top issue in the Lower Mainland in the 1990s, as skyrocketing rates of car ownership and gridlock made for difficult commutes, inefficient goods movement, and significant emissions. The proposed solution was a regional response. Thus, the Province created TransLink in 1999 and transferred ownership of some roads that were previously provincial

highways to local governments, while designating TransLink as responsible for providing operation and maintenance funding for the major road network.

TransLink has three key features:

- 1) It is responsible for creating a transportation network to move people and goods efficiently and building capacity to handle population growth and meet the municipalities' economic plans.
- 2) It is responsible for both the major road network and the public transit system – typically the responsibility of separate city departments.
- 3) It has the means to raise its own funds through taxation (a key change from BC Transit).

TransLink is essentially the same entity that was created by the historic agreement of 1999, but its scale is now much larger. Originally, TransLink's operating budget was about \$358 million, and it managed about \$100 million in small capital projects. By 2008, TransLink's operating budget was \$992 million, with about \$4 billion in major capital projects. In 2023, the operating budget is about \$2 billion and capital projects approved and underway total \$4.8 billion.

Timeline

1993	Idea is born; Greater Vancouver Regional District (GVRD) and the Province release Transport 2021 Plan, proposing integration of land use and transportation planning and major service improvements.
1996	BC government transfers responsibility for secondary highways to local governments.
1997	Negotiators sign and submit a final agreement to create the Greater Vancouver Transportation Authority (GVTA/TransLink).
1998	<i>GVTA Act</i> approved by Provincial legislature.
1999	TransLink is launched.
2001	Province announces additional gas tax funding if TransLink can match revenues from local sources.
2002	Vancouver and Whistler win 2010 Olympic and Paralympic Winter Games.
2003	Board and GVRD approve \$4 billion, 10-year Regional Transportation Plan.
2004	Province puts \$370 million toward Canada line.
2005	New deal returns \$307 million in gas tax funding to TransLink.
2007	Independent review of TransLink's governance completed. Transport 2040 process initiated; new <i>Act</i> transforms GVTA into <i>South Coast British Columbia Transportation Authority Act</i> , expanding mandate.
2022	Transport 2050: Metro Vancouver's 30-year Regional Transportation Plan approved.
2023	Metro 2050: Regional Growth Strategy (RGS).

Key Decision Makers

The key decision makers for transportation in the region are TransLink, local governments, Metro Vancouver, and the BC MoTI. Each have authorities over different transportation functions.

At TransLink, the Mayors' Council on Regional Transportation provides political direction, and the Board of Directors provides operational direction.

Key Plans

TransLink's Regional Transportation Plan, Transport 2050, guides work long-term. TransLink is also mandated to prepare 10-year Priorities (Investment Plans) at least once every three years. Once approved by the Mayors' Council, it becomes the strategic plan. Metro Vancouver's RGS, Metro 2050, provides the land use framework for regional transportation planning. Local governments' Official Community Plans (OCP) and Transportation Plans also guide local transportation decisions that can have a regional impact.

Desired Outcomes

Transport 2050 aims to create a future that provides everyone with access to transportation choices that are convenient, reliable, affordable, safe, comfortable, and carbon free. The aim is to have walking, cycling, and transit be competitive choices that account for at least half of all passenger trips by 2050.

Authority and Jurisdiction

TransLink gets the authority to make decisions through provincial legislation in the SCBCTA Act. The approach to transportation governance and decision making is complex, collaborative, and requires close coordination between TransLink and local governments, Metro Vancouver, and the BC MoTI.

Regional Trails and Multi-use Trails

Local governments own multi-use paths; TransLink builds and maintains them. TransLink also finances multi-use paths and thereby has influence over the build out. There is no legislation regarding TransLink's oversight of multi-use paths, rather it comes from Investment Plans that include visions for cycling and walking infrastructure and language specific to multimodal aspects. TransLink creates program and implementation plans based on consultation with local governments, but ultimately TransLink has the authority to decide how the money is spent. TransLink helps local governments see the regional picture and are deliberate about where infrastructure is to be built out and what type of infrastructure is needed to generate mode shift.

Metro Vancouver completes a Regional Greenways Plan, which is the region's shared vision for a network of recreational multi-use paths for cycling and walking that connects residents to large parks, protected natural areas, and communities to support regional livability.

Regional and Local Roads

TransLink and local governments co-manage the Major Road Network (MRN). Local governments are the owners, while TransLink is responsible for providing operation and

maintenance funding. TransLink has oversight and authority through legislation, which states that local governments cannot make changes to the major road network without consulting TransLink. As per the *SCBCTA Act* Part 2 on Major Road Network 21-1 and 21-1.1, any action that would reduce the capacity of any part of the MRN to move people requires TransLink's approval. Local roads are not part of the MRN and are the sole responsibility of local governments.

Regional Transit Network

If the Regional Transit network is on the MRN, then TransLink has jurisdiction. If the route is on provincial highways or MoTI right-of-way (ROW), then the Province has jurisdiction. The Province also contributes capital and operating funds. Local governments maintain local roads and bus shelters, contribute to transit route planning initiatives, and contribute property taxes to transit operations. Metro Vancouver provides a stronger alignment of planned locations for growth with transit investments through a new tool called "Major Transit Growth Corridors".

Land Use – Corridors and Nodes

Local governments are responsible for land use planning. Metro Vancouver works closely with member jurisdictions, TransLink, other orders of government and stakeholders to coordinate complex land use and transportation decisions. The RGS supports the integration of transportation and land use planning. Metro Vancouver considers TransLink an "affected local government" and their support for the RGS is required. The TransLink Board reviews, comments, and signs off on any amendments advanced for engagement. TransLink and Metro Vancouver could be consulted on OCPs or asked to review local government documents. The Province sets policy guidelines and approvals of development applications adjacent to highway corridors.

Provincial Highways

MoTI is responsible for the planning, operation, and maintenance of provincial highways.

A note on First Nations Relations

Tsawwassen has a seat at the Mayors' Council, but TransLink is in the early stage of an initiative to work better with other regional Indigenous Nations. TransLink is currently staffing up to better understand their role and exploring the potential of providing transit to reserves.

Funding Structure

The four main funding sources supporting current operations include transit revenues, property taxes, motor fuel taxes, and parking rights tax. However, TransLink also has several funding sources, including hydro levy, government transfers and interest income, for example.

There are also several capital funding and partner government contributions, including investing in Canada infrastructure program, permanent transit fund, zero emissions transit fund, Canada community-building fund, provincial contribution to the 10-year vision, development cost charges, real estate development and investment fund distributions, revolving land fund.

Auckland–Auckland Transport

Introduction

AT is a council-controlled organisation that combines the transport expertise and function of eight former local and regional councils and the Auckland Regional Transport Authority. Auckland is home to 1.67 million residents.

Established in 2010, AT keeps Auckland moving by planning, delivering, operating, and maintaining Auckland's transport system to meet the needs of current and future Aucklanders. AT's operating budget is \$1.180 billion (2023/2024).

AT is the regional guardian of \$21.1 billion of publicly owned assets. This includes 7,638 km of arterial and local roads, 7,431 km of footpaths, 348 km of cycleways, a growing fleet of electric trains, rail and busway stations, bus shelters, ferry wharves and two airfields on the Gulf Islands.

History

The establishment of AT in 2010 marked the first time in history that all local transport functions and operations for the city have come under one organization. National agencies continue to manage the highways and interregional rail networks. Prior to 2010, public transit service delivery was undermined by a fragmented governance model. Public transit operations were vested in a comparatively small and poorly resourced regional provider, while road activities and asset ownership remained with geographically smaller but more strongly resourced "territorial local authorities". A user-based funding model tended to reproduce existing transit patterns and did not support large scale investments in city-shaping infrastructure. A review in the 2000's found that Auckland was not accommodating growth properly, and so the Central Government called for reform to create a super city.

Timeline

2003	Rail brought back into the heart of the city for the first time in 70+ years (\$204 million).
2004	Auckland Regional Transport Authority formed as the central co-coordinating agency for mixed-mode transport in Auckland. Disestablished in 2010, it had in six years delivered a 97% increase in rail usage and a 10.2% increase in bus patronage.
2010	Amalgamation of Auckland's local authorities (eight former local and regional councils and the Auckland Regional Transport Authority).
2010	Auckland Council is formed, with AT as the council-controlled organisation delivering all of Auckland's land transport needs, excluding motorways.
2011	Construcciones y Auxiliar de Ferrocarriles (CAF) wins contract to supply 57 three-car electric trains to be owned by AT (\$500 million).
2012	Public transport trips exceed 70 million for the first time since tram lines were pulled out. Auckland Manukau Eastern Transport Initiative project under way with new

bridges constructed, and first new line in over 80 years. *AT HOP* integrated ticketing system introduced on trains and ferries.

2013	First train is officially unveiled in Auckland.
2014	Use of <i>AT HOP</i> cards tops 200,000 in March as the smartcard is rolled out on the bus network. Rail patronage reaches 11 million.

Key Decision Makers

The key transportation decision makers in the region are AT, Auckland Council, the NZTA, and central government.

Auckland Council sets the overall spatial direction for the region and identifies funding for approximately half of the transport activities in a 10-year Regional Long-Term Plan. Central government provides the other half share of funding via a combination of the NZTA and direct government contribution. AT prioritises investment across the local road and public transport networks via the Regional Land Transport Plan.

Key Plans

Key Plans for transport in the region include:

- AT's Regional Land Transport Plan, Regional Public Transport Plan, Future Connect, Roads and Streets Framework, Network Operating Plan, Asset Management Plan.
- Auckland Council's Auckland Plan 2050 (Auckland's 30-year development strategy, and Long-Term Plan (budget).
- Central Government's Government Policy Statement on Land Transport, National Land Transport Programme, and AT Alignment Project.

Desired Outcomes

The Regional Land Transport Plan aims to:

- Provide and accelerate better travel choices for Aucklanders,
- Improve the resilience and sustainability of the transport system and significantly reduce the greenhouse gas (GHG) emissions it generates,
- Better connect people, places, goods, and services,
- Make Auckland's transport system safe by eliminating harm to people,
- Enable and support Auckland's growth through a focus on intensification in brownfield areas and with some managed expansion into emerging greenfield areas,
- Provide sound management of transport assets,
- Provide local board programs, technology, and organizational improvement initiatives.

The plan is focused on completing transport projects that are already underway, investing in new electric trains and infrastructure to meet the expected patronage boost, and maintain momentum

on core priorities like reducing the number of people being killed or seriously injured on the transportation network.

Authority and Jurisdiction

AT is responsible for all the region's transport services, from roads and footpaths, to cycling, parking and public transport. All decisions relating to the operation of AT are made by or under the authority of the Board in accordance with the *Local Government Act*. However, AT is heavily dependent on government funding, so while the statutory responsibility is there, the funding is not as simple.

Regional and Multi-use Trails

AT owns and operates cycling and walking within the road corridor. Auckland Council provides cycling and walking facilities within parks and other off road community facilities and partially funds AT Projects. The NZTA provides cycleways and walkways within the state highway network and partially funds AT projects.

Regional and Local Roads

AT owns, manages, operates, maintains, renews, plans, and improves the local road network on behalf of its 100 percent shareholder, the Auckland Council. Council partially funds AT's road activities in partnership with the NZTA. The NZTA works with local government to ensure that the state highway network links seamlessly into the local road network. NZTA also partially funds AT projects and activities, including maintenance and renewals. Central government sets legislation that determines the powers and responsibilities of Road Controlling Authorities like AT. This can include setting maximum parking fines or administrative charges.

Regional Transit Network

AT plans, manages, contracts, and controls public transit services, plans, and delivers improvements on the local road network and above track on the rail network. AT also prepares the Auckland Regional Land Transport Plan. Auckland Council is a part-funder, with NZTA, of AT's public transport services and improvement projects. NZTA plans, funds, and delivers transit improvement projects on state highway corridors. Central Government provides Crown funding for some rapid transit projects. Central government can also fund and deliver projects on its own, via special purpose entities.

Land Use – Corridors and Nodes

Regional and territorial councils, like Auckland Council, are responsible for the development of spatial plans and approving new developments. Discretion over approval has been limited by central government intervention to allow greater development rights for townhouse type development in particular. AT prepares the Auckland Regional Land Transport Plan. AT also works with developers to mitigate effects of development on the network and ensure new streets and other facilities vested to AT meet design standards. The NZTA seeks to influence land use decisions to support transport outcomes and minimize negative impacts on state highway operations. Meanwhile, central government enacts planning legislation, but can use policy

statements to set specific rules for urban Councils. Central government also acts as a developer through the social housing arm.

Provincial Highways

NZTA is the controlling authority for the state highway network. They are responsible for the planning, design, building, maintenance, funding, and operation of 11,000 km of state highways. AT is a very interested party and coordinates with NZTA on some project delivery. In theory, AT has a project prioritization role through the Regional Land Transport Plan. Auckland Council provides coordination from a land use perspective. Central Government sets broad strategic outcomes and can provide additional “top-up” funding to accelerate some state highway projects.

Funding Structure

AT gets roughly 50% of its funding from Auckland Council and 40% from NZTA and then find remaining 10% piecemeal.

Halifax – Halifax Regional Municipality

Introduction

HRM was formed in 1996 with the amalgamation of four former local governments and the elimination of the Halifax Regional Authority. The growing region is now home to more than 480,000 residents, with a 4.4% population growth in 2022.

HRM’s operating budget for transit is about \$135 million (2023/2024).

History

Even post-amalgamation, various transportation functions were performed by various departments. The approach was disparate and not strategic, with each group having their own plans (i.e., transit plan, bike plan, parking strategy). For example, the traffic department was focused on moving vehicle traffic, the transit department ran buses, the finance department maintained on street parking, and the pavement management group maintained the roads and would occasionally build sidewalks with a small budget.

In 2017, a multidisciplinary group with representatives from HRM’s Transportation and Public Works, Halifax Transit, Planning and Development, as well as Nova Scotia Public Health developed the Integrated Mobility Plan (IMP). It is a joint plan stemming from municipal policy direction on public transit and transportation and land use and growth centers contained within the Regional Plan, including the following:

- Implement a sustainable transportation strategy by providing a choice of integrated and connected travel options emphasizing public and community-based transit, active transportation, carpooling and other viable alternatives to the single occupant vehicle;
- Promote land settlement patterns and urban design approaches that support fiscally and environmentally sustainable transportation modes;

- Forecast the municipality's need for mobility and provide service and infrastructure to meet this demand while influencing choice towards transportation sustainability; and
- Design complete streets for all ages, abilities, and travel options.

The IMP identifies corridors of interest for active transportation and transit, and staff from various departments now work together to make strategic multimodal transportation and land use decisions. For example, the parking department is responsible for parking, but are not simply interested in making money (as they were in the past); they are invested in the role of parking in transportation demand management. Transportation planning is now embedded in land use planning, with the aim of ensuring that growth centers are in spaces more conducive to active transportation and transit.

Timeline

1996	Amalgamation of four municipalities and one regional authority (April).
2006	Regional Plan (updated 2014 and 2021); Active Transportation Plan.
2010	Transportation Demand Management Functional Plan.
2014	Making Connections Active Transportation Priorities Plan.
2015	Council directs staff to develop a strategic plan aimed at increasing the modal split of sustainable forms of transportation as per the Regional Plan which integrates both land use and transportation planning and includes comparative costing analysis of road and ROW infrastructure upgrades and widenings as compared to other forms of transportation.
2016	Moving Forward Together (Transit) Plan approved by Council.
2017	Integrated Mobility Plan approved by Council.
2019	Centre Plan (Land Use Plan emphasizing infill in Regional Centre) approved by Council (updated 2021).
2020	Rapid Transit Strategy published.
2021	Bill 61 passes for creation of the Joint Regional Transportation Agency (JRTA) in November. Launch of Cogswell District Redevelopment Project: the largest city-building project in HRM's history.
2022	JRTA formed.

Key Decision Makers

The key transportation decision makers in the region are Halifax Regional Municipality, the Nova Scotia Department of Public Works, and a newly forming JRTA. Halifax Transit is a department within Halifax Regional Municipality. Halifax Harbour Bridges, the Port of Halifax, and the Halifax International Airport Authority also make decisions about their respective modes and assets.

Regional Council is the main decision-making body for the Halifax Regional Municipality, providing strategic planning decisions related policy, budget, and service levels. There are also two committees that report to Regional Council on transportation matters: the Active

Transportation Advisory Committee, which includes citizen volunteers, and Transportation Standing Committee, composed of municipal councillors.

Key Plans

The primary municipal planning strategy (i.e., official community plan) for HRM is the Regional Plan. There are also several secondary municipal plans intended to support zoning and land use controls, the most up to date of which being the Centre Plan.

The Regional Plan's municipal policy direction on public transit and transportation and land use and growth centres and the Regional Council's 2017 endorsement of a new vision for moving people and goods in the region led to the creation of the IMP. The IMP serves as a guide for investment in active transportation, transit, transportation demand management, goods movement, and the roadway network in Halifax. The Plan's vision is to create connected, healthy, affordable, and sustainable travel options, which is supported by four principles: Complete communities, moving people, managing congestion, and integrating solutions.

Desired Outcomes

The desired outcomes of HRM's transportation system are to have at least 30% of trips made by transit and active transportation and no more than 70% of trips made by private vehicle by 2031.

Authority and Jurisdiction

HRM has jurisdiction over regional and local roads, regional and multi-use trails, land use corridors and nodes, and the regional transit network. The Province has jurisdiction over provincial highways.

Regional and Multi-use Trails

HRM is responsible for the planning, design, operation, maintenance, regulation, and funding of the regional trail system and the Transit Department supports the integration of active modes with transit. Several trails are on an old railway right of way and as such, HRM has a letter of permission from the Province's Department of Natural Resources (DNR) to use the space while DNR is a passive player.

Regional and Local Roads

HRM currently owns 41% of roads in the region and is responsible for maintaining and redesigning the regional and local road network as council sees fit. The Province owns and is responsible for maintaining the bulk of roads in rural areas, including 90% of roads outside the urban service boundary. The Province owns all roads in the former Halifax County constructed prior to the 1996 amalgamation, while HRM owns all local roads constructed after 1996.

Regional Transit Network

HRM has developed a Rapid Transit Strategy that builds on the vision of the IMP and is focused on the urban areas of Halifax. It establishes a vision for a Bus Rapid Transit (BRT) Network with four fixed-route lines, proposes a new ferry service with three routes, and sets a direction for land use policy to align with Rapid Transit. There are extensive transit priority measures proposed to

ensure that the BRT can reliably compete with driving, 60% of the network is proposed to have transit priority lines. There are also three Regional Express Routes that are commuter focused with service tied to peak direction.

HRM also maintains the bus shelters, roads, and sidewalks and contributes property taxes to transit operations. Funding for the transit network comes through user fees and taxes in the transit boundary-taxpayers who live within 1 km of a bus stop pay a transit tax, establishing a transit service boundary. Bus shelters are maintained through advertisement revenue. Transportation funding from the Federal government comes through the province to local governments.

Land Use – Corridors and Nodes

Multiple community plans that allowed widely dispersed development were supplemented by an overarching Regional Plan that aims to focus growth on strategic centers, though that is not totally apparent yet because old bylaws are still in place. In 2017, the Centre Plan further emphasized the benefits of maximizing growth in the urban core. HRM is currently embarking on a suburban plan to identify growth nodes that replace community plans. The plan is to hinge growth nodes within 800 metres of transit stops. The Province provides policy guidelines and approvals of development applications adjacent to highway corridors.

Provincial Highways

The Nova Scotia Department of Public Works is responsible for all 100-series highways as well as other highways called trunks and routes.

Funding Structure

The municipal budget is responsible for sidewalks, regional trails, active transportation. This includes transit tax and user fees, gas tax, and other Investing in Canada Infrastructure Program (ICIP) funding streams. Parking revenue goes to general revenue, and it funds various department budgets. The harbour bridges are tolled and operated by Halifax Harbour Bridges, a crown corporation of the Province. The Province controls funding from the Federal government.

Joint Regional Transportation Agency

A need was identified for a forum to bring multiple jurisdictions and agencies together for holistic planning and as a central place to make regional transportation decisions. As such, *Bill 61*, an act to establish a JRTA, was passed in November 2021.

The JRTA is a crown corporation, and the Ministry of Public Works is the sole shareholder of the Agency. The Advisory Board of the JRTA is comprised of executive leaders of all partner organizations, not elected officials, with the aim of having vertical integration of the agencies. It brings together municipal, Provincial, and Federal government and covers the region extending beyond HRM to include 14 other local governments. The JRTA's purpose is to provide a coordinated strategic vision for the regional transportation system, to integrate transportation land use decision making and guide transportation infrastructure investments, and to maximize the impact of strategic investments. The plan will look at arterial and collector road levels and

corridors where growth is desired. It is not an authority, but rather focused on positive collaboration, bringing people together from a transportation and land use perspective.

Per *Bill 61*, the objects of the Agency are to conduct:

- (a) a comprehensive review of all modes of transportation associated with the Municipality including roads, bridges, highways, ferries, transit, rail, airports, and ports for the purpose of creating a master transportation plan to ensure
 - (i) a regional approach to transportation consistent with the Municipality's growth and development, and
 - (ii) the safe, efficient, and co-ordinated movement of people and goods; and
- (b) any other activities deemed necessary to fulfill the intent of this *Act* in accordance with the regulations.

Discussion and Key Findings

With each authority examined, it has taken a significant amount of time to yield results and there have been clear catalysts affecting their access to stable funding, ability to plan through an integrated multi-modal lens, and capacity to take action integrating land use with transportation.

TransLink

Funding

- TransLink has committed funding through property and gas taxes toward operational costs but does not have a stable source of funding sufficient for capital projects to continue its build out of the planned network.

Level of multi-modal integration

- Language specific to the multimodal aspect of transportation is found in Board approved investment plans.
- TransLink has access to significant funding and determines how it is spent, giving them power to influence local government infrastructure investment decisions. For example, TransLink has been very deliberate about where and how the cycling network is to be built out. They set the parameters so that funding is only available for class one, All Ages and Abilities (AAA) facilities.

Degree of organizational control (formality/authority)

- Significant collaboration and relationship building with Provincial, regional, and local governments is required in this complex model.
- There is language in Section four of the *SCBCTA Act* that allows TransLink to be involved in coordinated land use/growth management, though some of the language is quite broad and implies that TransLink must comment on every OCP amendment. It could be stronger if it

were more tailored so that TransLink is mandated to comment on municipal transportation plans.

- TransLink staff have mandates in the *SCBCTA Act* about working with local governments, but it is not mirrored in the *Local Government Act*. This means that it is left up to relationship building, which can be quite powerful, but does not always work as well as if it were mandated.
- There could be benefit to a stronger working relationship between TransLink and Metro Vancouver for land use planning and climate planning.

Other

- TransLink also conducts a vast amount of research plays an educational role in providing the regional context of how infrastructure connects through the local governments. This function is key to the behaviour change that is needed to shift transportation modes.

Auckland Transport

Funding

- Despite governance structure and statutory responsibility, it is funding that ends up being critical in how decisions are made and who makes them.
- There is a gap between aspirations and the political reality of implementing measures. The cost of operating public transit is significant and building out the network takes time.

Level of multi-modal integration

- As an agency, AT has a decent amount of control over the way the network is managed and implemented. For example, AT can significantly change bus network toward transfer-based without having to coordinate multiple local governments. They can plan and coordinate. The foundation is there, but the struggle is that AT is reliant on multiple other agencies for funding.

Degree of organizational control (formality/authority)

- Before 2010, there wasn't agreement between Auckland Council, who wanted public transport, and Central government, building motorways. The organizations have since developed a non-statutory mechanism to get some degree of certainty and agreement.
- AT is in a challenging position, unable to deliver on Council's aspirational goals. It is difficult for AT to provide a clear stream of advice to Council in this governance model.

Halifax Regional Municipality

Funding

- A transit service boundary allows HRM to collect transit tax for households within 1 km of a conventional or community transit stop. This funds the conventional transit operations of

Halifax Transit and is a way of ensuring that the vast rural population does not pay for a service they do not receive.

- Halifax Harbour Bridges (HHB) is a commission of the Provincial government that collects revenue through tolls to pay for the ongoing maintenance and operations of the Macdonald and MacKay bridges. HHB receives no funding from the government.
- The Province essentially offers as subsidy on roads as they own and maintain roads in the former Halifax County constructed prior to amalgamation, 100-series highways, and the bulk of roads in rural areas.

Level of multi-modal integration

- The high degree of integrated transportation planning among different modes with regional goals minimizes inefficiencies.

Degree of organizational control (formality/authority)

- Integration of land use and transportation is important. As HRM has authority over both land use and transportation decisions, planning tools can be directly applied to benefit design and reduce costs related to transit and active transportation services (e.g., upzoning, by-right development, form-based codes, site plan approvals processes, design guidelines, mandatory inclusion of ground floor commercial along transit spines, exclusion of some uses from some areas).
- A key finding is that doing proper corridor planning first is crucial, identifying areas with potential for active transportation and transit and ensuring that land use policies are in alignment with desired growth nodes.
- Consider land use planning approvals in the context of transit service needs and ridership.

Other

- It's important to be transparent and specific to Council and the public about the trade offs that are required to reach Council's goals. For example, to improve transit safety and bike networks, it is often necessary to remove on-street parking and/or accept greater degrees of traffic delay.
- The Halifax Regional Municipality is a single entity governed by the Halifax Regional Council of 16 councillors and an elected mayor. The capital region contains 13 municipalities each with their own mayor and council, and three electoral areas, overseen by the CRD with limited authority and responsibilities.

Conclusion

Information from this jurisdictional scan will be used to prepare updated governance concepts for the CRD and to serve as a reference in future work including business case development for a preferred governance option.

All three authorities were created by another level of government to improve mobility.

Through amalgamation, Auckland and HRM reduced the number of decision makers to consolidate disparate authorities into one organization. TransLink was created to provide Metro Vancouver with a new level of decision-making and coordinate among multiple jurisdictions. It is incumbent on the CRD, its member local governments and various agency partners to articulate a strong business case for the need to make changes to existing authorities particularly in relation to transit.

All three took time to become fully operational.

Each jurisdiction required over a decade for the planning and consolidation of authorities to take full effect. This confirms the core assumption from the feasibility study: That implementation needs to happen in steps, with each step proving feasible before moving to the next. This suggests that while the creation of a full authority in the region may take time, there is an opportunity through this Board term for the CRD and local governments to make changes within their control to prove viability for further regionalization of transportation governance.

Success is built from a solid base.

The jurisdictions that rely on other organizations for decision-making about discrete transportation functions, land use, and funding have less control towards achieving their mobility objectives. In considering the scope and scale of desired governance change, the CRD and all its partners need to weigh up the trade-offs associated with decision-making authorities and funding sources in relation to objectives for mobility, climate action and liveability.

		CRD	TransLink	Auckland Transport	HALIFAX
Governance features		<ul style="list-style-type: none"> No mechanism to collectively address impact of decisions Compete for funding Focus on planning alignment 	<ul style="list-style-type: none"> Funding incentivizes collective decisions on regional network Limited funding source Complex decision-making 	<ul style="list-style-type: none"> Single local government Local and Federal government control of funding Does not set mobility outcomes; deliver on local government goals 	<ul style="list-style-type: none"> Single local government Significant control over mobility outcomes Product of amalgamation
	Regional and Multi-Use Trails	CRD	TransLink	Auckland Transport	HRM
	Regional and Local Roads	Local Governments	TransLink	Local Governments	HRM
	Regional Transit Network	BC Transit	TransLink	Local Governments	Province
	Land Use – Corridors & Nodes	Local Governments	Local Governments	Local Government	HRM
	Provincial Highways	Province	Province	Federal Government	Province

Figure 1: Comparison of transportation governance authorities



Exploring a Transportation Authority

Agenda

1. Background & rationale
2. Building a system that works
3. Building consensus for change
4. Next steps





Background & rationale

Background



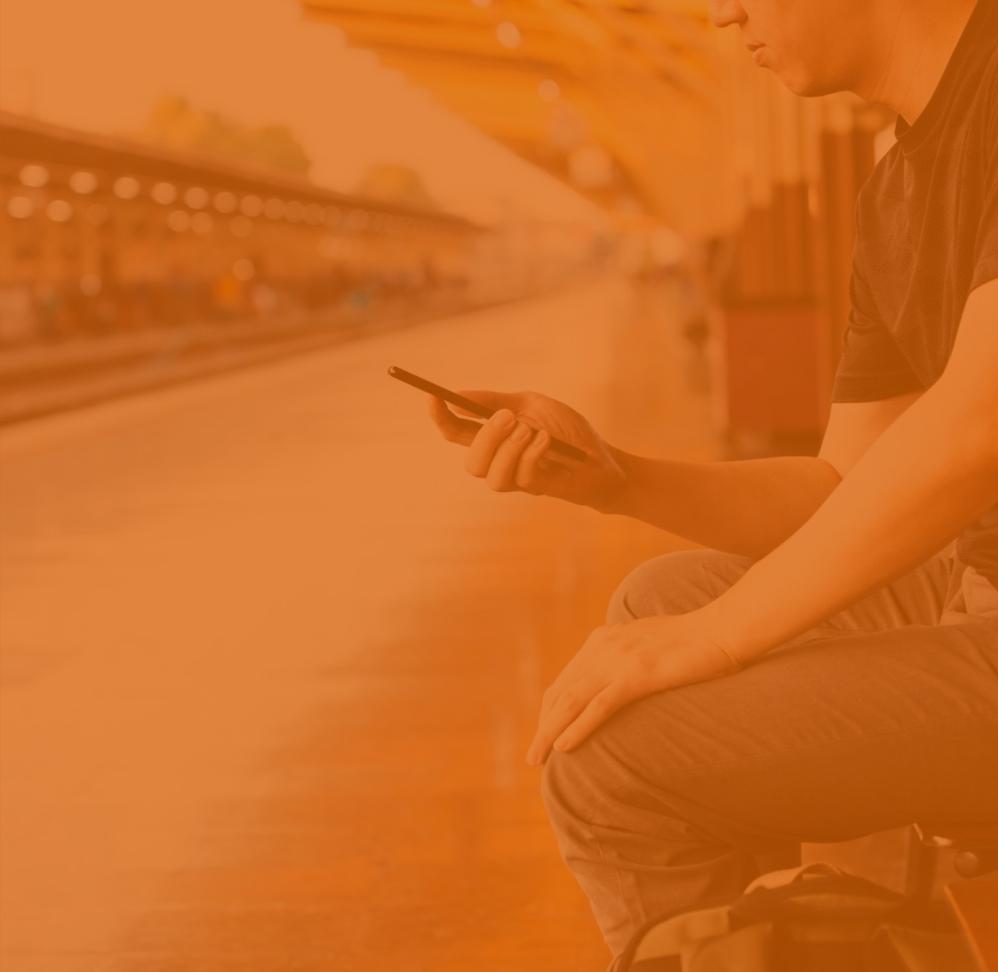
Why are we here?

Transportation is a priority for the Capital Regional District (CRD) Board and residents. We need to build changes that work, with support from local governments, electoral areas and partner agencies.



Regional Transportation Goals

1. Ease congestion
2. Support higher rates of walking, cycling and transit use
3. Reduce emissions



What are the benefits of an authority?

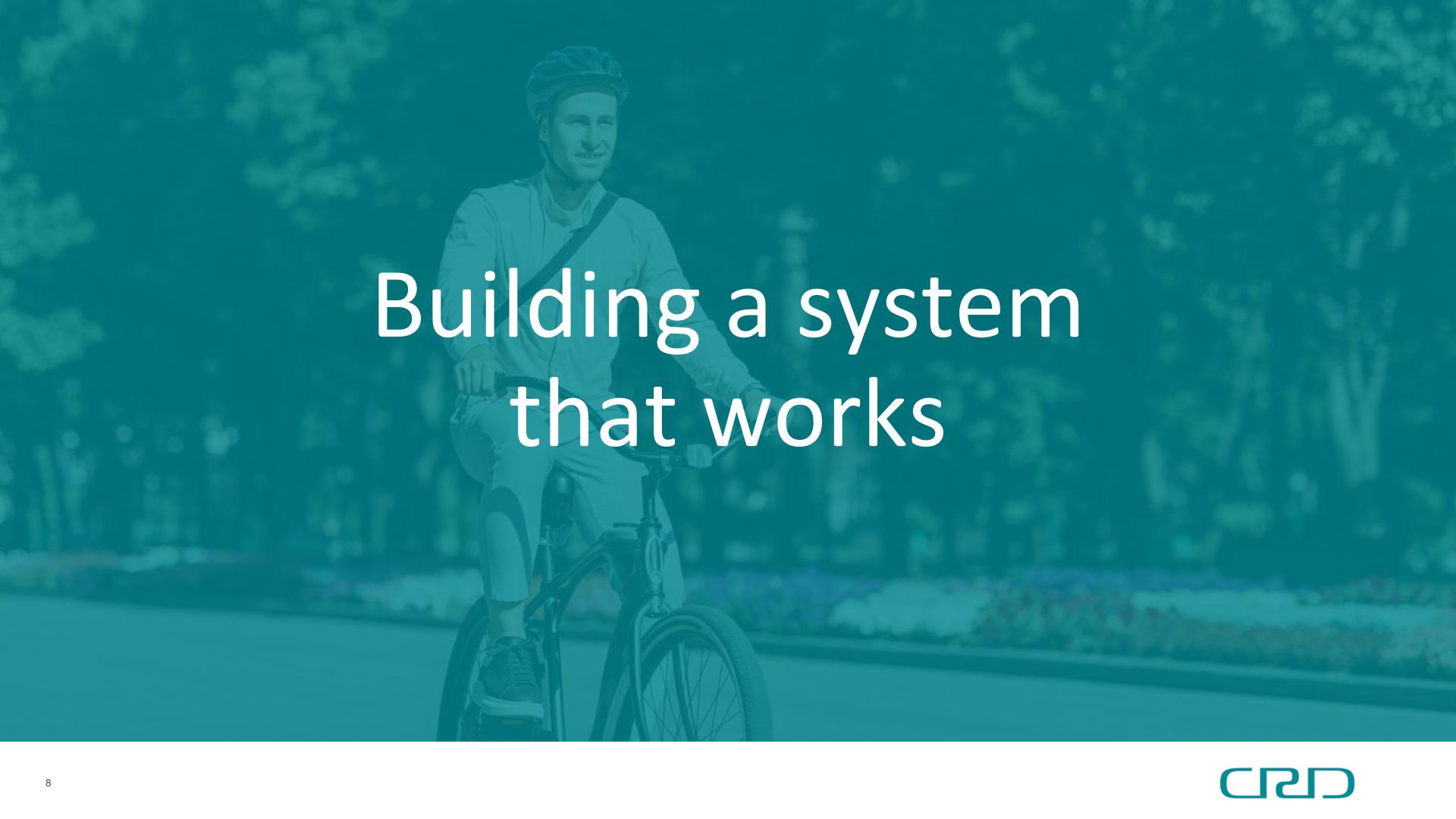
A transportation authority makes service delivery easier for municipalities.

Authorities can make business cases for dedicated funding and ensure the right people are making the right decisions.

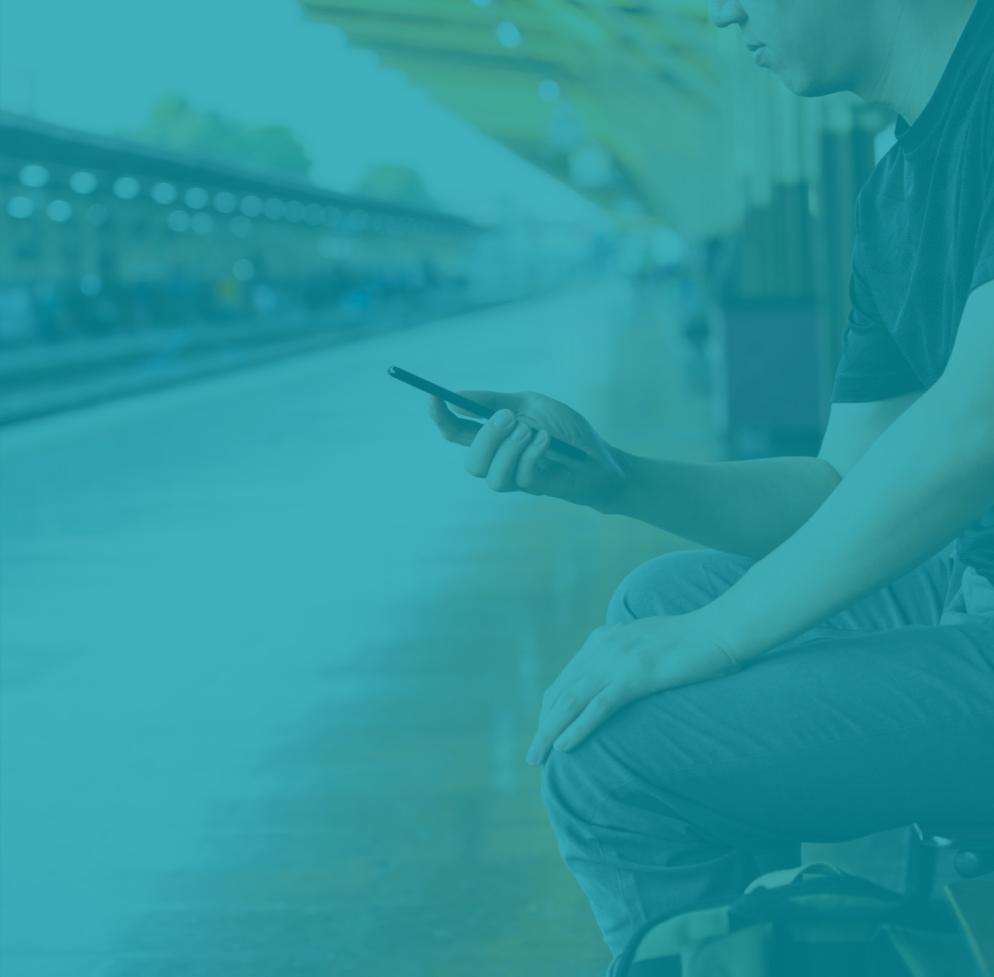


Delivering on resident expectations

- Live and work across local government boundaries
- Move easily across the region
- Expect quality service, regardless of who delivers the service

A man wearing a cycling helmet and a light-colored jacket is sitting on a bicycle. He is smiling and looking towards the camera. The background is a blurred outdoor setting with greenery and a path.

Building a system that works



What have others done?

Components to an authority:

- Multi-modal
- Able to make decisions
- Stable funding

Translink, Auckland Transport and Halifax Regional Municipality all operate different transportation authorities.

Comparing different authorities

	CRD	TransLink	Auckland Transport	Halifax Regional Municipality (HRM)
Governance features	<p> CRD</p> <ul style="list-style-type: none"> • No mechanism to collectively address impact of decisions • Compete for funding • Focus on planning alignment 	<p> TransLink</p> <ul style="list-style-type: none"> • Funding incentivizes collective decisions on regional network • Limited funding source • Complex decision-making 	<p> Auckland Transport</p> <ul style="list-style-type: none"> • Single local government • Local and Federal government control of funding • Does not set mobility outcomes; deliver on local government goals 	<p> Halifax Regional Municipality (HRM)</p> <ul style="list-style-type: none"> • Single local government • Significant control over mobility outcomes • Product of amalgamation
 Regional and Multi-Use Trails	CRD	TransLink	Auckland Transport	HRM
 Regional and Local Roads	Local Governments	TransLink	Local Governments	HRM
 Regional Transit Network	BC Transit	TransLink	Local Governments	Province
 Land Use – Corridors & Nodes	Local Governments	Local Governments	Local Government	HRM
 Provincial Highways	Province	Province	Federal Government	Province



What can we learn?

- Need strong business case for change
- Takes time to become fully operational – deliver in increments
- Build from a solid base – get the tools needed to control mobility



Building Consensus for Change

Getting to a full authority



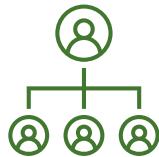
What will it take?

A full transportation authority makes funding and service-level decisions related to multiple transportation modes.

Agreement needed on:

- Modes
- Service levels
- Funding model
- Reporting relationship

How far do we want to go?



Level 1: New CRD Service

CRD brings its transportation functions into one department to enable service-level changes



Level 2: Expand CRD Authority

CRD gets new funding and service authorities to change travel behaviour and build out the multi-modal network

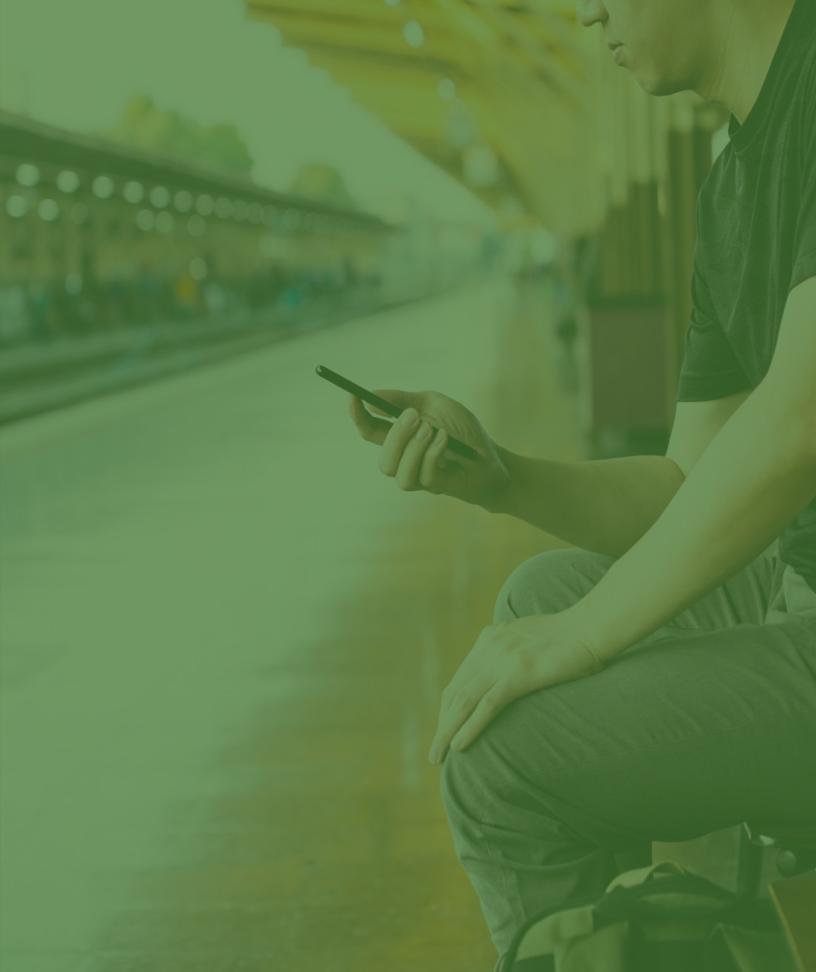


Level 3: New authority

One organization makes decisions about service levels and investment in the network

Scope of change the CRD could deliver, based on authorities permitted by legislation.

Scope of change that requires new legislative authorities.

A photograph of a person sitting on a bench, looking at a smartphone. The person is wearing a dark t-shirt and light-colored pants. The background is blurred, showing what appears to be a train station platform with a train and some buildings.

Engagement Approach

Engagement will test the scope and scale of governance change.

We want to hear about:

- Regional transportation challenges
- Why governance change is important
- What change looks like in the long term. In the short term.
- Level of supportable change

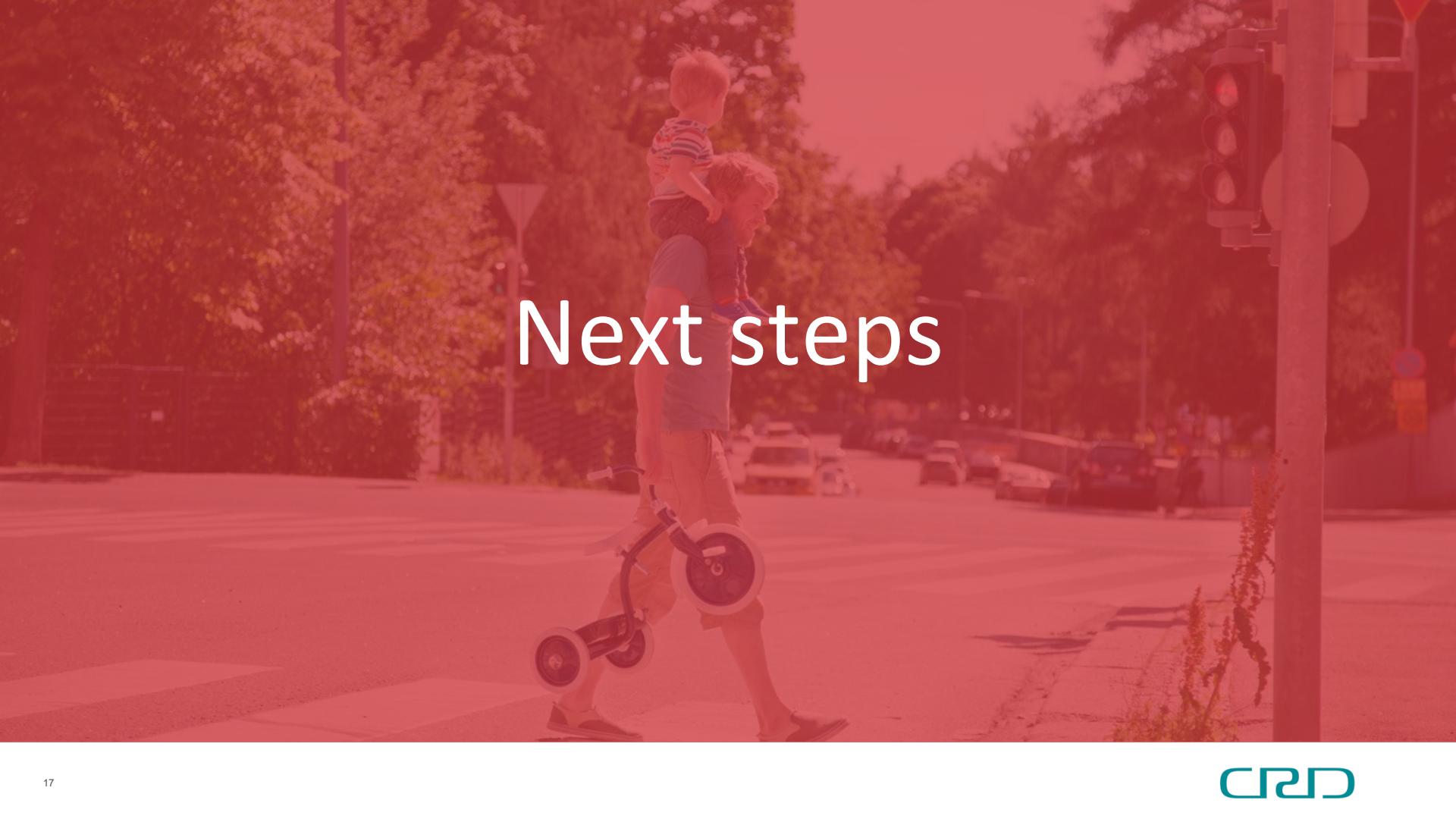
We will use the governance concepts to guide this input.



Who will be engaged

- 13 municipalities
- Three electoral areas
- Agency partners (e.g., BC Transit, Victoria Regional Transit Commission, BC Ferries, Airport Authority, Province)

First Nations governments can be included should they wish.

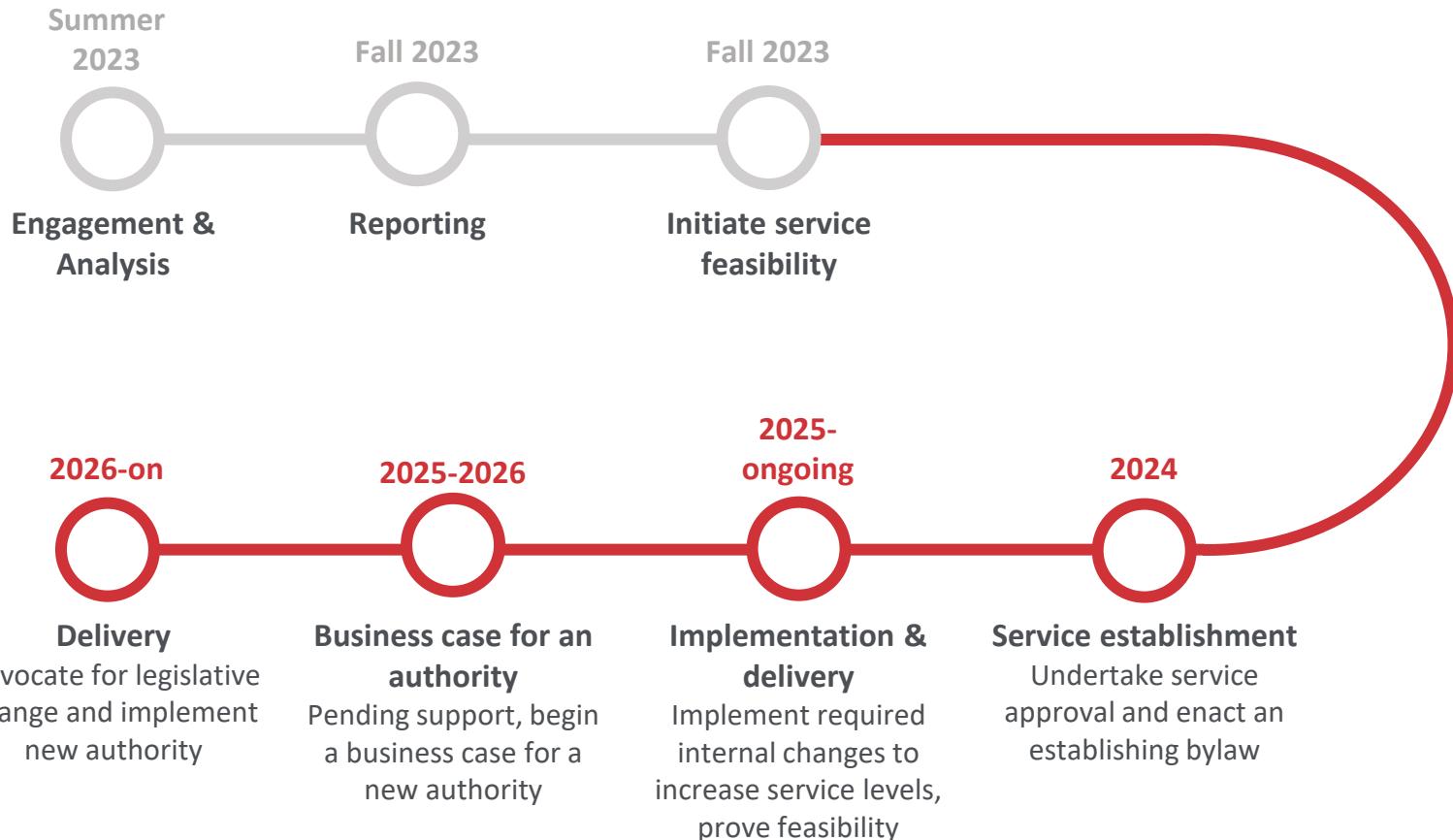
A photograph of a man walking on a street. He is carrying a young child on his shoulders. He is pushing a stroller with a child in it. They are walking on a sidewalk with trees and a traffic light in the background.

Next steps

Engagement timeline



Long-term timeline



* The long-term timeline is subject to level of consensus and approvals outside of regional district and local government control.



What is success?

By the end of the Board term, the region has taken a concrete first step toward changing authorities.

Moving forward



The Transportation Committee recommends to the CRD Board:

That the CRD Board seek input from local governments, electoral areas, the province, and relevant partner agencies on service aspirations.



Making a difference...together

REPORT TO THE CAPITAL REGIONAL DISTRICT BOARD MEETING OF WEDNESDAY, JUNE 14, 2023

SUBJECT **Nils Jensen Memorial Bursary 2023**

ISSUE SUMMARY

To announce the student selected from School District 64 Gulf Islands to receive the 2023 Nils Jensen Memorial Bursary.

BACKGROUND

Nils was a Councillor for 15 years on the Oak Bay Municipal Council before becoming the Mayor of Oak Bay in 2011, a position he held until 2018. Nils also served the broader community by acting as the Chair of the CRD Board and as Chair of the Regional Water Supply Commission for 12 years during which time he helped preserve water security for the region. In April 2022 the family of Nils Jensen established a bursary fund in his memory. This bursary will be awarded to the following School Districts (SD): Greater Victoria SD #61; Sooke SD #62; Saanich SD #63; and Southern Gulf Islands SD #64 on a rotating basis.

These are the criteria for awarding the Nils Jensen Memorial Bursary:

- The bursary will be awarded annually, on a rotating basis, to a graduating Grade 12 student from one of the School Districts of Sooke, Greater Victoria, Saanich, or Gulf Islands, to assist the student in pursuing post-secondary education.
- The bursary is to be awarded on the basis of financial need and an interest in environmental protection or water security.
- The participating secondary school principals will recommend which student is to receive the award.
- The bursary is to be in the amount of \$2,500 per annum.

The 2023 recipient, as chosen by the selection committee from School District 64 Gulf Islands is Maggie Naphtali.

RECOMMENDATION

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

Submitted by:	Carolyn Jenkinson, Manager, Executive Administration
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**REPORT TO THE CAPITAL REGIONAL DISTRICT BOARD
MEETING OF WEDNESDAY, JUNE 14, 2023**

SUBJECT **Ed MacGregor Memorial Bursary 2023**

ISSUE SUMMARY

To announce the student selected from School District 64 Gulf Islands to receive the Capital Regional District's 2023 Ed MacGregor Memorial Bursary.

BACKGROUND

Ed MacGregor, the first Mayor of the District of Sooke and a Capital Regional District (CRD) Director, passed away in March 2003 while in office. In April 2003 the CRD Board established a bursary fund in his memory. In the earlier years, this bursary was awarded only to students in Sooke; however, in 2008 it was recognized that bursary funds are raised by all municipalities and electoral areas within the Capital Region and in September 2008 the CRD Board amended the criteria to include the following School Districts (SD): Greater Victoria SD #61; Sooke SD #62; Saanich SD #63; and Southern Gulf Islands SD #64 on a rotating basis.

These are the criteria for awarding the Ed MacGregor Memorial Bursary:

- The bursary will be awarded annually, on a rotating basis, to a graduating Grade 12 student from one of the School Districts of Sooke, Greater Victoria, Saanich, or Gulf Islands, to assist the student in pursuing post-secondary education.
- The bursary is to be awarded on the basis of financial need.
- The participating secondary school principals will recommend which student is to receive the award.
- The bursary is to be in the amount of \$2,500 per annum.

The 2023 recipient, as chosen by the selection committee from School District 64 Gulf Islands is Elvin Shoolbraid.

RECOMMENDATION

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

Submitted by:	Carolyn Jenkinson, Manager, Executive Administration
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

REPORT TO CAPITAL REGIONAL DISTRICT BOARD MEETING OF WEDNESDAY, JUNE 14, 2023

SUBJECT Capital Regional District 2022 Statement of Financial Information - Statement of Severance Agreements Amendment

ISSUE SUMMARY

To approve the amended Capital Regional District (CRD) 2022 Statement of Financial Information (SOFI) - Statement of Severance Agreements approved by Board on May 10, 2023.

BACKGROUND

On May 10, 2023, the CRD Board approved the 2022 CRD Audit Findings Report and SOFI in advance of a legislated deadline of May 15.

The CRD must submit the audited financial statements, along with the annual filing of the Local Government Data Entry (LGDE) form, to the Inspector of Municipalities by May 15 each year, as per Section 167 of the Community Charter. This requirement has been met.

Subsequent to May 15, by June 30 each year the CRD is required to make available a SOFI inclusive of the audited financial statements, as per Section 2 of the Financial Information Act. In preparation of this filing Staff identified a correction to the unaudited schedule attached to the financial statements, which had been previously approved by the Board on May 10, 2023.

The Statement of Severance Agreement Schedule requires an amendment to add reference to non-unionized in addition to the original disclosure statement that there were no severance agreements to unionized employees. The amended disclosure is illustrated as a tracked change in Appendix A and would read as follows:

There were no severance agreements under which payment commenced between the Capital Regional District and its non-unionized and unionized employees during fiscal year 2022.

The SOFI, inclusive of unaudited schedules, as amended is provided in Appendix B (Page 60).

ALTERNATIVES

Alternative 1

That the Capital Regional District Board approve the amended 2022 Statement of Financial Information – Statement of Severance Agreement as attached in Appendix B.

Alternative 2

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

IMPLICATIONS

The currently approved SOFI with the Statement of Severance Agreements is not in compliance with the Financial Information Act and the Financial Information Regulation.

CONCLUSION

Subsequent to May 15, by June 30 each year the CRD is required to make available a Statement of Financial Information, in preparation of this filing Staff identified a correction to the unaudited Statement of Severance Agreement Schedule attached to the financial statements, which was previously approved by the Board on May 10, 2023. The amendment is to add the wording 'non-unionized' to the disclosure that had previously been omitted.

RECOMMENDATION

That the Capital Regional District Board approve the amended 2022 Statement of Financial Information – Statement of Severance Agreement as attached in Appendix B.

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

Appendix A: Amended Statement of Severance Agreement Excerpt with Track Changes
Appendix B: Amended 2022 Statement of Financial Information

Amended excerpt from 2022 Statement of Financial Information, Other Statements of Financial Information (Unaudited), Severance Agreements approved by Board on May 10, 2023.

Capital Regional District

Severance Agreements

For the year ended December 31, 2022

There were no severance agreements under which payment commenced between the Capital Regional District and its non-unionized and unionized employees during fiscal year 2022.

Capital Regional District 2022 Statement of Financial Information



CRD

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Making a difference...together

**Capital Regional District
Capital Region Housing Corporation**

STATEMENT OF FINANCIAL INFORMATION APPROVAL

The undersigned, as authorized by the Financial Information Regulation, Schedule 1, subsection 9(2), approves all the statements and schedules included in this Statement of Financial Information, produced under the *Financial Information Act*.

Nelson Chan, MBA, FCPA, FCMA
Chief Financial Officer
May 10, 2023

Colin Plant
Chair, CRD Board
On behalf of the Board of Directors
May 10, 2023

*Prepared pursuant to the Financial Information Regulation, Schedule 1, section 9



KPMG LLP
St. Andrew's Square II
800-730 View Street
Victoria BC V8W 3Y7
Canada
Telephone 250-480-3500
Fax 250-480-3539

INDEPENDENT AUDITOR'S REPORT

To the Chair and Directors of the Capital Regional District

Opinion

We have audited the consolidated financial statements of the Capital Regional District (the District), which comprise:

- the consolidated statement of financial position as at December 31, 2022
- the consolidated statement of operations for the year then ended
- the consolidated statement of change in net debt for the year then ended
- the consolidated statement of remeasurement gains and losses for the year then ended
- the consolidated statement of cash flows for the year then ended
- and notes to the consolidated financial statements, including a summary of significant accounting policies

(hereinafter referred to as the "financial statements").

In our opinion, the accompanying financial statements present fairly, in all material respects, the consolidated financial position of the District as at December 31, 2022, and its consolidated results of operations, its consolidated change in net debt, its consolidated remeasurement gains and losses, and its consolidated cash flows for the year then ended in accordance with Canadian public sector accounting standards.

Basis for Opinion

We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the "Auditor's Responsibilities for the Audit of the Financial Statements" section of our auditor's report.

We are independent of the District in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

KPMG LLP is a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. KPMG Canada provides services to KPMG LLP.

Other Information

Management is responsible for the other information. Other information comprises:

- the information, other than the financial statements and the auditor's report thereon, included in the Annual Report.

Our opinion on the financial statements does not cover the other information and we do not and will not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information identified above and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit and remain alert for indications that the other information appears to be materially misstated.

We obtained the information, other than the financial statements and the auditor's report thereon, included in the Annual Report as at the date of this auditor's report.

If, based on the work we have performed on this other information, we conclude that there is a material misstatement of this other information, we are required to report that fact in the auditor's report.

We have nothing to report in this regard.

Responsibilities of Management and Those Charged with Governance for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Canadian public sector accounting standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the District's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the District or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the District's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit.

We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the District's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the District's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the District to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group entity to express an opinion on the financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.



Chartered Professional Accountants

Victoria, Canada
May 11, 2023



Making a difference...together

Capital Regional District Capital Region Housing Corporation

MANAGEMENT REPORT

The Financial Statements contained in this Statement of Financial Information under the Financial Information Act have been prepared by management in accordance with Canadian public sector accounting standards. The integrity and objectivity of these statements are management's responsibility. Management is also responsible for all the statements and schedules, and for ensuring that this information is consistent, where appropriate, with the information contained in the financial statements.

Management is also responsible for implementing and maintaining a system of internal controls to provide reasonable assurance that reliable financial information is produced.

The Board of Directors are responsible for approving the financial statements and for ensuring that management fulfills its responsibilities for financial reporting and internal control.

The external auditor, KPMG LLP, conduct an independent examination, in accordance with Canadian public sector accounting standards, and express their opinion on the financial statements. Their examination does not relate to the other schedules and statements required by the *Financial Information Act*. Their examination includes a review and evaluation of the District's system of internal control and appropriate tests and procedures to provide reasonable assurance that the financial statements are presented fairly. The external auditor has full and free access to staff and management. The Independent Auditor's Report outlines the scope of the audit for the year ended December 31, 2022.

On behalf of Capital Regional District and Capital Region Housing Corporation,

Nelson Chan, MBA, FCPA, FCMA
Chief Financial Officer
May 10, 2023

* For municipalities, the officer assigned responsibility for financial administration signs
* Prepared pursuant to Financial Information Regulation, Schedule 1, Section 9

Consolidated Statement of Financial Position

As at December 31, 2022, with comparative information for 2021

	2022	2021
Financial Assets		
Cash and cash equivalents (Note 3)	\$ 56,632,693	\$ 144,126,555
Investments (Note 3)	344,417,801	213,517,810
Accounts receivable	24,683,384	55,719,978
Debt recoverable: member municipalities and other entities (Note 5)	176,433,255	185,542,697
Restricted cash: MFA Debt Reserve Fund (Note 6)	4,095,849	4,130,157
	606,262,982	603,037,197
Liabilities		
Accounts payable and accrued liabilities	37,409,213	30,960,239
Deferred revenue (Note 7)	48,088,692	48,963,240
Short-term debt (Note 4)	22,957,445	25,661,025
Long-term debt (Note 5)	559,040,879	582,907,668
Landfill closure and post-closure liability (Note 8)	12,695,022	11,936,637
Other liabilities (Note 9)	1,405,838	1,571,396
	681,597,089	702,000,205
Net Debt	(75,334,107)	(98,963,008)
Non-financial Assets		
Tangible capital assets (Note 10)	1,987,929,841	1,949,398,153
Inventory of supplies	1,294,554	1,062,177
Prepaid expenses	2,262,629	2,331,038
	1,991,487,024	1,952,791,368
Accumulated Surplus	1,916,152,917	1,853,828,360
Accumulated Surplus consists of:		
Accumulated surplus (Note 11)	1,922,770,978	1,854,880,497
Net Remeasurement Gains (Losses)	(6,618,061)	(1,052,137)
Accumulated Surplus	\$ 1,916,152,917	\$ 1,853,828,360

Contractual obligations (Note 12)

Contractual rights (Note 13)

Contingencies (Note 14)

Subsequent events (Note 23)

The accompanying notes are an integral part of the consolidated financial statements.



Nelson Chan, MBA, FCPA, FCMA

Chief Financial Officer

Consolidated Statement of Operations

For the year ended December 31, 2022, with comparative information for 2021

	Budget (Note 15)	2022	2021 Recast (Note 22)
Revenue			
Government transfers (Note 16)	\$ 140,198,575	\$ 174,158,953	\$ 258,402,172
Sale of services	95,369,891	92,062,213	87,772,749
Affordable housing rental income	22,145,908	22,548,539	19,361,012
Other revenue	14,938,408	17,065,787	21,628,217
Investment income	620,204	8,832,047	4,498,405
Actuarial adjustment of long-term debt (Note 5a)	-	5,782,984	5,546,660
Grants in lieu of taxes	3,994,404	3,994,408	3,600,276
Developer contributions	-	2,740,207	4,135,620
Total Revenue	277,267,390	327,185,138	404,945,111
Expenses (Note 20)			
Sewer, water, and garbage services	101,995,774	136,019,902	125,249,907
Recreation and cultural services	31,081,821	34,386,206	29,190,339
General government services	28,571,001	28,885,743	23,420,515
Affordable housing rental expense	15,288,159	19,361,673	18,354,102
Debt payments: member municipalities & other entities (Note 5)	15,430,601	17,731,457	15,393,133
Protective services	10,642,730	11,823,227	11,069,164
Other	6,613,064	6,892,130	5,323,025
Planning and development services	4,750,471	2,897,945	2,852,825
Transportation services	822,230	938,479	901,586
Grants in aid	1,735,971	357,895	465,152
Total Expenses	216,931,822	259,294,657	232,219,748
Annual Surplus	60,335,568	67,890,481	172,725,363
Accumulated Surplus, beginning of year	1,854,880,497	1,854,880,497	1,682,155,134
Accumulated Surplus, end of year (Note 11)	\$ 1,915,216,065	\$ 1,922,770,978	\$ 1,854,880,497

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated Statement of Change in Net Debt

For the year ended December 31, 2022, with comparative information for 2021

	Budget (Note 15)	2022	2021
Annual surplus	\$ 60,335,568	\$ 67,890,481	\$ 172,725,363
Acquisition of tangible capital assets	(247,572,100)	(99,020,661)	(240,292,747)
Contributed tangible capital assets	-	(2,748,507)	(7,777,166)
Amortization of tangible capital assets	-	61,321,414	58,510,683
Loss on disposal of tangible capital assets	-	810,075	534,117
Proceeds on sale of tangible capital assets	-	92,671	155,731
Other tangible capital asset transfers	-	1,013,320	-
	(187,236,532)	29,358,793	(16,144,019)
Acquisition of inventory of supplies	-	(2,599,805)	(1,991,623)
Acquisition of prepaid expenses	-	(3,828,326)	(3,301,777)
Consumption of inventory of supplies	-	2,367,428	1,948,344
Use of prepaid expenses	-	3,896,735	2,535,890
	-	(163,968)	(809,166)
Net Remeasurement Gains (Losses)	-	(5,565,924)	(1,659,506)
Change in Net Debt	(187,236,532)	23,628,901	(18,612,691)
Net Debt, beginning of year	(98,963,008)	(98,963,008)	(80,350,317)
Net Debt, end of year	\$ (286,199,540)	\$ (75,334,107)	\$ (98,963,008)

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated Statement of Remeasurement Gains and Losses

For the Year Ended December 31, 2022, with comparative information for 2021

	2022	2021
Accumulated remeasurement gain (loss), beginning of year	\$ (1,052,137)	\$ 607,369
Unrealized gains (losses) attributable to:		
Foreign exchange	6,615	(267)
Portfolio investments	(5,572,539)	(1,605,384)
Realized gains (losses) attributable to:		
Portfolio investments	-	(53,855)
Net remeasurement gains and losses for the year	(5,565,924)	(1,659,506)
Accumulated remeasurement gain (loss), end of year	\$ (6,618,061)	\$ (1,052,137)

The accompanying notes are an integral part of the consolidated financial statements.

Consolidated Statement of Cash Flows

For the year ended December 31, 2022, with comparative information for 2021

	2022	2021
Cash provided by (used in):		
Operating activities:		
Annual surplus	\$ 67,890,481	\$ 172,725,363
Items not involving cash:		
Amortization	61,321,414	58,510,683
Contributed tangible capital assets	(2,748,507)	(7,777,166)
Other tangible capital asset transfers	1,013,320	-
Loss on disposal of tangible capital assets	810,075	534,117
Actuarial adjustment of long-term debt	(5,782,984)	(5,546,660)
Decrease (increase) in non-cash assets:		
Accounts receivable	31,036,594	(20,692,889)
Prepaid expenses	68,409	(765,887)
Inventory of supplies	(232,377)	(43,279)
Increase (decrease) in non-cash liabilities:		
Accounts payable and accrued liabilities	6,448,974	(86,123,890)
Deferred revenue	(874,548)	16,233,759
Landfill closure and post-closure provision	758,385	655,546
Other liabilities	(165,558)	128,949
Net change in cash from operating activities	159,543,678	127,838,646
Capital activities:		
Proceeds on sale of tangible capital assets	92,671	155,731
Cash used to acquire tangible capital assets	(99,020,661)	(176,901,353)
Net change in cash from capital activities	(98,927,990)	(176,745,622)
Investing activities:		
Acquisition of investments	(238,241,437)	(123,132,860)
Proceeds from investments	101,775,522	93,699,305
Net change in cash from investing activities	(136,465,915)	(29,433,555)
Financing activities:		
Restricted cash - MFA debt reserve fund	34,308	(195,844)
Additions to short-term debt	26,457,445	116,661,025
Additions and transfers to long-term debt	9,415,000	112,198,068
Repayment and transfers from short-term debt	(23,161,025)	(158,277,457)
Repayment of long-term debt	(24,389,363)	(24,844,760)
Net change in cash from financing activities	(11,643,635)	45,541,032
Net decrease in cash and cash equivalents	(87,493,862)	(32,799,499)
Cash and cash equivalents, beginning of year	144,126,555	176,926,054
Cash and cash equivalents, end of year	\$ 56,632,693	\$ 144,126,555
Cash paid for interest	\$ 23,090,993	\$ 21,728,983
Cash received for interest	6,316,370	3,162,745

The accompanying notes are an integral part of the consolidated financial statements.

Capital Regional District

Notes to the Consolidated Financial Statements

For the year ended December 31, 2022

1. SIGNIFICANT ACCOUNTING POLICIES

a) BRITISH COLUMBIA REGIONAL DISTRICTS

The consolidated financial statements of the Capital Regional District (the District) are prepared by management in accordance with Canadian public sector accounting standards for local governments and regional districts as recommended by the Public Sector Accounting Board of the Chartered Professional Accountants of Canada. The resources and operation of the District are segregated into various funds for accounting and financial reporting purposes, each being treated as a separate entity with responsibility for the stewardship of the assets allocated to it. Transactions and balances between funds are eliminated on consolidation. The consolidated financial statements exclude trust assets that are administered for the benefit of external parties.

b) BASIS OF CONSOLIDATION

The consolidated financial statements reflect the assets, liabilities, revenues, and expenses of the District and Capital Region Housing Corporation (CRHC). The CRHC is controlled by the District. All transactions and balances between these entities have been eliminated on consolidation.

c) BASIS OF ACCOUNTING

The District follows the accrual method of accounting for revenues and expenses. Revenues are normally recognized in the year in which they are earned and measurable. Expenses are recognized as they are incurred and measurable as a result of receipt of goods or services and/or the creation of a legal obligation to pay.

d) TAXATION

Each Municipality and Electoral Area within the District is requisitioned for their portion of each service in which they participate. These funds are then levied by the Municipalities and the Province (for Electoral Areas) to individual taxpayers and turned over to the District by August 1 of each year.

e) INTEREST

The District follows the practice of investing individually significant unspent funds within individual funds. Interest earned is allocated on the basis of actual earnings from the specific instruments. Investment income is reported as revenue in the period earned. When required by the funding government or related Act, investment income earned on deferred revenue is added to the investment and forms part of the deferred revenue balance.

Excess working capital is pooled and interest earned on funds is allocated to services on a monthly basis.

1. SIGNIFICANT ACCOUNTING POLICIES continued

f) GOVERNMENT TRANSFERS

Government transfers without stipulations restricting their use are recognized in the consolidated financial statements as revenues in the period in which the transfers are authorized, any eligibility criteria are met, and reasonable estimates of the amounts can be made. Government transfers with stipulations restricting their use are recognized in the consolidated financial statements as revenues in the period in which stipulations that give rise to an obligation have been met.

g) DEFERRED REVENUE

Deferred revenue includes amounts received from third parties which may only be used in certain programs, in the completion of specific work, or for the purchase of tangible capital assets. Revenue is recognized in the period when the related expenses are incurred, services performed, or the tangible capital assets are acquired, thereby extinguishing the related liability.

h) CASH AND CASH EQUIVALENTS

Cash and cash equivalents include short-term highly liquid investments with a term to maturity of less than 90 days at acquisition.

i) FINANCIAL INSTRUMENTS

Financial instruments are classified into two categories fair value or cost.

- i. Fair value category: portfolio investments quoted in an active market are reflected at fair value as at the reporting date. Sales and purchases of investments are recorded on the trade date.

Transaction costs related to the acquisition of investments are recorded as an expense. Unrealized gains and losses on financial assets are recognized in the consolidated statement of remeasurement gains and losses until such time that the financial asset is derecognized due to disposal or impairment. At the time of derecognition, the related realized gains and losses are recognized in the consolidated statement of operations and related balances reversed from the consolidated statement of remeasurement gains and losses.

1. SIGNIFICANT ACCOUNTING POLICIES continued

i) FINANCIAL INSTRUMENTS continued

- ii. Cost category: portfolio investment not quoted in an active market, financial assets and liabilities are recorded at cost or amortized cost. Gains and losses are recognized in the consolidated statement of operations when the financial asset is derecognized due to disposal or impairment. Sales and purchases of investments are recorded on the trade date.

Transaction costs related to the acquisition of financial assets are included in the cost of the related instrument.

Financial assets are assessed for impairment on an annual basis. If there is an indicator of impairment, the District determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows, the amount that could be realized from selling the financial asset or the amount the District expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial carrying value.

j) LONG-TERM DEBT

Long-term debt is recorded net of repayments and actuarial adjustments.

k) EMPLOYEE FUTURE BENEFITS

- i. The District and its employees make contributions to the Municipal Pension Plan. These contributions are expensed as incurred.
- ii. Sick leave and other benefits are also available to the District's employees. The costs of these benefits are actuarially determined based on service and best estimates of retirement ages and expected future salary and wage increases. The obligations under these benefit plans are accrued based on projected benefits as the employees render services necessary to earn the future benefits.

l) LANDFILL LIABILITY

The liability for closure costs of operational sites and post-closure care has been recognized based on the present value of estimated future expenses, estimated inflation and the cumulative usage of the site's capacity. The change in this liability during the year is recorded as a charge to operations. These estimates are reviewed and adjusted annually.

1. SIGNIFICANT ACCOUNTING POLICIES continued

m) NON-FINANCIAL ASSETS

Non-financial assets are not available to discharge existing liabilities and are held for use in the provision of services. They have useful lives extending beyond the current year and are not intended for sale in the ordinary course of operations.

i. Tangible Capital Assets

Tangible capital assets are recorded at cost which includes amounts that are directly attributable to acquisition, construction, development or betterment of the asset. The cost, less residual value, of the tangible capital assets, excluding land and the landfill site, are amortized on a straight line basis over their estimated useful lives as follows:

Asset	Useful Life - Years
Engineering Structures	10 to 100 Years
Buildings	20 to 75 Years
Machinery and Equipment	5 to 20 Years
Vehicles	8 to 15 Years
Other Assets	5 to 25 Years

The capacity of the landfill site is evaluated using the units of production method based upon capacity used during the year.

Amortization is charged annually, including in the year of acquisition and in the year of disposal. Assets under construction are not amortized until the asset is available for productive use.

Tangible capital assets are written down when conditions indicate that they no longer contribute to the District's ability to provide goods and services or when the value of the future economic benefits associated with the asset is less than the book value of the asset.

The District is fortunate to have many natural assets that reduce the need for engineered infrastructure that would otherwise be required. This includes watersheds, creeks, ditches and wetlands (rain water management). Canadian public sector accounting standards do not allow for the valuation and recording of such assets into the consolidated financial statements of the District. As such, these natural assets are not reported in these consolidated financial statements.

Assets acquired by right, such as forests, water and mineral resources, are not recorded in the consolidated financial statements.

ii. Contributions of Tangible Capital Assets

Tangible capital assets received as contributions are recorded at their fair value at the date of receipt and also are recorded as revenue.

1. SIGNIFICANT ACCOUNTING POLICIES continued

m) NON-FINANCIAL ASSETS continued

iii. Works of Art and Cultural and Historic Assets

Works of art and cultural and historic assets are not recorded as assets in these consolidated financial statements.

iv. Interest Capitalization

The District does not capitalize interest costs associated with the acquisition or construction of a tangible capital asset.

v. Leased Tangible Capital Assets

Leases which transfer substantially all of the benefits and risks incidental to the District are accounted for as leased tangible capital assets. All other leases are accounted for as operating leases and the related payments are charged to expenses as incurred.

vi. Inventories of Supplies

Inventories of supplies held for consumption are recorded at the lower of cost and replacement cost.

n) CONTAMINATED SITES

Contaminated sites are defined as the result of contamination being introduced in air, soil, water or sediment of a chemical, organic, or radioactive material or live organism that exceeds an environmental standard. A liability for remediation of contaminated sites is recognized, net of any expected recoveries, when all of the following criteria are met:

- i. an environmental standard exists
- ii. contamination exceeds the environmental standard
- iii. the District is directly responsible or accepts responsibility for the liability
- iv. future economic benefits will be given up, and
- v. a reasonable estimate of the liability can be made.

1. SIGNIFICANT ACCOUNTING POLICIES continued

o) CAPITALIZATION OF PUBLIC PRIVATE PARTNERSHIP PROJECTS

A public private partnership (P3) is an infrastructure project where a private sector partner designs, builds, finances and operates public infrastructure assets.

The asset costs, at initial recognition, include development and financing fees estimated at fair value that require the extraction of capital cost information from the financial model in the project agreement. Costs that are incurred directly by the District are also included in the asset cost. The assets are capitalized and amortized in accordance with the District's tangible capital asset policy Note 1 m) i.

A liability is measured initially for the same amount as the capital cost from the financial model less any consideration paid to the private sector partner. The liability is recorded as long-term debt in Note 5. The liability is subsequently measured at amortized cost. The implicit interest rate in the agreement is used to calculate the finance charge embedded in the financial model using the effective interest rate method.

Upon substantial completion, the private sector partner receives monthly payments described in Note 12 over the term of the agreement to cover the partner's operating, capital and financing costs. Operating and financing costs are recognized as expenses in the period to which they relate. Capital costs reduce the liability owing to the private sector partner.

p) USE OF ESTIMATES

The preparation of consolidated financial statements conforming with Canadian public sector accounting standards requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenues and expenses during the period. Significant estimates include assumptions used in estimating provisions for accrued liabilities, landfill liability and the useful lives of tangible capital assets. Actual results could differ from these estimates.

q) SEGMENTED INFORMATION

A segment is defined as a distinguishable activity or group of activities of a government for which it is appropriate to separately report financial information to achieve the objectives of the standard. The District has provided definitions of the District's segments as well as presented consolidated financial information in segmented format in Note 20.

2. ADOPTION OF NEW ACCOUNTING POLICY

On January 1, 2022, the District early adopted Public Sector Accounting Board standard *PS 3160 Public Private Partnerships*. The new accounting standard addresses the reporting of public private partnerships where a public sector entity procures infrastructure using a private sector partner, and the private sector partner designs, builds, finances and operates and/or maintains the infrastructure. The standard was adopted retroactively without prior period restatement. All infrastructure assets and related liabilities recognized under this standard were previously reported in the District's consolidated financial statements, and as a result there was no impact on adoption of the standard to net debt, accumulated surplus or annual surplus.

3. CASH AND CASH EQUIVALENTS AND INVESTMENTS

a) CASH AND CASH EQUIVALENTS

	2022	2021
CRD	\$ 38,114,359	\$ 129,353,814
CRHC	18,518,334	14,772,741
	\$ 56,632,693	\$ 144,126,555

b) INVESTMENTS

	2022	2021
Investments measured at fair value:		
CRD Municipal Finance Authority (MFA) pooled funds	\$ 92,043,802	\$ 63,584,852
Investments measured at cost:		
CRD term deposits and GICs	245,873,999	149,932,958
CRHC term deposits and GICs	6,500,000	-
Total	\$ 344,417,801	\$ 213,517,810

The carrying cost of MFA pooled funds for CRD is \$98,324,313 (2021 - \$64,582,944).

4. SHORT-TERM DEBT

The District's short-term debt of \$1,800,000 (2021 - \$17,510,000) is borrowed through MFA. In 2022, \$3,010,000 of short-term debt was transferred to long-term debt, and \$18,000,000 was repaid. The District paid \$133,969 (2021 - \$631,545) of variable short-term interest based on the MFA's floating daily rate. Short-term debt is repayable on demand and must be repaid or transferred to long-term debt within 5 years of initial draw.

CRHC's short-term debt of \$21,157,445 (2021 - \$2,151,025) is borrowed through BC Housing Management Commission (BCHMC) to finance the construction of affordable housing projects. Interest is charged at a variable rate based on BCHMC's short term cost of borrowing plus an administrative spread. The short-term debt is converted to a long-term mortgage at the completion of each construction project. In 2022, \$2,151,025 of short-term debt was forgiven by BCHMC per the loan agreement and recorded as revenue in Government transfers on the consolidated statement of operations.

	2022			
	Outstanding Dec 31/21	Additions	Repayments and Transfers	Outstanding Dec 31/22
General Capital	\$ 3,010,000	\$ -	\$ (3,010,000)	\$ -
Sewer Capital	14,500,000	5,000,000	(18,000,000)	1,500,000
Water Capital	-	300,000	-	300,000
CRD Debt	17,510,000	5,300,000	(21,010,000)	1,800,000
Vancouver Island Regional Library (VIRL)	6,000,000	-	(6,000,000)	-
CRD Total	23,510,000	5,300,000	(27,010,000)	1,800,000
CRHC Total	2,151,025	21,157,445	(2,151,025)	21,157,445
	\$ 25,661,025	\$ 26,457,445	\$ (29,161,025)	\$ 22,957,445

5. LONG-TERM DEBT

a) DEBT

The District borrows debenture debt through MFA. The principal portion of long-term debenture repayment is added to the MFA sinking fund, which is secured against the debt and invested over the term of the loan. The balance of this fund is used to retire the debt at or before maturity of the loan depending on the actual return on investments in the sinking fund. The MFA provides the District with an estimated actuarial valuation, which is the estimated return on the invested balance of the sinking fund. Debt principal is reported net of repayments and actuarial adjustments. Revenue for actuarial adjustments is recorded as Actuarial adjustment of long-term debt in the consolidated statement of operations.

The District has also incurred long-term debt on behalf of member municipalities and other entities through agreements with the MFA. All monies borrowed are upon the District's credit at large and, in the event of any default, would constitute an indebtedness for which its members are jointly and severally liable.

The District reports the total principal and interest payments collected from member municipalities and other entities as expenses in Debt payments for member municipalities and revenues in Government transfers. Total principal payments received from member municipalities and other entities in the year was \$10,881,251 (2021 - \$9,362,108).

The District has a P3 agreement for the Residuals Treatment Facility (RTF). The RTF contract has a 20-year term to December 31, 2040 with monthly capital cost and financing payments of \$460,812 including interest of 6.29%. Interest paid in 2022 was \$3,745,227 (2021 - \$3,201,666).

Interest expense on long-term debt, including interest on the P3 agreement, is as follows:

	2022	2021
Interest expense on long-term debt	\$ 22,950,445	\$ 21,060,629
Interest received from member municipalities & other entities	6,870,407	5,974,446
Net interest expense related to long-term debt	\$ 16,080,038	\$ 15,086,183

In 2022, \$80,597 (2021 - \$56,577) was collected from member municipalities relating to payments into the Debt Reserve Fund (Note 6) and are included as expenses in Debt payments: member municipalities and other entities. Debt incurred on behalf of member municipalities and other entities is also presented as a receivable in Debt recoverable: member municipalities and other entities on the consolidated statement of financial position for \$176,433,255 (2021 - \$185,542,697).

5. LONG-TERM DEBT continued

a) DEBT continued

Debt is comprised of the amounts in the following table and includes varying maturities, with interest rates ranging from 0.91% to 6.29% and an average rate of 2.64%. The District's debt that is held with the MFA consists of debenture debt of \$166,626,090 (2021 - \$183,674,201) and non-debenture debt of \$60,739,817 (2021 - \$62,670,369). Included in non-debenture debt is \$60,259,882 (2021 - \$62,044,400) owed for the RTF P3 agreement. Principal repayment on the P3 debt was \$1,784,518 (2021 - \$1,346,995). The CRHC debt consists of mortgage debt with BCHMC and commercial banks.

	2022					
	Outstanding December 31, 2021	Additions	Principal	Sinking Fund	Total Debt Repayments	Outstanding December 31, 2022
General Capital	\$ 27,908,718	\$ 3,915,000	\$ (2,934,067)	\$ (704,931)	\$ (3,638,998)	\$ 28,184,720
Sewer Capital	172,796,993	1,000,000	(8,376,229)	(1,370,398)	(9,746,627)	164,050,366
Water Capital	45,638,859	-	(6,940,856)	(3,567,180)	(10,508,036)	35,130,823
	246,344,570	4,915,000	(18,251,152)	(5,642,509)	(23,893,661)	227,365,909
Accrued actuarial valuation - CRD Debt	(3,222,330)	-	-	(140,475)	(140,475)	(3,362,805)
CRD Debt	243,122,240	4,915,000	(18,251,152)	(5,782,984)	(24,034,136)	224,003,104
Member Municipalities	179,542,697	11,355,000	(10,881,251)	(3,583,191)	(14,464,442)	176,433,255
CRD Total	422,664,937	16,270,000	(29,132,403)	(9,366,175)	(38,498,578)	400,436,359
CRHC	160,242,731	4,500,000	(6,138,211)	-	(6,138,211)	158,604,520
	\$ 582,907,668	\$ 20,770,000	\$ (35,270,614)	\$ (9,366,175)	\$ (44,636,789)	\$ 559,040,879

Member municipalities includes all debt incurred by the District on behalf of other entities where the principal and interest payments will be recovered from third parties.

b) DEMAND NOTES - CONTINGENT LIABILITY

The MFA holds demand notes related to the District's debenture debt in the amount of \$17,463,504 (2021 - \$17,963,858) of which \$7,107,325 (2021 - \$7,300,480) is held by the District for the member municipalities & other entities (Note 6). The demand notes are not recorded in the consolidated financial statements as they will only be called upon if the MFA does not have sufficient funds to meet its payment obligations.

5. LONG-TERM DEBT continued

c) LONG-TERM DEBT PAYABLE/MATURING

The following principal and actuarial amounts included in long-term debt are payable/maturing over the next five years and thereafter.

	2023	2024	2025	2026	2027	Thereafter
CRD						
General	\$ 2,944,697	\$ 2,695,023	\$ 2,493,330	\$ 2,080,963	\$ 1,465,490	\$ 9,602,674
Sewer	7,889,481	7,420,491	7,513,353	6,953,608	7,031,901	97,117,233
Water	6,973,678	3,197,288	2,662,519	2,262,430	2,141,647	6,992,412
CRD Debt	17,807,856	13,312,802	12,669,202	11,297,001	10,639,038	113,712,319
Member Municipalities	10,490,499	10,182,473	9,323,017	8,610,068	7,342,014	69,866,166
CRD Total	28,298,355	23,495,275	21,992,219	19,907,069	17,981,052	183,578,485
CRHC	6,189,329	6,030,185	5,591,576	5,375,345	5,220,773	130,197,312
Total Principal Repayment	34,487,684	29,525,460	27,583,795	25,282,414	23,201,825	313,775,797
Estimated Sinking Fund Income	5,962,312	6,253,836	5,937,018	5,312,777	5,162,560	76,555,401
Total	\$ 40,449,996	\$ 35,779,296	\$ 33,520,813	\$ 30,595,191	\$ 28,364,385	\$ 390,331,198

Member municipalities includes all debt incurred by the District on behalf of other entities where the principal and interest payments will be recovered from third parties.

6. MFA DEBT RESERVE FUND

The MFA provides capital financing for regional districts and their member municipalities. The MFA is required to establish a Debt Reserve Fund into which each regional district and member municipality, who shares in the proceeds of a debt issue through the District, is required to pay certain amounts set out in the debt agreements. Interest earned on these funds (less administrative expenses) becomes an obligation of the MFA to the regional district. If at any time insufficient funds are provided by the regional district or their member municipalities or any other MFA borrower, the MFA may then use these funds to meet payments on its obligations. Should this occur, the regional district and member municipalities may be called upon to restore the fund. The MFA has not required the debt reserve fund to meet obligations in its history. The cash deposits of the member municipalities \$3,581,035 (2021 - \$3,602,570) are not recorded in these consolidated financial statements. The District's restricted cash on its direct debt is \$4,095,849 (2021 - \$4,130,157).

	2022	2021
Cash Deposits		
Restricted cash - MFA Debt Reserve Fund	\$ 4,095,849	\$ 4,130,157
Cash deposits - Member Municipalities	3,581,035	3,602,570
Demand Notes		
Demand notes - Capital Regional District	10,356,179	10,663,378
Demand notes - Member Municipalities	7,107,325	7,300,480
	\$ 25,140,388	\$ 25,696,585

7. DEFERRED REVENUE

Continuity of deferred revenue is as follows:

	2022	2021
Balance, beginning of year	\$ 48,963,240	\$ 32,729,481
Externally restricted contributions received:		
Federal housing grants	2,127,816	15,563,280
Development cost charges	4,356,547	3,684,642
Developer advances for construction	3,285,655	4,524,693
Total externally restricted contributions received	9,770,018	23,772,615
Externally restricted contributions used and recognized in revenue	(10,010,510)	(8,454,247)
Net change in externally restricted contributions	(240,492)	15,318,368
Change in deposits and other deferred revenues	(634,056)	915,391
Balance, end of year	\$ 48,088,692	\$ 48,963,240

The deferred revenue reported on the consolidated statement of financial position consists of the following:

	2022	2021
Deferred revenue - general	\$ 32,423,437	\$ 33,447,378
Deferred revenue - water	1,236,715	1,109,504
Development cost charges	13,063,927	13,189,292
Developer advances for construction	772,909	515,316
Deferred revenue - CRHC	591,704	701,750
Balance, end of year	\$ 48,088,692	\$ 48,963,240

8. LANDFILL CLOSURE AND POST-CLOSURE LIABILITY

In accordance with PS 3270, a liability with respect to permanently closing and monitoring a landfill is incurred as landfill capacity is used. Post-closure costs include landfill gas monitoring, leachate collection system operation and general site maintenance for a period of 30 years after the landfill is permanently closed.

The liability for closure costs of operational sites and post-closure care has been recognized based on the present value of estimated future expenses, estimated inflation and the cumulative usage of the site's capacity to the statement end date. These estimates are reviewed annually with adjustments recorded for any material differences.

In 2022, the District applied to the Province for an expansion to the existing landfill site. If the expansion is approved by the Minister of Environment and Climate Change Strategy, management estimates the life of the landfill will be extended to 2075. The solid waste management plan also contemplates changes to waste to coverage ratios and garbage per capita disposal rates which could result in the landfill life being extended to 2096. Due to uncertainty of the approval, management has not incorporated these changes.

Based on the existing approved Solid Waste Management Plan, the estimated remaining capacity of the landfill site is 57% with a remaining life of 28 years. The plan includes an additional 30 years of post-closure activity.

Landfill closure and post-closure costs are estimated at \$24,631,000 (2021 - \$31,329,000). Based on landfill capacity used to date, a liability is recorded at December 31, 2022 of \$12,695,022 (2021 - \$11,936,637). The estimated liability has been set aside in reserves for funding the future landfill closure and post-closure costs.

9. OTHER LIABILITIES

Other liabilities consist of the following balances:

	2022	2021
Sick leave benefits	\$ 464,200	\$ 532,200
Contaminated sites	911,207	999,491
Other benefits payable	30,431	39,705
	\$ 1,405,838	\$ 1,571,396

a) SICK LEAVE BENEFITS

The District provides sick leave benefits to its employees. The accrued benefit obligation is included in Other liabilities on the consolidated statement of financial position and has been estimated by an actuarial valuation completed at December 31, 2022. The District's accrued benefit obligation is \$464,200 (2021 - \$532,200).

The significant actuarial assumptions adopted in measuring the District's accrued benefit obligation are as follows:

	2022	2021
Discount rates	4.50%	2.50%
Expected future inflation rates	2.00% to 4.00%	2.50%
Expected wage and salary increases	2.00% to 4.00%	2.50%

The expected future inflation rates and wage and salary increases are 4.0% for 2023, 3.0% for 2024, 2.5% for 2025, and 2.0% thereafter.

b) CONTAMINATED SITES

The District estimated a liability of \$911,207 as at December 31, 2022 (2021 - \$999,491) for remediation of five known contaminated sites. Where timing of remediation is known, the liability has been discounted to present value using current MFA lending rates. Estimated undiscounted expenditures in 2022 are \$360,000 (2021: nil). The nature of the contamination includes heavy metals, chlorinated solvents, hydrocarbons, and other organic and inorganic compounds. The source of the contamination includes unregulated shooting activities, disposal of excess soil from utility projects, underground storage tanks, fuel bulk storage facilities, and disposal of septicage and other trucked liquid and solid waste.

10. TANGIBLE CAPITAL ASSETS

	Cost					Accumulated Amortization					Net Book Value December 31, 2022
	Balance at December 31, 2021	Additions	Disposals and Adjustments	Transfers	Balance at December 31, 2022	Balance at December 31, 2021	Disposals and Adjustments	Amortization Expense	Balance at December 31, 2022		
Work in Progress											
CRD	\$ 36,029,919	\$ 28,292,400	\$ (125,687)	\$ (12,233,494)	\$ 51,963,138	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 51,963,138
Engineering Structures											
CRD	1,643,438,021	22,199,272	(2,890,500)	5,259,904	1,668,006,697	352,910,575	(1,792,627)	40,669,562	391,787,510	1,276,219,187	
Buildings											
CRD	290,978,006	3,904,848	(1,230,719)	3,650,371	297,302,506	58,041,581	(889,662)	7,744,632	64,896,551	232,405,955	
CRH/C	126,829,332	34,192,665	-	-	161,021,997	82,180,424	-	3,156,360	85,336,784	75,685,213	
	417,807,338	38,097,513	(1,230,719)	3,650,371	458,324,503	140,222,005	(889,662)	10,900,992	150,233,335	308,091,168	
Machinery & Equipment											
CRD	74,385,914	6,292,481	(1,894,804)	2,034,869	80,818,460	48,802,657	(2,290,443)	4,155,659	50,667,873	30,150,587	
CRH/C	39,677,202	2,106,867	-	-	41,784,069	31,049,791	-	1,949,058	32,998,849	8,785,220	
	114,063,116	8,399,348	(1,894,804)	2,034,869	122,602,529	79,852,448	(2,290,443)	6,104,717	83,666,722	38,935,807	
Vehicles											
CRD	25,419,384	942,062	(381,674)	191,371	26,171,143	16,130,863	(354,485)	1,709,241	17,485,619	8,685,524	
Land											
CRD	273,829,557	3,300,399	(31,091)	33,602	277,132,467	-	-	-	-	-	277,132,467
CRH/C	9,496,053	-	-	-	9,496,053	-	-	-	-	-	9,496,053
	283,325,610	3,300,399	(31,091)	33,602	286,628,520	-	-	-	-	-	286,628,520
Land Depletion											
CRD	648,301	-	-	-	648,301	220,732	-	18,523	239,255	409,046	
Land Under Prepaid Lease											
CRH/C	11,303,596	-	-	-	11,303,596	2,258,021	-	194,031	2,452,052	8,851,544	
Other Assets											
CRD	23,497,010	538,174	(688,808)	1,063,377	24,409,753	14,539,498	-	1,724,348	16,263,846	8,145,907	
	\$ 2,555,532,295	\$ 101,769,168	\$ (7,243,283)	\$ -	\$ 2,650,058,180	\$ 606,134,142	\$ (5,327,217)	\$ 61,321,414	\$ 662,128,339	\$ 1,987,929,841	
Totals											
CRD	2,368,226,112	65,469,636	(7,243,283)	-	2,426,452,465	490,645,906	(5,327,217)	56,021,965	541,340,654	1,885,111,811	
CRH/C	187,306,183	36,299,532	-	-	223,605,715	115,488,236	-	5,299,449	120,787,685	102,818,030	
	2,555,532,295	101,769,168	(7,243,283)	-	2,650,058,180	606,134,142	(5,327,217)	61,321,414	662,128,339	1,987,929,841	
	\$ 2,555,532,295	\$ 101,769,168	\$ (7,243,283)	\$ -	\$ 2,650,058,180	\$ 606,134,142	\$ (5,327,217)	\$ 61,321,414	\$ 662,128,339	\$ 1,987,929,841	

During 2022, \$2,740,207 (2021 - \$4,291,723) in water distribution infrastructure and \$8,300 (2021 - \$3,718,443) in other assets were contributed to the District.

10. TANGIBLE CAPITAL ASSETS continued

	Cost				Accumulated Amortization					Net Book Value December 31, 2021
	Balance at December 31, 2020	Additions	Disposals	Transfers	Balance at December 31, 2021	Balance at December 31, 2020	Disposals and Adjustments	Amortization Expense	Balance at December 31, 2021	
Work in Progress										
CRD	\$ 80,048,259	\$ 18,425,071	\$ -	\$ (62,443,411)	\$ 36,029,919	\$ -	\$ -	\$ -	\$ -	\$ 36,029,919
Engineering Structures										
CRD	1,377,247,397	169,974,270	-	96,216,354	1,643,438,021	315,475,328	-	37,435,247	352,910,575	1,290,527,446
Buildings										
CRD	293,129,076	27,594,562	(272,335)	(29,473,297)	290,978,006	50,843,905	(56,313)	7,253,989	58,041,581	232,936,425
CRHC	122,362,585	7,198,755	(2,732,008)	-	126,829,332	81,568,411	(2,441,453)	3,053,466	82,180,424	44,648,908
	415,491,661	34,793,317	(3,004,343)	(29,473,297)	417,807,338	132,412,316	(2,497,766)	10,307,455	140,222,005	277,585,333
Machinery & Equipment										
CRD	71,894,601	4,378,298	(1,654,012)	(232,973)	74,385,914	46,565,471	(1,654,009)	3,891,195	48,802,657	25,583,257
CRHC	38,956,747	2,172,315	(1,451,860)	-	39,677,202	30,427,494	(1,304,977)	1,927,274	31,049,791	8,627,411
	110,851,348	6,550,613	(3,105,872)	(232,973)	114,063,116	76,992,965	(2,958,986)	5,818,469	79,852,448	34,210,668
Vehicles										
CRD	23,766,854	2,305,845	(653,315)	-	25,419,384	14,991,694	(616,930)	1,756,099	16,130,863	9,288,521
Land										
CRD	264,552,692	13,934,065	-	(4,657,200)	273,829,557	-	-	-	-	273,829,557
CRHC	9,496,053	-	-	-	9,496,053	-	-	-	-	9,496,053
	274,048,745	13,934,065	-	(4,657,200)	283,325,610	-	-	-	-	283,325,610
Land Depletion										
CRD	648,301	-	-	-	648,301	202,209	-	18,523	220,732	427,569
Land Under Prepaid Lease										
CRHC	9,658,643	1,644,953	-	-	11,303,596	2,068,631	-	189,390	2,258,021	9,045,575
Other Assets										
CRD	22,464,704	441,779	-	590,527	23,497,010	11,553,998	-	2,985,500	14,539,498	8,957,512
	\$ 2,314,225,912	\$ 248,069,913	\$ (6,763,530)	\$ -	\$ 2,555,532,295	\$ 553,697,141	\$ (6,073,682)	\$ 58,510,683	\$ 606,134,142	\$ 1,949,398,153
Totals										
CRD	2,133,751,884	237,053,890	(2,579,662)	-	2,368,226,112	439,632,605	(2,327,252)	53,340,553	490,645,906	1,877,580,206
CRHC	180,474,028	11,016,023	(4,183,868)	-	187,306,183	114,064,536	(3,746,430)	5,170,130	115,488,236	71,817,947
	\$ 2,314,225,912	\$ 248,069,913	\$ (6,763,530)	\$ -	\$ 2,555,532,295	\$ 553,697,141	\$ (6,073,682)	\$ 58,510,683	\$ 606,134,142	\$ 1,949,398,153

11. ACCUMULATED SURPLUS

	2022	2021
Surplus:		
Invested in tangible capital assets	\$ 1,582,364,772	\$ 1,526,372,142
Operating Funds:		
CRD	156,682,325	156,134,162
CRHC	9,213,309	2,039,855
Total surplus	1,748,260,406	1,684,546,159
Reserve funds set aside for specific purposes:		
	2022	2021
Regional		
Equipment Replacement Fund	32,670,563	29,544,673
Feasibility Study Reserve Fund	147,412	150,241
Office Facilities & Equipment Reserve Fund	4,977,806	6,368,658
Regional Parks Capital Reserve Fund	12,610,444	12,915,923
Solid Waste Capital Reserve Fund	11,675,388	8,730,881
Regional Parks Land Capital Reserve Fund	1,125,646	1,103,934
Regional Parks Legacy Operating Reserve Fund	17,349	15,885
Regional Parks Operating Reserve Fund	97,346	94,704
Regional Planning Services Operating Reserve Fund	1,697,335	2,298,461
Regional Growth Strategy Operating Reserve Fund	1,731,257	1,569,948
Climate Action & Adapt Operating Reserve Fund	936,580	85,456
Regional Source Control Operating Reserve Fund	498,070	515,778
Land Bank & Housing Operating Reserve Fund	405,178	206,353
HAZMAT Incident Response Operating Reserve Fund	118,838	106,444
Emergency Response 911 Operating Reserve Fund	106,774	172,903
Solid Waste Operating Reserve Fund	26,910,018	39,976,688
GIS Data Maintenance Operating Reserve Fund	54,399	367
IW ES Ops Operating Reserve Fund	1,007,205	979,879
ES Water Quality Operating Reserve Fund	528,412	398,285
ES HQ Admin Operating Reserve Fund	60,989	44,741
ES Engineering Operating Reserve Fund	459,483	447,017
ES Protection Operating Reserve Fund	807,250	785,349
Legislative and General Services Operating Reserve Fund	2,648,603	2,227,560
Regional Emergency Program Operating Reserve Fund	36,896	91,024
Facility Management Operating Reserve Fund	123,346	106,277
HQ Facility Operating Reserve Fund	58,332	56,600
Community Health Operating Reserve Fund	78,605	-
GeoSpatial Referencing Operating Reserve Fund	10,863	-

11. ACCUMULATED SURPLUS continued

	2022	2021
Sub-Regional		
Royal Theatre Capital Reserve Fund	1,235,073	867,191
S.P.W.W.S. Sewer Debt Reserve Fund	1,141,854	1,812,916
Saanich Peninsula Ice Arena Facility Capital Reserve Fund	4,182,867	3,908,349
SEAPARC Capital Reserve Fund	1,137,932	1,324,496
Trunk Sewers and Sewage Disposal Facilities Capital Reserve Fund	1,235,028	1,258,955
Sidney Treatment Plant Capital Reserve Fund	1,009,507	982,118
Saanich Peninsula Water Supply Capital Reserve Fund	5,417,843	6,221,195
McPherson Theatre Capital Reserve Fund	2,390,503	2,210,452
Core Area Wastewater Service Capital Reserve Fund	5,743,431	3,913,637
Core Area Wastewater Debt Reserve Fund	11,488,501	6,389,959
Seaparc Legacy Operating Reserve Fund	2,015	1,960
S.P.W.W.S. Sewer Operating Reserve Fund	658,259	580,413
Arts and Culture Grants Operating Reserve Fund	322,109	305,205
Sooke & EA Rec Facilities Operating Reserve Fund	32,649	26,899
Panorama Recreation Operating Reserve Fund	401,087	312,705
JDF Community Planning Operating Reserve Fund	385,628	315,239
Stormwater Quality Sooke Operating Reserve Fund	50,412	43,550
Stormwater Quality Core Operating Reserve Fund	279,186	191,512
Stormwater Quality Sannich Pen Operating Reserve Fund	44,157	25,101
Saanich Peninsula Source Control Operating Reserve Fund	48,179	45,322
LWMP Onsite Operating Reserve Fund	384,233	329,009
LWMP Peninsula Operating Reserve Fund	135,311	54,632
LWMP Core & WS Operating Reserve Fund	726,636	986,281
Core Area Wastewater Operating Reserve Fund	10,633,127	7,698,621
Building Inspection Operating Reserve Fund	612,699	292,078
Emergency Planning Operating Reserve Fund	60,373	61,439
Local		
Shirley Fire Reserve Fund	130,685	105,985
Southern Gulf Islands Emergency Capital Fund	278,083	261,825
Sooke Community Park Capital Fund	204,085	597,479
Pender Island Park Land Reserve Fund	37,738	36,714
Salt Spring Island Park Land Acquisition Reserve Fund	835,418	912,498
Salt Spring Island Parks & Recreation Capital Reserve Fund	370,597	410,214
Southern Gulf Islands Small Craft Harbour Capital Reserve Fund	189,768	186,129
Galiano Island Parks & Recreation Capital Reserve Fund	288,531	64,905
Saturna Island Park Land Reserve Fund	3,335	3,244
Mayne Island Park Land Reserve Fund	119,388	110,463
North Pender Island Fire Capital Reserve Fund	247,471	349,445
Pender Island Parks & Recreation Commission Fund	422,827	367,005
Saturna Island Parks & Recreation Commission Fund	80,459	74,693
Willis Point Fire & Recreation Capital Reserve	145,782	149,091
Port Renfrew Solid Waste Capital Reserve Fund	36,050	55,260
Magic Lake Sewerage System Capital Reserve Fund	374,653	306,661

11. ACCUMULATED SURPLUS continued

	2022	2021
Maliview Estates Sewer Capital Reserve Fund	79,029	26,389
Ganges Sewer LSA Capital Reserve Fund	593,041	864,625
Cedars of Tuam Water Capital Reserve Fund	7,395	12,164
Port Renfrew Sewer System Capital Reserve Fund	24,997	7,612
Magic Lake Estates Water System Capital Reserve Fund	1,121,385	1,151,915
Port Renfrew Sewer & Water System Capital Reserve Fund	58,573	52,500
Lyall Harbour/Boot Cove Water Service Area Capital Reserve Fund	32,171	23,956
Surfside Park Estates Water Capital Reserve Fund	70,105	65,217
Skana Water Service Capital Reserve Fund	11,638	39,384
Sticks Allison Water Capital Reserve Fund	11,392	4,250
Wilderness Mountain Water Capital Reserve Fund	43,553	47,351
Cedar Lane Water Capital Reserve Fund	17,143	42,387
Beddis Water Capital Reserve Fund	4,198	23,782
Fulford Water Capital Reserve Fund	29,584	85,499
Salt Spring Island Park Capital Reserve Fund	63,699	77,459
Salt Spring Island Pool Facility Capital Reserve Fund	98,457	97,461
Salt Spring Island Emergency Capital Reserve Fund	43,760	42,572
East Sooke Fire Capital Reserve Fund	52,951	42,999
Salt Spring Island Harbours Capital Reserve Fund	215,513	192,539
Family Court Building Capital Reserve Fund	481,094	322,457
Galiano Community Use Building Capital Reserve Fund	83,107	79,756
SSI Library Building Capital Reserve Fund	56,881	64,670
North Galiano Fire Capital Reserve Fund	79,666	72,554
Salt Spring Island Transport Capital Reserve Fund	391,522	103,392
Salt Spring Island Septage Capital Reserve Fund	153,382	171,856
Highland/Fernwood Water SSI Capital Reserve Fund	41,340	52,129
Port Renfrew Fire Capital Reserve Fund	48,721	47,399
Otter Point Fire Capital Reserve Fund	15,571	25,802
Salt Spring Island Transit Capital Reserve Fund	23,915	43,324
Animal Care Legacy Operating Reserve Fund	415,189	517,235
Highland/Fernwood Water Operating Reserve Fund	30,566	22,784
Beddis Water Operating Reserve Fund	17,170	9,752
Fulford Water Operating Reserve Fund	4,404	13,576
Cedar Lane Water Operating Reserve Fund	5,331	3,027
SSI Septage Composting Operating Reserve Fund	20,630	12,475
Ganges Sewer Operating Reserve Fund	96,008	73,603
Maliview Sewer Operating Reserve Fund	31,043	29,082
Magic Lake Estates Water Operating Reserve Fund	45,504	59,516
Lyall Harbour Boot Cove Operating Reserve Fund	10,931	815
Skana Water Operating Reserve Fund	6,092	1,041
Sticks Allison Water Operating Reserve Fund	7,433	1,426
Surfside Park Water Operating Reserve Fund	14,255	24,374
Magic Lake Sewer Operating Reserve Fund	23,075	33,825
Cedar Tuam Water Operating Reserve Fund	7,867	11,461
Durrance Road Fire Operating Reserve Fund	2,951	2,517

11. ACCUMULATED SURPLUS continued

	2022	2021
SGI Emergency Program Operating Reserve Fund	239,231	175,223
SSI Emergency Program Operating Reserve Fund	72,341	62,611
Nuisance & Unsightly Premises Operating Reserve Fund	19,000	11,693
Electoral Area Fire Services Operating Reserve Fund	323,799	336,571
Electoral Area Soil Deposits & Removal Operating Reserve Fund	74,675	70,228
Noise Control Operating Reserve Fund	21,805	15,454
Animal Care Services Operating Reserve Fund	75,272	75,699
SSI Transit Operating Reserve Fund	192,796	302,186
Electoral Area Elections Operating Reserve Fund	125,101	103,359
Stormwater Quality SSI Operating Reserve Fund	77,945	57,225
Stormwater Quality SGI Operating Reserve Fund	20,797	13,535
SSI Economic Development Operating Reserve Fund	25,197	8,680
SSI Transportation Operating Reserve Fund	19,068	13,600
Port Renfrew Sewer Operating Reserve Fund	4,377	349
Wilderness Mountain Water Operating Reserve Fund	6,277	11,613
Port Renfrew Water Operating Reserve Fund	1,171	4,071
SGI Electoral Area Admin Operating Reserve Fund	114,807	97,705
SGI Economic Development Operating Reserve Fund	8,164	6,493
SSI Community Recreation Operating Reserve Fund	451	8,222
SSI Pool and Park Land Operating Reserve Fund	18,581	35,689
Capital Region Housing Corporation		
Capital Reserve Fund	8,294,901	7,029,087
Operating Reserve Fund	4,958,728	4,050,262
Total reserves	174,510,572	170,334,338
 Accumulated Surplus	\$ 1,922,770,978	\$ 1,854,880,497

12. CONTRACTUAL OBLIGATIONS

a) CAPITAL PROJECTS AND OPERATING CONTRACTS

At December 31, 2022, the District has outstanding commitments to capital projects and operating contracts totaling \$200,143,331 (2021 - \$173,063,065).

b) LONG-TERM LEASES

The District rents facilities and leases machinery and equipment under long-term operating leases. Future minimum lease payments are as follows:

	2022	2021
2023	\$ 360,898	\$ 742,550
2024	133,580	695,186
2025	131,280	226,445
2026	93,649	184,691
2027	53,278	87,728
Total future minimum lease payments	\$ 772,685	\$ 1,936,600

c) PUBLIC PRIVATE PARTNERSHIP

The District has entered into a multiple-year contract with a third party to design, build, finance, operate and maintain a Residuals Treatment Facility. The future obligations under the contract are as follows:

	Capital Cost and Financing	Operating and Maintenance Costs	Total Payments
2023	\$ 5,529,745	\$ 4,798,690	\$ 10,328,435
2024	5,529,745	4,908,111	10,437,856
2025	5,529,745	5,028,605	10,558,350
2026	5,529,745	5,727,310	11,257,055
2027	5,529,745	5,251,411	10,781,156
Thereafter	71,886,682	81,715,264	153,601,946
Total	\$ 99,535,407	\$ 107,429,391	\$ 206,964,798

Operating and maintenance costs to be paid to the private sector partner are contingent on specified performance criteria and the amounts in the table include an estimateion of inflation but do not reflect performance holdbacks. The asset values are recorded as tangible capital assets and corresponding liabilities are recorded as debt and disclosed in Note 5.

13. CONTRACTUAL RIGHTS

a) THIRD PARTY AGREEMENTS

At December 31, 2022, the District has entered into a number of multi-year revenue contracts with third parties. The estimated contractual rights under these contracts are as follows:

	2022	2021
2023	\$ 7,303,509	\$ 7,418,709
2024	292,239	215,725
2025	272,426	222,137
2026	265,880	228,741
2027	212,804	235,544
	<hr/> \$ 8,346,858	<hr/> \$ 8,320,856

b) LONG-TERM LEASES

The District has entered into various contracts for rental revenue. The estimated contractual rights under these contracts are as follows:

	2022	2021
2023	\$ 1,327,143	\$ 1,552,334
2024	317,896	516,373
2025	199,994	176,018
2026	184,224	146,018
2027	14,395	10,321
	<hr/> \$ 2,043,652	<hr/> \$ 2,401,064

14. CONTINGENCIES

a) LAWSUITS

In the normal course of operations, the District is faced with lawsuits for damages of a diverse nature. At year-end, the District's estimated exposure to each such liability is either not determinable or is not considered to be significant. Claims paid by the District as a result of litigation are reported as expenses. Liabilities are recorded upon a determination that a loss is likely and a determination can be made of the estimated amounts.

14. CONTINGENCIES continued

b) BUILDING ENVELOPE REMEDIATION (BER) - (CRHC)

A number of low income housing buildings are operated by the CRHC under agreements with BCHMC. Prior to the signing of the new Umbrella Agreement in 2012, BCHMC provided funding for building envelope failure remediation for BCMHC and Homes BC buildings. In the event CRHC is unable to comply with agreement terms, BCHMC may require repayment of certain BER subsidies. Funding for future BER for all buildings except for buildings with no operating agreements is subject to future negotiations with BCHMC.

15. BUDGET DATA

The budget data presented in these consolidated financial statements is based on the 2022-2026 Financial Plan Bylaw 4481 as approved by the Board on March 16, 2022. Interfund transfers and debt principal payments are removed from the budget and the CRHC budget is added for presentation in the consolidated financial statements. Amortization is not contemplated in development of the budget and, as such, is not included. Other differences between budget and actuals exist such as higher demand for service, unexpected events, or changes in market and economic conditions. The District monitors budget by service and manages variances through service revenue, budget amendments, or reserve balances. The table below reconciles the budget surplus reported in the consolidated statement of operations to the budget surplus approved by the Board.

	Total
Budget annual surplus (deficit) as reported	\$ 60,335,568
Deduct outflows for:	
Transfers to reserve funds	(20,128,288)
Transfers to capital funds	(23,199,326)
Transfers to equipment replacement fund	(3,903,453)
Debt principal payments	(16,421,401)
CRHC transfers to reserve funds	(3,016,866)
CRHC debt principal payments	(6,145,126)
Add inflows for:	
Transfers from reserve funds	5,387,361
Prior year net surplus	7,859,598
CRHC transfers from reserve funds	58,800
<u>Annual surplus approved by the Board</u>	<u>\$ 826,867</u>

16. GOVERNMENT TRANSFERS

The following government transfers have been included in revenues:

	2022	2021
Federal	\$ 7,743,554	\$ 46,185,285
Provincial	38,792,422	95,418,970
Local	127,622,977	116,797,917
	\$ 174,158,953	\$ 258,402,172

Federal Government transfers include \$nil (2021 - \$35,750,000) relating to the Core Area Wastewater Treatment Project and \$nil (2021 - \$5,800,000) relating to the Regional Housing First Program (RHFP). Provincial Government transfers include \$nil (2021 - \$62,000,000) relating to the Core Area Wastewater Treatment Project and \$16,239,829 (2021 - \$5,606,806) relating to the Regional Housing First Program (RHFP). Local Government transfers include tax levies collected by the Province and municipalities on behalf of the District.

17. PENSION PLAN

The District and its employees contribute to the Municipal Pension Plan (a jointly trustee pension plan). The board of trustees, representing plan members and employers, is responsible for administering the plan, including investment of assets and administration of benefits. The plan is a multi-employer defined benefit pension plan. Basic pension benefits are based on a formula. As at December 31, 2021, the plan has about 227,000 active members and approximately 118,000 retired members. Active members include approximately 42,000 contributors from local governments.

Every three years, an actuarial valuation is performed to assess the financial position of the plan and adequacy of plan funding. The actuary determines an appropriate combined employer and member contribution rate to fund the plan. The actuary's calculated contribution rate is based on the entry-age normal cost method, which produces the long-term rate of member and employer contributions sufficient to provide benefits for average future entrants to the plan. This rate may be adjusted for the amortization of any actuarial funding surplus and will be adjusted for the amortization of any unfunded actuarial liability.

The most recent valuation for the Municipal Pension Plan as at December 31, 2021, indicated a \$3,761 million funding surplus for basic pension benefits on a going concern basis.

The District paid \$5,210,779 (2021 - \$5,219,059) for employer contributions to the plan in fiscal 2022, while employees contributed \$4,823,280 (2021 - \$4,613,723) to the plan in fiscal 2022.

The next valuation will be as at December 31, 2024, with results available later in 2025.

Employers participating in the plan record their pension expense as the amount of employer contributions made during the fiscal year (defined contribution pension plan accounting). This is because the plan records accrued liabilities and accrued assets for the plan in aggregate, resulting in no consistent and reliable basis for allocating the obligation, assets and cost to individual employers participating in the plan.

18. RELATED PARTY TRANSACTIONS

The Capital Regional Hospital District (CRHD) is a related party to the CRD. The Board of Directors for each entity is comprised of the same individuals. As legislated by the Hospital District Act, the officers and employees of the CRD are the corresponding officers and employees of the CRHD. The CRD and CRHD are separate legal entities as defined by separate Letters Patent and authorized by separate legislation. During the year the CRHD purchased, at cost, \$883,575 (2021 - \$763,651) of administrative support and project management services from the CRD.

The Regional Housing First Program (RHFP) is a partnership between the CRD, the Provincial government, and the Federal government to provide capital funding to affordable housing projects in the region. The CRD, CRHC and CRHD will invest a combined \$40 million towards projects. In 2018, a RHFP project management office was created to support the delivery of the program. During the year, the CRHD contributed \$118,287 (2021 - \$143,978) and the CRHC contributed \$27,538 (2021 - \$64,790) to the CRD, to cost share in administrative support and project management services.

19. GVLRA - CUPE LONG-TERM DISABILITY TRUST

The Trust was established January 1, 1987 as a result of negotiations between the Greater Victoria Labour Relations Association (GVLRA) representing a number of employers and the Canadian Union of Public Employees (CUPE) representing a number of CUPE locals. The Trust's sole purpose is to provide a long-term disability income benefit plan. The employers and employees each contribute equal amounts into the Trust. The District paid \$485,654 (2021 - \$418,978) for employer contributions and District employees paid \$485,654 (2021 - \$418,978) for employee contributions to the plan in fiscal 2022. Based upon most recent information, at December 31, 2021, the total plan provision for approved and unreported claims was \$24,715,800 with a net surplus of \$1,664,646.

20. SEGMENTED REPORTING

The District is a diversified regional government that provides a wide range of services to its stakeholders. For management reporting purposes, the District's operations and activities are organized and reported by Fund. Funds were created for the purpose of recording specific activities to attain certain objectives in accordance with special regulations, restrictions or limitations.

District services are provided by departments and their activities are reported within these funds. Certain functions have been separately disclosed as segmented information, along with accounting for the services they provide as follows:

Water Services:

Water Services operations include responsibility for the supply of wholesale water to the core municipalities, distribution to the Saanich Peninsula, the Westshore Communities, and Sooke. This segment also includes accountability for a number of local water service areas in Port Renfrew, Saltspring Island, and the Southern Gulf Islands.

Sewer Services:

Sewer Services operations include responsibility for the design, build, and operation of sewage collection, treatment, and disposal systems in the District. This includes the accountability for liquid waste in the core area and a number of local sewer service areas in Port Renfrew, Saltspring Island, and the Southern Gulf Islands.

Environmental Health Services:

Environmental Health Services operations are responsible for solid waste management and related environmental assessment and regulatory programs. The department provides municipal solid waste disposal and recycling services.

Recreation and Cultural Services:

Recreation and Cultural Services operations provide a wide variety of facilities and programs to residents of the capital region. Regional Parks is responsible for establishing and protecting a network of regional parks. Three recreation centers are operated in Sooke, Sidney, and Ganges. There are a number of parks and recreation programs located throughout the Southern Gulf Islands.

20. SEGMENTED REPORTING continued

General Government Services:

General Government Services operations are responsible for providing the functions of Corporate Services (Financial Services, GIS & Information Technology, Business Development, Risk Management, Payroll, Arts Development, and Facilities Management), Administration (Human Resources and Corporate Communications), and Planning and Protective Services.

Capital Region Housing Corporation:

The CRHC is a wholly-owned subsidiary of the Capital Regional District. It was incorporated under the laws of British Columbia Company in 1982 and its principal activity is the provision of rental accommodation for citizens of the District. The CRHC operates properties with 1,951 housing units.

The following page provides additional Segmented Information. The accounting policies used in these segments are consistent with those followed in preparation of the consolidated financial statements as disclosed in Note 1.

20. SEGMENTED REPORTING continued

Year ended December 31, 2022

	Water Services	Sewer Services	Environmental Health Services	Recreation and cultural services	General government services	Capital Region Housing Corporation	2022
Revenue							
Government transfers	\$ 10,568,172	\$ 58,522,968	\$ 944,110	\$ 33,752,557	\$ 50,145,805	\$ 20,225,341	\$ 174,158,953
Sale of services	58,185,112	2,140,992	26,050,314	4,095,420	1,590,375	-	92,062,213
Other revenue	5,085,705	3,322,704	8,860,119	5,730,496	9,633,425	-	32,632,449
Affordable housing - rental income	-	-	-	-	-	22,548,539	22,548,539
Actuarial adjustment of long-term debt	3,770,320	1,238,378	(113,831)	(1,028,620)	1,916,737	-	5,782,984
	77,609,309	65,225,042	35,740,712	42,549,853	63,286,342	42,773,880	327,185,138
Expenses							
Salaries, wages and benefits	16,061,148	84,246	3,096,847	16,434,368	43,739,838	3,813,721	83,230,168
Contract for services and consultants	4,769,776	6,255,761	9,191,730	1,037,985	6,403,983	1,123,805	28,783,040
Repairs and maintenance	67,487	602,789	1,837,079	697,242	1,007,956	1,625,882	5,838,435
Supplies	1,416,079	2,549,632	109,138	1,206,598	2,026,591	386,955	7,694,993
Utilities	1,070,112	2,649,594	78,083	1,025,552	511,422	2,005,702	7,340,465
Amortization of tangible capital assets	13,682,222	27,198,419	2,679,811	4,798,887	7,662,628	5,299,447	61,321,414
Interest on debt	3,579,825	7,765,610	32,340	633,649	7,499,108	3,573,882	23,084,414
Other expenses	4,888,534	19,502,202	6,851,438	8,551,925	675,350	1,532,279	42,001,728
	45,535,183	66,608,253	23,876,466	34,386,206	69,526,876	19,361,673	259,294,657
Annual Surplus (Deficit)	\$ 32,074,126	\$ (1,383,211)	\$ 11,864,246	\$ 8,163,647	\$ (6,240,534)	\$ 23,412,207	\$ 67,890,481

20. SEGMENTED REPORTING continued

Year ended December 31, 2021

	Water Services	Sewer Services	Environmental Health Services	Recreation and cultural services	General government services	Capital Region Housing Corporation	2021
Revenue							
Government transfers	\$ 1,970,095	\$ 156,328,016	\$ 925,799	\$ 35,079,241	\$ 55,275,963	\$ 8,823,058	\$ 258,402,172
Sale of services	57,516,795	2,069,125	23,963,993	3,041,915	1,180,921	-	87,772,749
Other revenue	6,508,934	2,272,301	7,954,149	6,245,808	10,881,326	-	33,862,518
Affordable housing - rental income	-	-	-	-	-	19,361,012	19,361,012
Actuarial adjustment of long-term debt	3,437,081	1,425,213	(110,123)	(977,038)	1,771,527	-	5,546,660
	69,432,905	162,094,655	32,733,818	43,389,926	69,109,737	28,184,070	404,945,111
Expenses							
Salaries, wages and benefits	15,114,556	4,086	2,821,078	13,879,511	39,089,753	3,570,342	74,479,326
Contract for services and consultants	2,258,642	5,048,299	9,253,087	558,260	5,139,548	1,088,124	23,345,960
Repairs and maintenance	136,832	366,047	2,000,473	590,576	731,960	1,231,145	5,057,033
Supplies	1,439,862	3,106,714	114,357	987,488	1,904,669	118,992	7,672,082
Utilities	1,231,790	2,584,665	87,172	812,667	536,130	1,886,353	7,138,777
Amortization of tangible capital assets	13,470,525	25,683,277	2,429,223	4,326,434	7,431,094	5,170,130	58,510,683
Interest on debt	3,606,693	7,574,155	47,890	558,482	6,622,247	3,282,707	21,692,174
Other expenses	3,501,531	17,301,191	6,067,762	7,476,921	(2,030,001)	2,006,309	34,323,713
	40,760,431	61,668,434	22,821,042	29,190,339	59,425,400	18,354,102	232,219,748
Annual Surplus	\$ 28,672,474	\$ 100,426,221	\$ 9,912,776	\$ 14,199,587	\$ 9,684,337	\$ 9,829,968	\$ 172,725,363

21. FINANCIAL RISKS AND CONCENTRATION OF RISK

The District is potentially exposed to credit risk, market and interest rate risk, liquidity risk, and foreign exchange risk from the District's financial instruments. Qualitative and quantitative analysis of the significant risks from the District's financial instruments is provided below by type of risk.

a) CREDIT RISK

Credit risk primarily arises from the District's cash and cash equivalents, accounts receivable and portfolio investments. The risk exposure is limited to their carrying amounts at the date of the consolidated statement of financial position.

Accounts receivable primarily consist of amounts receivable from government organizations, residents and financial institutions. To reduce the risk, the District regularly reviews the collectability of its accounts receivable and if needed, will establish an allowance based on its best estimate of potentially uncollectible amounts. As at December 31, 2022, the amount of allowance for doubtful debts was \$1,242,165 (2021 - nil). The District historically has not had difficulty collecting receivables, nor have counterparties defaulted on any payments.

b) MARKET AND INTEREST RATE RISK

Market risk is the risk that changes in market prices and inputs, such as interest rates, will affect the District's income. The objective of market risk management is to control market risk exposures within acceptable parameters while optimizing the return on risk.

The District manages market risk by holding cash balances with top rated Canadian Schedule I financial institutions. The portfolio investments are managed following the investment policy which is approved by the District's Board of Directors. The District periodically reviews its investments and is satisfied that the portfolio investments are being managed in accordance with the investment policy.

Interest rate risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in the market interest rates. The District's investments are disclosed in Note 3 and changes in the fair value of investments have parallel changes in unrealized gains or losses until realized on disposal. The District's exposure to interest rate risk in relation to debt instruments is limited to long-term debt and short-term financing. The risk applies only to long-term debt when amortization periods exceed the initial locked-in term. Short-term financing is subject to daily float rates, which can result in variability over the course of short-term financing. Interest rate risk related to debt instruments is managed through budget and cash forecasts. Interest rate risk relating to mortgages is mitigated by the subsidy assistance received from BCHMC and CMHC which is based on mortgage principal and interest payments.

There has been no change to the interest rate risk exposure from 2021.

c) LIQUIDITY RISK

Liquidity risk is the risk that the District will not be able to meet its financial obligations as they become due. The District manages liquidity risk by continually monitoring actual and forecasted cash flows from operations, anticipated investing, and financial activities to ensure that its financial obligations are met.

There has been no change to the liquidity risk exposure from 2021.

21. FINANCIAL RISKS AND CONCENTRATION OF RISK continued

d) FOREIGN EXCHANGE RISK

The District has not entered into any agreements or purchased any foreign currency hedging arrangements to hedge possible currency risks, as management believes that the foreign exchange risk derived from currency conversions is not significant. The foreign currency financial instruments are short-term in nature and do not give rise to significant foreign currency risk.

There has been no change to the foreign exchange risk exposure from 2021.

22. COMPARATIVE INFORMATION

2021 comparative information for affordable housing rental income and affordable housing rental expense on the consolidated statement of operations has been recast to reflect a change in the presentation of rental management fees adopted for the current year by CRHC. Total revenue and total expenses decreased by \$2,426,020 as a result of presenting internally generated rental management fees on a net rather than gross basis. There was no change to prior year annual surplus as a result of the new presentation.

23. SUBSEQUENT EVENTS

a) SALE OF LAND

On January 12, 2023, the District completed the sale of a parcel of land for \$5,000,000. The land was originally acquired through the Capital Region Water Supply and Sooke Hills Protection Act in 1997 at no cost. The land was held for sale with a book value of \$nil as at December 31, 2022

b) GROWING COMMUNITIES FUND

Subsequent to year end, the Province publicly announced the Growing Communities Fund that will provide local governments in the province with one-time funding to address the needs of their growing communities. The District has received \$11,559,000 under this program which will be spent in accordance with the guidelines provided by the Province.

c) RAPID HOUSING INITIATIVE

On April 12, 2023, the District committed to disburse a total of \$24,347,423 under the Rapid Housing Initiative to support three local housing projects. A disbursement of \$6,126,467 was made on the same date as the agreement.

d) PURCHASE OF PROSSER PLACE

On April 17, 2023, the District purchased the residential property Prosser Place for \$17,604,721 and then entered into a 60 year, \$12,289,721 lease agreement and 35 year operating agreement of the property with the CRHC. The CRHC obtained short-term financing from BCHMC to fund the prepaid lease of Prosser Place from the District. The financing will be converted to a 35-year mortgage after being placed with a lender by BCHMC.

Capital Regional District

Schedule of Remuneration & Expenses: Employees

For the year ended December 31, 2022

Name	Position	Salary	Expenses	Total
Achuff, Michael	Environmental Science Officer 2	\$ 83,024	\$ 56	\$ 83,080
Acosta, Guillermo	Technical Services Technician 2	83,337	2,020	85,357
Adams, Douglas	Environmental Science Officer 2	82,151	56	82,207
Alsdorf, Melanie L	Manager SEAPARC Recreation	130,739	930	131,669
Ames, Caroline	Financial Analyst 2	80,771	1,074	81,845
Amyotte, Corinne	Manager Payroll	123,986	1,399	125,385
Anderson, Regan	Senior Financial Officer	78,177	1,195	79,372
Anderson, Sam	Utility Operator Team Lead	105,016	1,718	106,733
Anderson, Sawyer	Water Treatment Operator	79,980	251	80,231
Arnet, Jessica	Property Systems Officer	88,557	1,792	90,349
Arthur, Derek R	Senior Technical Services Technician	101,002	-	101,002
Bader, Mathew	Financial Advisor	89,502	1,046	90,547
Bandringa, Natalie	Research Planner	97,753	124	97,877
Barclay, Jeff	Utility Operator 2	100,018	1,912	101,929
Barnard, Kevin	Environmental Science Officer 2	83,209	56	83,265
Barnes, Michael	Sr. Mgr, Capital Health&PIng Strategies	157,031	76	157,107
Baynes, Carissa	Manager Housing Facilities & Maintenance	102,643	128	102,771
Benjamin, Tom H	Business Systems Analyst	107,782	-	107,782
Bennett, Scott	Manager, Technical Services	135,711	3,603	139,314
Betanzo, Adrian	Engineering Technician 5	89,586	-	89,586
Bewley, Graham	Waterworks/Wastewater Supervisor	125,921	907	126,828
Bezeau, Jean-Paul	GIS Technologist 2	88,364	-	88,364
Biggs, Ryan	Watershed Technician 2	92,361	1,023	93,384
Binks, Rob	Field Supervisor, Water Operations	128,234	1,638	129,871
Binnersley, Lauren	Information Technician 5	86,350	126	86,475
Bird, Aron	Business Systems Analyst	95,331	1,890	97,221
Bissenden, Leigh	Utility Operator 4	95,335	1,504	96,839
Blackwell, Warren	Utility Operator Team Lead	119,902	642	120,544
Blaney, Jennifer	Manager Water Quality Laboratory	126,932	-	126,932
Bona, Martina	Engineer 5	99,448	11,995	111,443
Bonnar, Dustin	Utility Operator 2	87,245	861	88,106
Booth, Monique	Manager Communication Services	126,802	441	127,243
Boutilier, Jesse	Water Treatment Operator	100,982	2,179	103,161
Boyne, Nathan	Fire Warden Protection Assistant	96,713	106	96,819
Bradley, James	Utility Operator 2	95,671	1,137	96,808
Bradley, Julie	GVLRA Executive Director	133,616	-	133,616
Bradstock, Sam	Utility Operator 2	81,278	893	82,170
Brenay, James	Utility Operator 4	104,056	1,760	105,816
Brewster, Lorraine E	Senior Manager, Panorama Recreation	157,043	2,493	159,536

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Bridges, George	Utility Operator 4	95,070	735	95,806
Bridges, Gordie	Utility Operator 4	115,606	936	116,543
Bridgewood, David-John	Senior Financial Officer	94,268	1,166	95,434
Brogan, John	Caretaker	72,797	5,648	78,445
Brooks, Skylar	Utility Operator Team Lead	96,853	540	97,394
Buckland, Nigel	Watershed Technician 2	96,821	834	97,656
Burr, Richard	Utility Operator 3	101,897	1,502	103,400
Burrell, Michael G	GIS Technologist 2	88,630	-	88,630
Burrows, Nigel	Mgr, Wildfire, Security & Emergency Resp	126,932	969	127,901
Bustard, Patrick	Senior Financial Advisor	106,704	1,107	107,811
Butts, John	Utility Operator Team Lead	112,416	1,629	114,045
Byrch, Sharon	Manager Information Services	128,933	1,398	130,331
Byron, Justin	Senior Park Maintenance Worker	77,386	221	77,608
Cain, Cameron	Electrical & Instrumentation Team Lead	138,468	4,567	143,035
Cameron, Ross	Manager Risk & Insurance	135,711	23	135,734
Campbell, Karla	Sr Manager SSI Administration	157,034	680	157,714
Campbell, Sarah	Manager Human Resources & Org Devel	126,959	164	127,123
Cannen, Romulo	Systems Officer	102,299	-	102,299
Carby, Shawn	Senior Manager, Protective Services	157,043	646	157,689
Carey, Steven	Sr Manager Legal and Risk Management	144,201	3,030	147,231
Carlson, Richard	Senior Heavy Duty Mechanic	111,323	1,130	112,453
Carmichael, Doug	GIS Technologist	78,180	1,895	80,075
Ceelen, Scott	Industrial Mechanic	106,687	2,311	108,998
Cessford, Dan	Landfill Attendant 1	85,734	-	85,734
Chamberlin, Luke	Utility Operator Team Lead	90,625	1,488	92,113
Chan, Nelson	Chief Financial Officer	264,300	4,652	268,952
Chapman, Jonathan	Electronics Technologist	108,758	432	109,189
Cheney, Russ	Business Systems Analyst	85,440	-	85,440
Chokkalingam, Senthil	Manager SAP Technical Services	152,129	936	153,065
Cholette, Charles	Engineer 3	90,175	3,870	94,045
Christensen, Maxwell	Systems Analyst	91,596	-	91,596
Chytilova, Vanda	Manager Enterprise Resource Planning	152,133	1,830	153,963
Clayton, Nicole	Senior Accounting Clerk	75,433	-	75,433
Constabel, Annette	Senior Manager, Watershed Protection	169,611	3,061	172,672
Cowley, Malcolm	Manager, Wastewater Eng & Planning	152,129	2,765	154,895
Cranwell, Mark	Building Plumbing Inspector	89,055	1,764	90,819
Cullen, Clayton	Manager Water Transmission Operations	123,385	1,157	124,541
Curnow, Steven	Manager Watershed Protection Operations	126,941	929	127,870
Curtis, Matthew	Manager Facilities & Operations	126,941	1,202	128,143

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Dales, Jason A	Sr Manager Wastewater Infrastructure Ops	135,494	2,471	137,965
Deane, Victor	Manager Water Treatment & Operations	126,849	917	127,766
Deelstra, Christy	Maintenance Management Coordinator	82,088	-	82,088
Delgadillo Lopez, Francisca	Manager Strategic Planning	128,840	102	128,942
Despins, Marc	Financial Analyst 4	84,653	1,061	85,714
Dixon, Michael Colin	Warehouse Coordinator	79,401	90	79,491
Dobos, Tony	Assistant Bylaw Enforcement Officer	82,044	-	82,044
Dolinsky, Gina	Planning Analyst	81,558	3,221	84,779
Douillard, Jay	Research Planner	94,226	4	94,230
Drew, Brad	Park Facility Coordinator	88,680	603	89,283
Duffey, Darren	Employee Engagement Specialist	103,388	-	103,388
Dunn, Wendy	Environmental Science Officer 2	83,365	1,643	85,008
Dupuis, Jessica	Environmental Science Officer 2	83,228	1,787	85,016
Durkin, Christopher	Industrial Mechanic	122,278	125	122,402
Duthie, Tanya	Manager IWS Administration	92,503	231	92,734
Eam, Sambo	Manager Financial Reporting	127,568	3,881	131,449
Earle, Hayden A	Field Supervisor Water Operations	162,776	1,357	164,134
East, Erica	Systems Officer	90,394	1,029	91,422
Edwards, Kelly	GIS Technologist 2	91,443	378	91,821
Edwards, Natasha	Utility Operator 3	81,427	714	82,142
Egede, Catherine	Manager HR Operations & Business Support	64,044	13,257	77,301
Elliott, Donald	Sr Manager Regional Housing	159,634	2,283	161,917
Elliott, Nicole	Manager Climate Action Programs	111,059	2,011	113,070
Elliyoon, Arezou	Financial Analyst 1	72,105	4,621	76,725
Esterer, John	Engineer 5	112,681	2,086	114,768
Etherington, Andrew	Facility Maintenance Worker 4	75,131	501	75,632
Fafard, Drew	Supervisor Technical Services	156,658	1,904	158,561
Falconer, Kevin	Utility Operator 4	90,022	963	90,985
Farzad, Mahnaz	Senior Project Coordinator	95,652	941	96,593
Fernandez, Carlos	Electronics Technologist	138,949	560	139,509
Ferris, Elizabeth	Manager ERM Policy & Planning	103,225	3,659	106,884
Field, Karley	Financial Analyst 3	73,201	5,105	78,306
Fisher, Kamar	Financial Advisor	88,790	172	88,963
Forbes, Sarah	Program Coordinator	94,516	424	94,940
Fowler, Deanna	Administrative Officer 3	79,580	41	79,621
Fowles, Robert	Manager Construction & Capital Projects	127,559	1,242	128,801
Frame, Duncan (Cameron)	Utility Operator 2	78,006	1,433	79,439
Franklin, Phillip R	Mechanic 4	104,218	2,263	106,481
Freer, Andrew	Park Technician	77,712	6,775	84,487

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Fudge, Crystal	Environmental Technician 2	74,411	698	75,110
Gardner, David	Utility Operator 4	106,611	983	107,594
Gardner, James (Tobi)	Engineer 4	109,578	2,051	111,629
Gaultier, Lauren	Manager HR Systems & Projects	89,390	1,104	90,494
George, Justin	Mechanic 4	96,223	-	96,223
Gillett, Molly	Utility Operator 2	73,203	2,439	75,642
Gilpin, Christopher	Manager Arts and Culture Support Service	105,068	26	105,094
Girard, Rob	Industrial Mechanic	75,712	76	75,789
Girardet, Jeffery A.	Water Maint. Op 4/Heavy Duty Equip. Op.	110,416	1,019	111,435
Glew, Debbie	Clerk 5	77,196	-	77,196
Gorman, Michael (Shayne)	Senior Bylaw Enforcement Officer	82,964	1,960	84,924
Gorman, Rob J	Network Analyst	124,386	-	124,386
Gosper, Damon	Engineer 5	122,611	1,194	123,805
Govan, James	Facility Maintenance Supervisor	102,934	4,217	107,151
Gray, Alexander	Computer Support Technician	75,247	-	75,247
Gray, Jason	Recreation Program Coordinator 3	79,103	179	79,282
Gray, Zoe	Mgr, Website & Multimedia Development	126,941	449	127,390
Green, Dale M	Senior Environmental Science Officer	106,573	668	107,241
Greeno, Matthew	Environmental Analyst	89,723	3,634	93,357
Gregg, Elizabeth	Facility Maintenance Worker 4	75,633	589	76,222
Greig, Rob	Industrial Mechanic	117,326	1,974	119,300
Grigg, Sharon	Manager Operations (CRHC)	135,702	-	135,702
Gripich, James	Information Technician 3	75,738	1,618	77,356
Groulx, Mark	Manager Bylaw Enforcement & Animal Care	124,299	119	124,419
Gullekson, Geoff	Electronics Technologist	124,765	577	125,342
Haas, Tim	Field Supvr Electrical & Instrumentation	148,272	1,283	149,556
Hall, Fraser	Technical Services Technician 4	95,039	1,238	96,277
Hancock, Adam	Park Operations Team Lead	112,441	459	112,900
Hardiman, Laura	Manager Asset Management	130,438	3,275	133,713
Harris, David	Mechanic 4	102,409	1,345	103,754
Harris, Glenn	Sr Manager Environmental Protection	171,531	2,172	173,703
Hawthorne, Scott M	Field Supervisor Waterworks/Wastewater	125,650	2,041	127,691
Hayes, Alesha	Information Technician 3	78,054	355	78,409
Hemus, Burn M	Operations Chargehand	84,562	90	84,652
Henderson, Coral-Lee	Administrative Coordinator 2	90,782	30	90,812
Henderson, Stephen	Sr Manager Real Estate	157,049	3,041	160,090
Hennigan, David	Sr Mgr, Information Technology & GIS	169,504	3,091	172,595
Hicks, John	Transportation Planner	112,615	2,365	114,980
Hliva, Adam	Field Supervisor Waterworks/Wastewater	133,279	856	134,136

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Hogarth, Jarrod	Utility Operator 4	94,824	2,482	97,306
Hoge, Andrew	Manager, Corporate Finance & Treasury	135,702	1,229	136,932
Hoglund, Colleen	Manager Program Services SEAPARC	110,540	592	111,131
Holmes, Jennifer	Supervisor Business Systems Support	95,537	764	96,301
Horhozer, Jocelyn	Utility Operator 2	77,634	990	78,625
Hozack, John	Supervisor Hartland Maintenance & Ops	128,149	1,367	129,516
Huculak, Shauna	Manager Archaeology	90,418	2,778	93,197
Humphries, Elliot	Watershed Technician 2	81,196	610	81,806
Hucheson, Larisa	GM, Parks & Environmental Services	233,931	3,212	237,143
Iluk, David	Utility Operator Team Lead	101,835	1,689	103,523
Ingraham, Robert N	Manager Corporate Occ Health & Safety	152,114	6,012	158,126
Irg, Shayne	Sr Manager Water Infrastructure Ops	155,855	2,031	157,886
Irwin, Marie	Environmental Science Officer 3	95,033	56	95,089
Jasinsky, Denis	Manager Core Area Wastewater Operations	122,798	1,462	124,259
Jeevanandam, Vimala	Information Technician 2	73,329	2,065	75,394
Jefferies, Andrew	Utility Operator Team Lead	110,037	1,046	111,083
Jenkinson, Carolyn	Manager Executive Administration	97,105	345	97,450
Jesney, Ian	GM Integrated Water Services	174,915	2,554	177,469
Jin, Wenjing (Kate)	Financial Analyst 2	69,096	8,273	77,368
Jo, Kyu-Chang	Senior Financial Advisor	101,380	1,091	102,471
Jobsis, Mark	Systems Officer	101,269	-	101,269
Johansson, Kenneth	Manager Business Systems	135,702	2,481	138,183
Jones, Bethany	Manager Financial Systems & Reporting	135,711	2,647	138,358
Jones, Wayne M	Utility Operator 4	95,386	104	95,490
Kelly, Jared	Manager Capital Projects	110,259	1,858	112,117
Kemle, Kristin	Senior Property Manager	96,012	128	96,140
Kent, Ian	Utility Operator 2	86,743	1,006	87,750
Khan, Usama	Network Analyst	127,782	-	127,782
Kickham, Peter	Manager Environmental Regulations	126,941	323	127,264
Kilvert, Todd	Technical Services Technician 2	83,292	972	84,264
Kim, Kevin (Sang Hyun)	Manager Privacy and FOI	90,056	-	87,199
King, Martine	Recreation Program Coordinator 3	80,876	1,581	82,457
Kippan, Robin	Utility Operator 3	90,313	3,081	93,394
Koby, Patrick	Building Inspector 3	86,151	1,681	87,832
Kolic, Joe	Electrician 3	140,369	363	140,732
Kornelson, James	Electrician 2	120,530	1,057	121,587
Kozak, Craig	Utility Operator Team Lead	105,654	245	105,899
Krishna, Sudha	Manager Social Marketing	97,359	16	97,375
Kroening, James R.	Senior Operator 3 Team Lead	113,815	548	114,363

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Kruger, Allan	Senior Operator 2	128,524	1,356	129,879
Kuzman, Michael	Utility Operator 4	125,700	2,223	127,923
Lachance, Rianna	Senior Manager Financial Services	171,060	8,660	179,720
Lagoa, Marlene	Manager Legislative Svcs Dpty Corp Off	119,739	1,657	121,397
Lambert, Katharine (Kate)	Senior Property Manager	87,355	743	88,098
Lapham, Robert	Chief Administrative Officer	372,919	9,992	382,911
Lathigee, Jonathan	Senior GIS Administrator	122,893	24	122,918
Lavigueur, Eric	Maintenance Management Coordinator	83,861	-	83,861
Lawrence, Iain	Sr Manager JdF Local Area Services	149,191	1,376	150,567
Lazaro, Dianne	Systems Officer	100,440	5,697	106,138
Leahy, Jeffrey	Senior Manager, Regional Parks	169,620	2,923	172,543
Lee, Patricia	Senior Financial Officer	94,381	1,310	95,691
Lee, Wendy J	Laboratory Coordinator	83,256	-	83,256
Lemmon, Kimberly	Manager Planning and Development	80,276	-	80,276
Lesperance, Bruce	Maintenance Management Coordinator	81,380	-	81,380
Lindsay, Christopher	Wildfire Security & Emerg Response Asst	80,568	-	80,568
Littlejohn, Warren	Senior Supervisor, Roads	110,974	3,080	114,054
Liu, Andy	Manager, Environmental Engineering	152,028	1,005	153,033
Locke, Henry	Draftsperson 3	83,155	432	83,587
Long, Colleen	Recreation Program Coordinator 2	74,600	412	75,013
Lorette, Kevin	GM, Planning & Protective Services	232,011	1,981	233,991
Lowe, Chris	Environmental Science Officer 4	100,733	831	101,564
Lundrie, Zachary	Recreation Program Coordinator 2	75,782	1,652	77,435
Lynk, Tyler	Utility Operator 4	104,347	1,381	105,728
Lyon, Gordon	Utility Operator 4	93,351	2,664	96,015
Lyons, Shirley	Environmental Science Officer 2	83,292	475	83,767
MacDonald, Colin	Utility Operator Team Lead	69,280	7,713	76,993
MacDonald, Matthew	Financial Analyst 1	71,961	3,613	75,574
MacDonald, Mieko	Systems Officer	100,618	-	100,618
MacIntyre, Michael	Manager Planning & Development	144,456	536	144,992
Maher, Kelly	Utility Operator 4	95,965	2,092	98,056
Maloney, Jeffrey	Utility Operator Team Lead	114,421	1,453	115,874
Mann, Matt	Maintenance Management Coordinator	83,906	-	83,906
Manning, Anthony	Electrician 2	95,789	1,509	97,298
Marr, Joseph	Sr Manager Infrastructure Engineering	153,679	854	154,533
Martin, Darren W	Database Administrator	147,898	4,195	152,092
Mason, Scott	Manager, Water Engineering & Planning	152,130	1,010	153,139
May, Stephen	Sr Manager, Facilities Mgmt & Eng Serv	169,620	1,076	170,695
McAloon, James A	Engineering Technician 2	82,324	14	82,338

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
McCoubrey, Patrick	Security Chargehand	96,107	1,372	97,479
McCranks, Matthew	Sr Manager Wastewater Infrastructure Ops	113,660	1,355	115,015
McCreesh, Shari	Purchaser	76,898	-	76,898
McDonough, Jeff	Electrician 2	96,737	627	97,364
McIntyre, Shawn	Integrated O&M Planner and Scheduler	101,237	318	101,555
McLorg, Michael F	Senior CAD/GIS Technologist	90,817	-	90,817
McNeill, James	Water Treatment Operator	93,467	1,121	94,588
McPherson, Scott	Utility Operator Team Lead	115,083	213	115,296
McQuarrie, Christine	Manager, Human Resources	135,702	578	136,280
Medland, John (Michael)	Senior Financial Advisor	106,725	1,091	107,816
Medler, Derek	Utility Operator 4	82,574	1,611	84,185
Melling, Andrew	Utility Operator 3	85,576	1,665	87,241
Menzies, Curtis	Utility Operator 4	95,446	5,632	101,077
Michael, Jerry	Administrative Coordinator 2	73,355	3,335	76,691
Middleton, David	Utility Operator Team Lead	95,968	205	96,173
Mildenberger, Jeffrey	Water Treatment Operator	75,288	839	76,127
Milkert, Cory	Environmental Science Officer 2	75,257	4,210	79,467
Miller, Jacey	Industrial Mechanic	121,997	234	122,231
Moch, Christoph	Manager Water Quality	135,711	2,256	137,967
Modak, Lisa	Information Technician 5	88,485	-	88,485
Mooney, John	Manager Park Operations	118,727	283	119,009
Moore, Allan W	Systems Officer	99,864	-	99,864
Moore, Christopher	Environmental Analyst	79,380	308	79,687
Morbey, Nathaniel	Senior Financial Advisor	102,502	1,426	103,928
Morley, Kristen	GM Corporate Services	234,411	6,718	241,128
Moss, Tracey	Manager Visitor Experience & Stewardship	125,346	2,300	127,646
Mullett, David	Water Maint. Op 4/Heavy Duty Equip. Op.	98,562	1,049	99,611
Nakata, Tony	Engineer 5	111,853	50	111,903
Navarrete, Mauricio	Building Services Coordinator	104,977	51	105,027
Neilson, Christopher	Senior Manager Human Resources & Org Dev	193,180	2,714	195,893
Nelson, Douglas	Watershed Operator/Equipment Operator	103,437	-	103,437
Nestor, Cameron	Utility Operator 4	107,409	737	108,146
Nguyen, Huy	Aquatic Ecology Technician 3	88,493	641	89,135
Novy, Lukas	Manager Hartland North Engineering	110,850	3,041	113,891
O'Brien, Kevin	Property Manager 3	76,571	174	76,746
O'Dwyer, Lani	Technical Services Technician 3	90,857	908	91,765
Olafson, Dean	Manager Engineering SSI	125,655	2,405	128,061
Olsen, Elizabeth	Program Assistant 3	75,197	27	75,224
Orr, Andy	Senior Manager, Corporate Communications	157,034	491	157,525

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Oulton, Jason	Program Technician	74,327	1,175	75,502
Ovington, Dan	Manager SSI Parks & Recreation	135,692	2,057	137,749
Pacheco, Joe H	Supervisor Weigh Scale	110,743	244	110,987
Page, Ryan	Utility Operator 4	127,186	3,858	131,043
Panich, Andrea	Environmental Technician 2	78,580	2,085	80,665
Parchem, Jeff	Facility Maintenance Worker 4	77,638	2,825	80,463
Parker, David	Manager, Systems Maintenance	126,941	932	127,873
Parker, Robert	Utility Operator Team Lead	145,704	4,996	150,700
Patade, Rakesh	Systems Officer	100,674	995	101,669
Patel, Mitul	Systems Officer	95,103	995	96,098
Perra, Michael	Systems Officer	78,262	7,097	85,358
Piva, Daniel	Laboratory Coordinator	83,533	611	84,145
Powers, Sceni	Senior Financial Officer	96,918	5,043	101,961
Preece, Cameron	Manager Core Area Conveyance Operations	138,672	468	139,139
Prenger, Nathan	Sr Supvr Wildfire Security & Emerg Resp	101,623	1,159	102,782
Puskas, Dale	Manager, Capital Projects	75,192	-	75,192
Quan, Carson	Network Analyst	116,688	50	116,738
Quayle, Kristin	Information Technician 3	78,820	111	78,931
Ranns, John T.	PRV/CV Mechanic	94,063	1,835	95,898
Reed, Michael	Facility Maintenance Worker (Aux)	78,002	-	78,002
Rees, Pat	Utility Operator Team Lead	104,635	213	104,848
Reimer, Jonathan	Manager Electoral Area Fire & Emerg Prgs	126,932	3,902	130,835
Reimer, Matthew	Field Supervisor Wastewater Operations	120,617	6,994	127,611
Richards, Colin	Watershed Operator/Equipment Operator	75,842	-	75,842
Rilkoff, Jeremiah (Jeremy)	Senior Financial Advisor	77,236	1,091	78,327
Robbins, Ted	Chief Administrative Officer	243,128	1,739	244,866
Roberts, Alison	Information Technician 5	88,485	2,151	90,636
Robertson, Marie	Senior Supervisor, Watershed Operations	111,210	1,216	112,426
Robson, Dan	Manager, Saanich Pen. & Gulf Islands Ops	126,932	1,176	128,109
Roy, Stephen	PRV/CV Mechanic	94,888	258	95,146
Rudolph, Barri-Lynn	Environmental Science Officer 2	83,220	122	83,341
Ruljancich, Shane A	Chief Draftsperson	94,335	374	94,709
Ryan, Barry	Engineering Technician 5	90,208	1,122	91,330
Salter, Brandon	Utility Operator Team Lead	119,821	1,189	121,010
Sandhar, Amrit	Engineering Technician 5	100,489	1,107	101,596
Saprunoff, Dan	Environmental Science Officer 2	83,220	-	83,220
Say, Kimberly	Recreation Program Coordinator 3	79,140	32	79,172
Scaber, Todd	Manager Water Distribution Operations	126,941	1,467	128,408
Scharbach, David	Manager Telecommunications & Automation	124,830	909	125,739

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Scheuer, Darren	Electronics Technologist	120,047	664	120,711
Schoening, Debbie	Financial Analyst 3	79,722	7	79,729
Schubert, Dan	Maintenance Worker Depot	85,998	2,201	88,200
Scott, Sharon	Engineer 4	106,391	692	107,083
Semmens, Benjamin	Manager Financial Planning & Performance	135,711	2,933	138,644
Shannon, Todd	Park Operations Supervisor	120,961	1,541	122,502
Sharp, Allison	Manager, Administrative Services	110,531	998	111,529
Shaw, Ryan	Systems Officer	118,475	2,511	120,986
Sheppard, Rodney K	Utility Operator 4	132,155	1,736	133,891
Shoemaker, Robert D	Environmental Science Officer 1	78,173	1,580	79,753
Shuck, Robert	Environmental Science Officer 3	95,926	1,662	97,588
Simmons, Nicholas	Utility Operator 2	76,342	205	76,548
Sinclair, Emily	Sr Manager Regional & Strategic Planning	165,031	942	165,973
Sladen, Trevor	Utility Operator 4	101,185	995	102,180
Smart, James O.S.	Utility Operator Team Lead	109,147	116	109,263
Smith, Russ	Senior Manager, Env. Resource Management	169,611	2,113	171,724
Smith, Vince	Industrial Mechanic	100,600	983	101,583
Smithson, Michael	Electrician 3	108,084	290	108,374
Smits, Diana	Payroll Coordinator	75,248	-	75,248
Sneek, Jeff	Welder	95,097	238	95,335
Sneek, Lisa J	Recreation Program Coordinator 2	73,523	1,835	75,358
Solomon, Marc	Park Operations Supervisor	124,535	6,197	130,731
Starke, Justine	Manager SGI Service Delivery	120,595	5,363	125,958
Stephens, Patrick	Engineer 5	94,189	2,405	96,595
Stock, Mary	Manager, Human Resources	135,702	876	136,578
Storie, Rob	Building Services Coordinator	135,542	1,831	137,372
Stott, Brad	Utility Operator 4	89,580	1,101	90,681
Stott, Tara	Environmental Analyst	78,632	132	78,764
Sturdy, Luke	Local Utility Operator Team Leader	143,416	1,519	144,935
Sunshine, Michael	Manager Corporate Fleet	126,941	174	127,114
Swan, Ryan	Utility Operator Team Lead	121,466	760	122,226
Taggart, Colette	Environmental Science Officer 2	83,183	225	83,408
Tates, Ron	Field Supervisor Mechanical	76,540	176	76,716
Taylor, Emma	Planner	82,470	3,959	86,430
Taylor, Michael	Manager Building Inspection	134,735	995	135,730
Taylor, Teresa M	Maintenance Management Coordinator	83,976	-	83,976
Tejeda, Alejandro	Senior Developer Analyst	94,642	-	94,642
Teschke, Kyle	Engineer 5	97,764	1,480	99,244
Thomson, James	Senior Project Coordinator	76,011	453	76,464

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Tokgoz, Genevieve	Engineer 5	98,687	4,889	103,576
Tokgoz, Natalie	Manager Water Distrib Eng & Planning	100,709	2,315	103,024
Tradewell, Kelly	Environmental Science Officer 4	92,768	675	93,443
Trent, Lorna	Manager, IT Projects	113,526	2,407	115,933
Tromp, Melanie	Information Technician 5	82,114	-	82,114
Tworuschka, Dylan	Utility Operator 3	78,856	2,265	81,122
Tyler, Jennifer	Environmental Science Officer 3	92,763	92	92,855
Urbanoski, Michael Max	Integrated O&M Planner and Scheduler	101,169	5,097	106,266
Urquhart, Tracy	Information Technician 5	79,725	385	80,109
Ussery, Joel	Manager Resource Planning	135,629	1,146	136,775
Van Buskirk, Amanda	Human Resources Advisor	85,053	2,074	87,126
Van Niekerk, Jan D	Sr Manager Customer & Technical Services	156,941	848	157,788
Vernon, Leona (Caitlyn)	Manager First Nations Relations	127,857	1,437	129,294
Villers, Timothy	Caretaker	73,475	3,190	76,665
Walsh, Stuart	Parks Operations Supervisor	112,006	5,186	117,192
Wang, Robin	Field Supervisor SCADA & Controls	136,969	916	137,885
Ward, Cameron	Park Maintenance Worker 5	75,943	1,676	77,619
Watkins, Tom	Manager Solid Waste Operations	126,941	830	127,771
Watson, Christopher	Building Inspector 2	82,919	2,288	85,207
Watson, Jody L	Environmental Science Officer 4	100,440	1,729	102,169
Watts, Catherine	Aquatic Programs Worker (Aux)	74,481	1,883	76,364
Way, Mark	Facility Maintenance Supervisor	110,901	51	110,952
Weaver, Mike	Field Supervisor Water Treatment Ops	156,933	882	157,815
Wechselberger, Paul	Administrative Clerk 2	79,569	2,853	82,422
Weihing, Doug	Engineering Technician 3	88,485	901	89,385
Werfl, Bryan	Equipment Operator 3	79,938	150	80,088
West, Adam	Facility Maintenance Worker 4	86,304	654	86,958
Westinghouse, Laurel	Senior Financial Advisor	103,080	1,235	104,315
Whipp, Chaz	Manager, Facilities	126,932	3,458	130,390
Whipps, Steven	Field Supervisor Water Operations	137,067	2,180	139,247
Wicker, Brett K	Facility Maintenance Worker 4	75,393	1,867	77,259
Wiebenga, Harry (Ian)	Manager Project Engineering	140,682	1,033	141,716
Williams, Janice	Manager Occupational Health and Safety	123,647	3,427	127,073
Wilson, Kristi D	Demand Management Coordinator	88,594	431	89,025
Wilson, Lynn	Planner	94,564	4,136	98,700
Wood, Sophie	Information Technician 3	78,173	45	78,218
Woodsend, Cameron	Equipment Operator 3	78,752	-	78,752
Wu, Pei (Emma)	Financial Advisor	101,195	6,909	108,104
Wyatt, Trevor	Water Maint Op 4/Heavy Duty Equip Op	100,481	434	100,916

Schedule of Remuneration & Expenses: Employees continued

Name	Position	Salary	Expenses	Total
Wyman, Brent	Recreation Program Coordinator 2	77,301	2,228	79,529
Xu, Liaoxin	Manager Financial Services	129,907	1,640	131,547
Zhang, Yong (Garrett)	Electronics Technologist	109,345	209	109,553
Zou, Bing	Financial Analyst 2	78,100	1,615	79,715
Total of Employees with remuneration of \$75,000 or more		\$ 42,464,671	\$ 590,278	\$ 43,054,950
Total of Employees with remuneration of \$75,000 or less		\$ 25,272,031	\$ 201,475	\$ 25,473,505
Total Employee Remuneration		\$ 67,736,702	\$ 791,753	\$ 68,528,455

Capital Regional District

Schedule of Remuneration & Expenses: Directors & Alternate Directors

For the year ended December 31, 2022

Name	Position	Salary	Allowances	Expenses	Total
ALTO BOND, MARIANNE	Board Director, Victoria	\$ 2,656	\$ 888	\$ -	\$ 3,543
ARMOUR, KENNETH	Board Director, Esquimalt	440		-	440
BATEMAN, JEFF	Alternate Director	1,650		-	1,650
BLACKWELL, DENISE	CRHD Chair	21,302	10,651	81	32,033
BRAITHWAITE, HAZEL	CRHD Chair	220		-	220
BRENT, PAUL	Board Director, SGI EA	28,139	12,695	86	40,920
BRICE, SUSAN	Board Director, Saanich	19,577	9,734	81	29,392
BROWNOFF, JUDITH	Board Director, Saanich	2,106	888	-	2,993
CARADONNA, JEREMY	Board Director, Victoria	1,776	888	-	2,663
COLEMAN, CHRISTOPHER	Board Director, Victoria	1,776	888	-	2,663
DE VRIES, ZAC	Board Director, Saanich	2,958	1,149	-	4,107
DESJARDINS, BARBARA	Board Director, Esquimalt	21,184	10,592	81	31,857
GOODMANSON, SCOTT	Board Director, Langford	1,776	888	-	2,663
HAYNES, FREDERICK	Board Director, Saanich	16,436	7,943	-	24,379
HELPS, LISA	Board Director, Victoria	17,692	8,846	81	26,618
HICKS, MIKE	Electoral Area Director - JDF	42,785	20,677	612	64,074
HOLMAN, GARY	Board Director, SSI EA	44,668	22,334	1,500	68,502
HOWE, DAVID	Electoral Area Director - SGI	19,154	9,577	-	28,731
ISITT, BENJAMIN	Board Director, Victoria	16,876	7,943	-	24,819
JONES, PETER	Board Director, North Saanich	1,776	888	-	2,663
KOBAYASHI, DOUGLAS	Board Director, Colwood	1,886	888	-	2,773
LITTLE, MARIE TERESA	Board Director, Metchosin	1,776	888	-	2,663
LOVEDAY, JEREMY	Board Director, Victoria	18,462	8,846	-	27,308
MARTIN, ROBERT	Board Director, Colwood	15,996	7,943	81	24,020
MCNEIL SMITH, CLIFF	CRHD Acting Chair	19,990	9,995	81	30,065
MERSEREAU, REBECCA	CRD Board Vice Chair	21,962	10,651	123	32,735
MURDOCH, KEVIN	CRHD Chair	19,990	9,995	81	30,065
MURDOCK, DEAN	Board Director, Saanich	1,886	888	-	2,773
ORR, GEOFF	Board Director, North Saanich	15,886	7,943	81	23,910
PLANT, COLIN	CRD Board Chair	34,826	17,358	2,522	54,706
POTTS HALPIN, SARAH	Alternate Director	330		-	330
RANNS, JOHN	Board Director, Metchosin	15,886	7,943	-	23,829
SAHLSTROM, MATT	Alternate Director	440		-	440
SCREECH, DAVID	Board Director, View Royal	17,692	8,846	81	26,618
SEATON, LANNY	Board Director, Langford	15,886	7,943	-	23,829
STOCK, CELIA	Alternate Director	550		-	550
SZPAK, LILLIAN	Board Director, Langford	2,986	888	81	3,954
TAIT, MAJA	CRD Board Vice Chair	19,990	9,995	373	30,357
TAYLOR, EDWARD (NED)	Board Director, Saanich	16,656	7,943	117	24,716

Capital Regional District

Schedule of Remuneration & Expenses: Directors & Alternate Directors

For the year ended December 31, 2022

Name	Position	Salary	Allowances	Expenses	Total
THOMPSON, DAVID	Board Director, Victoria	1,776	888	-	2,663
TOBIAS, DAVID SID	Board Director, View Royal	1,776	888	-	2,663
WICKHEIM, MICHAEL	Board Director, Jdf EA	5,989	2,995	-	8,984
WILLIAMS, KENNETH	Board Director, Highlands	17,772	8,831	122	26,724
WINDSOR, RYAN	Board Director, Central Saanich	17,662	8,831	-	26,493
YOUNG, GEOFFREY	Board Director, Victoria	16,546	7,943	40	24,529
Total		\$ 569,537	\$ 276,796	\$ 6,302	\$ 852,635

Capital Regional District

Schedule of Remuneration & Expenses: Committee & Commission Members

For the year ended December 31, 2022

Name	Position	Salary	Allowances	Expenses	Total
BAIRD, GORDON	Water Commission	\$ 440	\$ 220	\$ -	\$ 660
CHAMBERS, NATALIE	Water Commission	367	183	-	550
DUBOW, SHARMARKE	Water Commission	440	220	-	660
DUNCAN, SARA	Water Commission	513	257	-	770
GRAHAM, CHRISTOPHER	Water Commission	1,027	513	-	1,540
HARPER, KAREN	Water Commission	1,393	697	-	2,090
JENSEN, STANLEY	Land Use Committee	440	220	-	660
KAHAKAUWILA, KYARA	Water Commission	440	220	-	660
LOGAN, GORDIE	Water Commission	367	183	-	550
MCCONNELL, VERNON	Land Use Committee	440	220	227	887
MCINTYRE, ROY	Land Use Committee	587	293	-	880
MORRISON, TIMOTHY	Water Commission	440	220	-	660
PATERSON, ESTHER	Water Commission	73	37	-	110
RAMSAY, RONALD	Land Use Committee	513	257	-	770
RISVOLD, DALE	Land Use Committee	440	220	-	660
ROGERS, JOHN	Water Commission	513	257	-	770
SINCLAIR, GEORGE (SANDY)	Land Use Committee	587	293	-	880
ST PIERRE, MARCEL (TONY)	Water Commission	220	110	-	330
WADE, ROGER	Water Commission	513	257	-	770
ZHELKA, ERIC	Water Commission	440	220	-	660
Total		\$ 10,193	\$ 5,097	\$ 227	\$ 15,517

Capital Regional District

Severance Agreements

For the year ended December 31, 2022

There were no severance agreements under which payment commenced between the Capital Regional District and its non-unionized and unionized employees during fiscal year 2022.

Capital Regional District

Schedule of Payments to Suppliers for Goods and Services

For the year ended December 31, 2022

Vendor	Total
0848631 Bc Ltd.	\$ 297,884
0950119 Bc Ltd	49,426
6362222 Canada Inc.	35,280
661314 B.C. Ltd.	84,745
Absolute Energy Inc.	161,483
Accent Refrigeration Systems	28,114
Acklands - Grainger Incorporated	273,670
Acme Supplies Limited	150,011
Advance Tank Centres Ltd.	25,834
Aecom Canada Ltd.	635,914
Alexander Holburn Beaudin	108,995
Allegro Performing Arts Centre	36,265
Alpha Roofing & Cladding Inc	168,566
Als Canada Ltd	51,148
Alumichem Canada Inc	67,460
Amazon	142,060
Andrew Sheret Limited	355,619
Aon Reed Stenhouse Inc.	1,548,771
Apex Steel & Gas Limited	99,339
Apple	76,650
Aqua Irrigation	42,316
Aral Construction (2014) Ltd.	614,058
Arcadis Canada Inc	173,487
Archie Johnstone Plumbing & Heating	157,399
Archipelago Marine Research Ltd	109,530
Arctic Decorating Inc.	153,385
Arrive Consulting	62,685
Associated Engineering (Bc) Ltd	338,416
Associated Fire Safety Equipment	44,843
A-Tech Doors Inc.	69,524
Atlantic Industries Limited	52,686
Aura Cabinet Works Limited	229,949
Aurum Property Care	43,071
Automated Aquatics Canada Ltd.	326,230
Avensys Solutions Inc	100,206

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Axis Mountain Technical Inc.	332,082
Bartlett Tree Experts	159,331
Basic Rock Products Limited	126,758
Bayshore Home Health	31,601
Bc Hydro	5,179,004
Bc Sustainable Energy Association	37,525
Bc Transit	460,872
Beacon Community Association	291,621
Beaver Electrical Machinery Ltd.	54,635
Bee-Clean Building Maintenance Inc	862,754
Bell Media Inc.	31,483
Ben Patterson	103,443
Ben Symons	34,248
Best Buy	28,597
Big Digem Excavating Ltd	32,816
Biomerieux Canada Incorporated	75,575
Black Press Ltd	158,791
Black Tie Property Services	28,938
Boleyn Media Group Inc.	42,215
Brenntag Canada Incorporated	1,528,925
Brent Jansen Plumbing	384,335
Brigitte Prochaska	67,830
British Columbia Ferry Services	59,502
Bruce A. Hampson	46,337
Bry Sand Ice Arena Ltd.	359,201
Bullet Security Cameras, Inc	66,359
Bullfrogcontrol.Com Inc	85,000
Bunzl Cleaning & Hygiene	78,583
Bureau Veritas Canada (2019) Inc.	455,440
Burnside Gorge Community Association	76,707
Butler Brothers Supplies Ltd	90,836
Caird Mechanical Contractors	281,697
Calian Ltd.	38,270
Canadian Linen Supply	70,717
Canadian Springs	74,349

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Canadian Tire	71,883
Canreal Management Corporation Itf	59,229
Cansel Survey Equipment Inc.	39,811
Capital City Paving Limited	766,478
Carrina Maslovat	29,184
Cascadia West Contracting Ltd.	1,974,089
Cb Process Instrumentation	55,920
Cbs Electrical Contractors Ltd.	33,309
Cdw Canada	453,020
Ceangal Professional Consulting, In	212,468
Centralsquare Canada Software Inc.	99,739
Centrix Control Solutions Limited	113,770
Chartech Solutions	75,188
Charter Telecom Inc.	300,486
Chris Vrabel	66,471
Cimco Refrigeration	60,837
Cirro Creative Inc.	34,466
City Green Solutions	78,466
City Of Colwood	57,434
City Of Langford	1,651,618
City Of Nanaimo	31,219
City Of Victoria	2,033,384
Clarke Engineering & Welding Ltd	27,085
Clear Sky Consulting Ltd.	27,300
Coast Utility Contracting Ltd	3,740,080
Coastal Green & Clean	60,052
Colquitz Engineering Ltd	269,601
Columbia Fire & Safety Limited	29,001
Columbia Fuels	265,557
Columbia Promotions	235,912
Community Energy Association	29,765
Community Social Planning Council	398,763
Copcan Civil LP	135,414
Cornerstone Youth Society	37,158
Corrosion Service Company Limited	63,087

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Corvidae Environmental Consulting	33,765
Cottam Enterprises Ltd.	39,271
Cowichan Valley Regional District	62,400
Cp Code Consultants Ltd	36,076
Crest Inc	1,626,225
Crystal Blue Pool Services	65,231
Cummins Western Canada	25,777
Cupe Local 1978	876,132
D B Birch Ltd.	43,952
D. Clark Arboriculture	27,081
Da Silva Garden & Landscaping	44,735
Dacan Plumbing	150,065
Darktrace Holdings Limited	29,752
Datatrain Analytics Inc.	100,485
David Babbage	37,195
Davis Controls	45,000
Dawn Larden	28,457
Depend-A-Dor Repairs & Installation	52,808
Derek Ford Studios	53,996
Devon Transport Ltd.	56,831
Dhkarchitects Inc.	212,439
Diamond Head Consulting Ltd.	62,274
District Of Central Saanich	1,066,507
District Of Metchosin	31,165
District Of North Saanich	344,269
District Of Saanich	7,128,774
District Of Sooke	32,780
DI'S Bins Ltd	2,609,216
Don Mann Excavating Limited	41,709
Downs Construction Limited	250,351
Downtown Appliance Repair	29,158
Durwest Construction Limited	7,845,020
Dynamic Specialty Vehicles	137,141
E B Horsman & Son	80,899
E.H. Emery Electric Ltd.	679,459

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Ecofish Research Ltd.	38,075
E-Comm, Emergency Communications	369,758
Eecol Electric Corp.	37,964
Ellice Recycle Limited	71,432
Em2 Management Solutions, Inc.	64,420
Emco Corporation	1,117,344
Emterra Environmental	5,334,981
Engineered Pump Systems Ltd	76,721
Engineering For Kids	26,476
Engineers And Geoscientis	29,049
Ernst & Young LLP	64,983
Esc Automation Incorporated	34,079
Esri Canada Limited	105,332
Evolve Engineering Inc.	37,826
Evoqua Water Technologies Ltd	204,485
Excel Contracting Limited	114,174
Fibre Tech Carpet Care Ltd.	37,936
Finishing Touch Painting Ltd	40,348
Fining (Canada)	431,216
First National Financial Lp	154,000
Fisher Scientific Co.	62,394
Fitness Experience	29,614
Five Star Paving Company	266,727
Fix Auto Collision Westshore	73,185
Flagtrux Traffic Control	344,139
Flynn Canada Limited	131,058
Footprints Security Patrol Ltd	88,253
Foreman Equipment Ltd.	29,120
Forest Technology Systems	48,191
Fortis Bc-Natural Gas	496,478
Fountain Tire	127,747
Four Star Waterworks Limited	564,861
Fournier Industries Inc	204,400
Fred Surridge Limited	70,084
Frontline Machinery Ltd.	39,844

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
G&E Contracting L.P.	1,053,719
Galaxy Motors	65,948
Garden City Tree And Landscape Ltd.	210,291
Generous Forest Services	26,671
Geoadvice Engineering Inc.	41,918
Geocycle Canada Inc.	26,021
Georgeson Tug Ltd	32,357
Geo-Tech Industries Inc	37,409
Gescan - Division Of Sonepar	41,256
Gfl Environmental Inc	1,380,478
Ghd Limited	87,828
Glass-Smith & Company Limited	34,845
Glave Strategies	49,244
Global Industrial Canada	39,213
Goldstream Rock Products Ltd	32,944
Goodaswood Tree Care	87,959
Gord Brohman	76,139
Grand & Toy	50,922
Granicus Inc.	52,535
Graphic Office Interiors Limited	731,819
Greater Victoria Labour Relations	219,555
Greatpacific Consulting Ltd	325,512
Green Line Hose & Fittings Ltd	41,225
Green Roots Play Equipment Inc.	271,524
Greenlight Ventures Ltd	34,370
Gregg Distributors Lp	147,519
Griff'S Lawn & Garden Care	25,512
Guillevin International Co.	160,458
Gulf Islands Septic Limited	71,742
Gulf Pacific Itf - Creekside Mall	47,021
Gunnebo Canada Inc.	96,749
Gvlra/Cupe Long Term Disablility	1,044,169
Gw Solutions Inc.	28,658
H.L. Demolition & Waste Management	88,163
H.Y. Engineering Ltd.	52,645

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Hach Sales & Service Canada Ltd	118,688
Harbour Resource Partners LP	1,469,600
Hardal Management Inc.	50,779
Harris Victoria	190,336
Hartland Renewable Resources	2,520,794
Hartland Resource Management General	9,183,421
Hatch Ltd	128,023
Hazmasters Inc.	117,395
Hdr Corporation	74,069
Heightsafe Fall Protection Systems	130,347
Hodge Podge Contracting	44,444
Hoel Contracting Ltd.	531,782
Home Depot Credit Services	37,302
Hootsuite Inc.	27,711
Hoskin Scientific Limited	35,904
Houle Electric Limited	226,751
Hughes Painting	95,369
Iconix Waterworks LP	778,962
Inclusive Excellence Strategy	27,118
Indigenous Perspective Society	70,600
Industra Construction Corp	7,237,371
Industrial Scaffold Services L.P.	82,642
Infosat Communications LP	32,567
Info-Tech Research Group Inc.	89,646
Innov8 Digital Solutions Inc	139,111
Innovyze Inc.	26,967
Insurance Corporation Of BC (ICBC)	263,606
Intact Insurance Company	54,543
Integral Group Consulting (Bc) LLP	37,441
Isco Canada Inc	30,352
Isl Engineering And Land Services	111,319
Island Asphalt Company	126,998
Island Floor Centre Ltd	194,927
Island Junk Solutions Ltd	32,088
Island Key Computer	26,669

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Island Key Computer Limited	1,156,658
Island Pro Homes Ltd	144,105
Island Scales Limited	55,677
Island Temperature Controls Ltd	145,718
Island Tractor & Supply (Canada) Ltd	37,729
Island Window Coverings Limited	75,468
Islandearth Landscape Services Ltd.	439,415
Iwa - Fi Pension & Ltd Plans	228,081
J J Plumbing & Heating	27,915
Jacob Bros. Construction Inc.	5,205,947
Jawl & Bundon In Trust	359,401
Jawl & Bundon LLP	27,922
Jemma Scoble Consulting	65,691
Jenkins Marine Ltd	158,904
Jenner Chevrolet Buick Gmc	111,660
Jesse Brown	32,870
Joe Newell Architects	77,239
John Brooks Company Limited	27,499
John Howard Society Of Victoria	103,603
John Mccrea	82,325
John Wakefield	52,375
Jumelle Consulting Inc.	136,395
Kaeser Compressors Canada Inc.	91,939
Kal Tire	26,954
Kenaidan Contracting Ltd	4,153,551
K'Enes Transportation LLP	444,526
Kerr Wood Leidal Associates Ltd	453,456
Key-2 Auto Parts & Engine Rebuilder	40,491
Kirk & Co. Consulting Ltd	44,313
Klohn Crippen Berger Ltd.	85,708
Kms Tools	34,195
Kms Tools & Equipment Ltd.	61,963
Knappett Projects Inc.	1,315,535
Kone Inc	41,882
KPMG LLP	385,377

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Ksb Pumps, Inc	97,941
Kti Limited	742,085
Lawson Lundell LLP	80,523
Lifestyle Equipment	51,014
Littluniverse Education	35,609
Lordco Auto Parts Ltd	36,106
Low Hammond Rowe Architects	157,310
M & L Painting Ltd	82,436
M3 Mechanical Consultants Inc	44,234
Mac'S Heating Limited	34,372
Madrone Environmental Services Ltd	36,198
M'Akola Housing Society	1,142,880
Mancorp Industrial Sales Ltd	62,214
Manulife Canadian Pooled Real Estat	280,248
Manulife Financial Group Benefits	384,852
Marsh Canada Limited	2,720,052
Mayne Island Recycling Society	77,673
McElhanney Associates Land	102,314
McElhanney Ltd	785,032
Mcrae'S Environmental Services	626,192
Meadows Development Ltd	47,437
Melody Pender	40,694
Mfr Resolutions Consulting Corp	32,099
Mica Controls Ltd - Bc	37,916
Michael Carrothers	67,739
Michael Vernon	118,844
Microserve	39,354
Microsoft Licensing, Gp	502,766
Milestone Equipment Contracting Inc	140,610
Milner Group Ventures Inc.	88,645
Minister Of Finance	914,470
MNP LLP	78,645
Modern Maintenance	87,864
Molly Black	34,666
Monika Burrell	26,438

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Monk Office	154,829
Mr. Plow Snow Removal Services	90,435
N & N Courier	57,691
Nac Constructors Ltd	2,060,742
Namaste Janitorial Service Inc.	50,385
National Car And Truck Rentals	116,304
Nautilus Environmental	50,495
New Line Hose & Fittings	66,818
North Salt Spring Waterworks	237,169
North West Environmental Group Ltd	93,735
Northwest Fencing Ltd	33,434
Northwest Hydraulic Consultants	317,945
Norton Rose Fulbright Canada LLP	73,648
Number Ten Architectural Group	67,362
Olio Technology Solutions	132,064
On The Island Bath Liners Ltd	133,182
On-Line Ventures Inc	53,714
Onyx Environmental Ltd.	378,000
Optrics Inc	40,279
Orca Health & Safety Consulting Inc	31,800
Orkin Canada Corporation	101,050
Osborne Electro-Mechanics Ltd	96,662
P & R Truck Centre Ltd.	27,018
Pacific Archery Academy	55,530
Pacific Audio Works Ltd.	38,136
Pacific Blue Cross	2,483,312
Pacific Coast Fire Equipment (1976)	125,155
Pacific Flow Control Ltd	52,058
Pacific Gateway Marina	53,623
Pacific Industrial & Marine Ltd.	616,009
Pacific Northwest Raptors	184,894
Paladin Security Group Ltd	253,189
Paradigm Software LLC	113,262
Parsons Inc.	89,685
Pbx Engineering Ltd	94,048

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Pender Islands Fire Protection	44,494
Pender Islands Health Care Society	211,051
Pender Islands Recreation &	25,225
Peninsula Consumer Services Co-Op	55,592
Perfectmind Inc.	56,756
Pete'S Haul A Day	28,387
Pinton Forrest & Madden Group Inc.	102,502
Planetworks Consulting Corporation	28,513
Polaris Land Surveying Inc.	25,295
Power Systems Plus Inc.	30,502
Prairiecoast Equipment Inc.	70,025
Price'S Alarm Systems Ltd.	76,524
Prices Lock & Safe	65,771
Primoris Facilities (Candad) LP	125,000
Prism Engineering Ltd.	49,928
Protelec Security & Safety Ltd	68,295
Psm Safety Ltd.	347,524
Puma Utility Monitoring Inc	38,115
Qca Systems Ltd.	41,885
Qit Canada Inc.	179,200
Quadient Canada Ltd.	156,872
R & L Concrete Coring Limited	47,899
R A Malatest & Associates Ltd	352,577
Radio Works	62,178
Ralmax Contracting Ltd	2,962,763
Ramida Enterprises Ltd.	182,697
Ramtech Environmental Products	144,943
Rapid Plumbing & Heating	32,929
Rcu Auto Parts Ltd.	51,975
Re Anderson Contracting Ltd.	48,572
Read Jones Christoffersen Ltd	42,765
Receiver General For Canada	9,318,627
Reshape Infrastructure Strategies	90,063
Richard M Delaney And Associates	41,771
Rival Rooter	37,013

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Roadmasters Safety Group	28,744
Rob Syverson	68,564
Robbins Parking	40,002
Robbins Parking Service Ltd	237,482
Rocky Mountain Phoenix Inc.	140,578
Rogers	291,167
Rogers Wireless	35,573
Rolling Tides Construction Inc.	38,403
Routeware Inc.	29,008
Royal Roads University	129,552
Rtm Masonry (2022) Ltd.	53,480
Rural Islands Economic Partnership	33,538
Ryzuk Geotechnical	57,565
Salt Spring Arts Council	35,292
Salt Spring Island Search And Rescu	25,482
Sandy Dawn Bath	28,674
Sap Canada Inc	777,598
Saturna Community Club Recycling	38,945
Saturna Island Medical Clinic	32,890
Save-On-Septic Services Inc	148,239
Scansa Construction Ltd	86,751
Scg Process	341,563
School District #63 (Saanich)	32,693
School District #64 (Gulf Islands)	30,004
Scho'S Line Painting Ltd.	29,172
Schwartz Consulting Inc.	41,875
Sea-Bird Electronics Incorporated	33,493
Seca Marine Inc.	61,542
Seismic 2000 Construction Ltd	32,194
Serio Consulting	160,422
Sfc Energy Ltd.	161,219
Sgi Community Resource Centre	110,332
Sgs Axys Analytical Services Ltd	142,313
Shades Tankers (1976) Ltd	26,856
Shaw Cablesystems Gp	159,619

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Sidelines Promotional Products Inc.	80,274
Simpson Controls Ltd	53,942
Slegg Building Materials	108,587
Snc Lavalin Inc.	32,433
Softchoice LP	262,216
Solid Soil Solutions Ltd.	47,048
Solidcad	25,284
Sooke Backhoe Services Ltd.	45,799
Sooke Cabinet Refacing Ltd.	25,622
Sooke Community Association	73,505
Sooke Shelter Society	63,816
Sooke Slinger Service Ltd	333,691
Sorensen Trilogy Structural	32,427
Source EnviroSolutions	32,692
Southern Gulf Islands Tourism	43,938
Southpoint Partners Ltd	34,903
Spartan Controls Ltd	25,821
Sperling Hansen Associates	149,912
Spr Traffic Services LP	74,919
Sprung Instant Structures Limited	52,147
Stantec Consulting Limited	1,751,317
Staples	45,590
Stericycle Ulc	25,122
Stewart Mcdannold Stuart	244,858
Stewart Mcdannold Stuart In Trust	3,122,662
Streamline Fencing Ltd.	325,268
Suburban Motors	29,148
Suez Water Technologies	356,694
Summit Valve And Controls Inc.	164,804
Sunbelt Rentals, Inc	121,643
Suncor Energy Products	306,947
Superior North America Inc.	65,310
Surespan Construction Ltd.	269,950
Sylvis Environmental Service Inc	28,977
Synergy Enterprises	33,994

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Td Canada Trust	115,596
Tech Mechanical Systems Limited	26,040
Technical Safety Bc	46,513
Telus	895,928
Tetra Tech Canada Inc	82,278
The Ame Consulting Group	62,658
The Appian Way Traffic Data Service	43,134
The Home Depot	54,361
The Salvation Army Nro Thrift Store	38,022
The University Of British Columbia	55,857
The Victoria Youth Clinic Society	37,056
Thurber Engineering Ltd.	268,140
Times - Colonist	78,815
Top Line Roofing Ltd	74,719
Tower Fence Products Limited	121,667
Town Of View Royal	40,914
Township Of Esquimalt	259,082
Tractor Time Equipment	39,238
Trafx Research Ltd.	25,200
Trail Appliances Ltd.	111,997
Trail Holistics Inc.	26,351
Trane Canada Ulc	801,112
Transition Salt Spring Society	26,000
Triahn Enterprises (2018) Ltd.	289,638
Trimble Europe B.V.	66,843
Triway Seniors Housing Ltd.	15,799,007
Tri-X Excavating Ltd.	710,924
Trustees Of The Usw-Coastal Forest	26,567
Tsawout First Nation	100,407
T'Sou-Ke Nation	32,690
Uline Canada Corporation	113,515
Unified Alloys	61,194
Unitech Construction Management Ltd	3,221,769
United Steelworkers, Local 1-1937	27,946
Univar Canada Ltd	33,771

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
University Of Victoria	101,250
University Of Waterloo	25,000
Van Isle Water	35,914
Van Isle Water Services Limited	70,685
Vancouver Island Health Authority	178,150
Veolia Water Technologies Canada In	38,996
Vi Rentals Ltd.	52,353
Victoria Arts Council	30,000
Victoria Drain Services Ltd	47,207
Victoria Flying Club	67,231
Victoria Mobile Radio Limited	1,049,712
Victoria Pest Control Ltd.	42,619
Victoria Playco Installations	47,460
Victoria Waterjet Ltd.	28,109
Vimar Equipment Ltd	297,325
Vissers Sales Corp	45,130
Vizio Consulting Inc.	156,713
Vwr International Co	61,623
Waste Connections Of Canada Inc	72,463
Waste Management	314,160
Waste 'N Watertech Ltd	131,519
Waterhouse Environmental Services	86,442
Watt Consulting Group	125,911
Wayne'S Tractor Services	100,947
We Consultants & Benefits	44,402
Wesco Distribution Canada LP	269,413
West Bay Mechanical Limited	64,878
West Coast Circuits Limited	141,175
West Coast Cranes Inc.	70,704
West Coast Elevator Services Ltd.	62,434
West Shore Environmental Services	121,722
West Shore Mechanical	111,721
Westbrook Consulting Ltd	49,208
Westburne West	102,440
Western Compensation	37,608

Schedule of Payments to Suppliers for Goods & Services continued

Vendor	Total
Western Equipment Ltd	46,350
Western Tank & Lining Ltd	26,880
Western Water And Gas Products	67,481
Westerra Equipment	32,022
Wex Canada Ltd.	435,977
Wholesale Fire & Rescue Limited	42,642
Williams Engineering	66,348
Wilson'S Transportation Ltd	29,045
Wiser Projects Inc.	58,144
Wsa'Nec' Leadership Council	62,562
Wsp Canada Inc	205,338
Z-Card Canada	27,784
Zoho Canada Corporation	31,002
Total of aggregate payments exceeding \$25,000	\$ 189,560,784
 Consolidated total of payments of \$25,000 or less	 \$ 11,427,561
Consolidated total of grants exceeding \$25,000	4,385,668
Consolidated total of contributions exceeding \$25,000	4,498,244
Consolidated total of grants and contributions exceeding \$25,000	\$ 8,883,912
 Total Payments	 \$ 209,872,256

Schedule of Payments to Suppliers for Goods & Services continued

<u>Reconciliation to Financial Statements</u>	<u>Amount</u>
Total expenses per PSAB Financial Statements	\$ 259,294,657
Items included for SOFI, excluded in PSAB FS:	
Total Capital Acquisitions	101,769,168
P3 Interest	3,745,227
GST rebates/ITCs (vendor totals inclusive of GST)	6,283,606
Items Included in Financial Statements, excluded in SOFI Schedule:	
Payroll	- 73,911,541
Amortization expense	- 61,321,414
Debt payments: member municipalities and other	- 17,731,457
Loss on sale of assets	- 810,075
Other Non Cash Adjustments in Financial Statements, excluded in SOFI:	
Change in Prepads	68,409
Change in Inventory	- 232,377
Change in Accounts Payable and Accrued Liabilities	- 6,448,974
Change in Landfill Liability	- 758,385
Additional accrued purchase card transactions	81,581
Other	- 156,170
Total Expenses per Financial Statements adjusted for SOFI	\$ 209,872,256
Total Expenses recorded on Schedule of Goods & Services	\$ 209,872,256

Capital Regional District

Schedule of Guarantee & Indemnity Agreements

For the year ended December 31, 2022

NIL

The Capital Regional District has not given any guarantees or indemnities under the Guarantees and Indemnities Regulation.



| **Capital Regional District**

625 Fisgard Street
Victoria, BC V8W 2S6
250.360.3000

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Facebook: Capital Regional District

REPORT TO CAPITAL REGIONAL DISTRICT BOARD MEETING OF WEDNESDAY, JUNE 14, 2023

SUBJECT **Bylaw No. 4552: Land Assembly, Housing and Land Banking Loan Authorization - Revision**

ISSUE SUMMARY

To revise Bylaw No. 4552, "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023" to include a maximum term provision.

BACKGROUND

On May 10, 2023, Bylaw No. 4552, "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023", was read three times. This Bylaw authorized an increased maximum requisition of \$85 million for supporting future housing partnership opportunities and to further the CRD Board priority of increasing the supply of affordable, inclusive, and adequate housing in the region.

As part of the legislative process, it was submitted to the Inspector of Municipalities for review. The Province indicated the maximum borrowing term was missing from the Bylaw. A loan authorization bylaw must contain the maximum term for which the debentures may be issued, and requested Bylaw No. 4552 be amended to include the maximum term.

ALTERNATIVES

Alternative 1

1. That third reading of Bylaw No. 4552, "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023", be rescinded;
2. That Bylaw No. 4552 be amended as follows:
 - a. By renumbering section 2 to 3;
 - b. By inserting the following section in numerical order:

"2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is 30 years."
3. That Bylaw No. 4552 be read a third time as amended; and
4. That Bylaw No. 4552 as amended be referred to the Inspector of Municipalities.

Alternative 2

That this matter be referred to staff for further information.

IMPLICATIONS

The borrowing term is a legislative requirement for loan authorization bylaws. Without amending the bylaw to include the maximum borrowing term, the Inspector of Municipalities will not be able to approve the bylaw. A minor oversight in selecting the correct bylaw template caused the issue which can be easily fixed with the amendment noted above. This will not affect participant

approval timelines in any way.

CONCLUSION

Bylaw No. 4552 must be amended to include the maximum term of the loan provision as required by legislation.

RECOMMENDATION

1. That third reading of Bylaw No. 4552, “Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023”, be rescinded;
2. That Bylaw No. 4552 be amended as follows:
 - a. By renumbering section 2 to 3;
 - b. By inserting the following section in numerical order:

“2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is 30 years.”
3. That Bylaw No. 4552 be read a third time as amended; and
4. That Bylaw No. 4552 as amended be referred to the Inspector of Municipalities.

Submitted by:	Steven N. Carey, B.Sc, J.D., Senior Manager, Legal Services & Risk Management
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Bylaw No. 4552, “Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023” (as amended)

Appendix B: Bylaw No. 4552 (Redlined)

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4552

**A BYLAW TO AUTHORIZE THE BORROWING OF EIGHTY-FIVE MILLION DOLLARS
(\$85,000,000) FOR FUTURE HOUSING PARTNERSHIPS**

WHEREAS:

- A. By Supplementary Letters Patent, Division XII dated July 25, 1974, as amended by further Supplementary Letters Patent, the Capital Regional District was granted the function of Land Assembly, Housing and Land Banking which included the power to undertake land assembly for the purpose of housing, either public or private and, public housing pursuant to the provisions of the *National Housing Act*, the *Municipal Act*, the *Housing Act*, and other legislation pertaining to land assembly and public housing, as if the regional district were a municipality;
- B. Under Bylaw No. 3712, Land Assembly, Housing and Land Banking Service Establishment Bylaw No. 1, 2010, the Capital Regional District converted this to a service under the *Local Government Act* in all member municipalities and electoral areas (the "Service");
- C. It is deemed desirable to borrow additional funds in the amount of Eighty-Five Million Dollars (\$85,000,000) for the Service, which is the amount of debt intended to be authorized under this Bylaw, for use to support future housing partnership opportunities and advance the CRD Board priority of increasing supply of affordable, inclusive and adequate housing in the region;
- D. It is proposed that the financing is to be undertaken by the Municipal Finance Authority of British Columbia pursuant to proposed agreements between it and the CRD;
- E. Pursuant to Section 407 of the *Local Government Act*, participating area approval is required and shall be obtained in the municipalities by consent on behalf and in the electoral areas by Alternative Approval Process under Sections 345 and 346 of the *Local Government Act*; and,
- F. The approval of the Inspector of Municipalities is required under Section 403 of the *Local Government Act*.

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

- 1. The Board is hereby empowered and authorized to borrow upon the credit of the Capital Regional District a sum not exceeding Eighty-Five Million Dollars (\$85,000,000) for the purposes of Land Assembly, Housing and Land Banking, including to support future housing partnership opportunities and to increase supply of affordable, inclusive and adequate housing in the region, and do all things necessary in connection therewith and without limiting the generality of the forgoing, to acquire all such real property, easements,

rights-of-way, licenses, rights or authorities as may be requisite or desirable for or in connection with the Land Assembly, Housing and Land Banking Service.

2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is 30 years.
3. This Bylaw may be cited as the "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023".

READ A FIRST TIME THIS	— th	day of	_____	2023
READ A SECOND TIME THIS	— th	day of	_____	2023
READ A THIRD TIME THIS	— th	day of	_____	2023
ADOPTED BY THE INSPECTOR OF MUNICIPALITIES THIS	— th	day of	_____	2023
RECEIVED THE ASSENT OF THE ELECTORS THIS	— th	day of	_____	2023
ADOPTED THIS	— th	day of	_____	2023

CHAIR

CORPORATE OFFICER

APPENDIX B

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4552

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(\$85,000,000) FOR FUTURE HOUSING PARTNERSHIPS**

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- B. Under Bylaw No. 3712, Land Assembly, Housing and Land Banking Service Establishment Bylaw No. 1, 2010, the Capital Regional District converted this to a service under the *Local Government Act* in all member municipalities and electoral areas (the "Service");
- C. It is deemed desirable to borrow additional funds in the amount of Eighty-Five Million Dollars (\$85,000,000) for the Service, which is the amount of debt intended to be authorized under this Bylaw, for use to support future housing partnership opportunities and advance the CRD Board priority of increasing supply of affordable, inclusive and adequate housing in the region;
- D. It is proposed that the financing is to be undertaken by the Municipal Finance Authority of British Columbia pursuant to proposed agreements between it and the CRD;
- E. Pursuant to Section 407 of the *Local Government Act*, participating area approval is required and shall be obtained in the municipalities by consent on behalf and in the electoral areas by Alternative Approval Process under Sections 345 and 346 of the *Local Government Act*; and,
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rights-of-way, licenses, rights or authorities as may be requisite or desirable for or in connection with the Land Assembly, Housing and Land Banking Service.

2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is 30 years.

← Formatted: Justified

2.3. This Bylaw may be cited as the "Land Assembly, Housing and Land Banking Loan Authorization Bylaw No. 3, 2023".

READ A FIRST TIME THIS	<u> </u> th	day of	<u> </u>	2023
READ A SECOND TIME THIS	<u> </u> th	day of	<u> </u>	2023
READ A THIRD TIME THIS	<u> </u> th	day of	<u> </u>	2023
ADOPTED BY THE INSPECTOR OF MUNICIPALITIES THIS	<u> </u> th	day of	<u> </u>	2023
RECEIVED THE ASSENT OF THE ELECTORS THIS	<u> </u> th	day of	<u> </u>	2023
ADOPTED THIS	<u> </u> th	day of	<u> </u>	2023

CHAIR

CORPORATE OFFICER

REPORT TO CAPITAL REGIONAL DISTRICT BOARD MEETING OF WEDNESDAY, JUNE 14, 2023

SUBJECT **Grant Acceptance for Regional Water Supply Main No. 4 – Mt. Newton to Highway 17 Section Replacement**

ISSUE SUMMARY

A resolution of the Board is required to accept a grant from the Canada Community-Building Fund's Strategic Priorities Fund for the Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement.

BACKGROUND

On July 17, 2022, the Capital Regional District Board authorized staff to apply for funding for the above-noted project. Funding has been approved in an amount of up to \$6-million. A Board resolution is required to accept grant funding over \$500,000.

ALTERNATIVES

Alternative 1

1. That the Capital Regional District Board approves execution of the Strategic Priorities Fund – Canada Community-Building Fund grant agreement for the Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement; and
2. That the Chair and Corporate Officer be authorized to execute the grant agreement on behalf of the Board.

Alternative 2

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

IMPLICATIONS

Intergovernmental and Financial Implications

The No. 4 main services approximately 30,000 people, providing water directly to the municipalities of Central Saanich, North Saanich, and Sidney through the Saanich Peninsula Water Supply System and indirectly to the Tsartlip, Tsawout, Pauquachin and Tseycum First Nations through municipal water systems.

The estimated budget for this project is \$8.8-million, of which the up to \$6-million of the grant would significantly offset.

CONCLUSION

A Board resolution is required to authorize entering into this grant agreement.

RECOMMENDATION

1. That the Capital Regional District Board approves execution of the Strategic Priorities Fund – Canada Community-Building Fund grant agreement for the Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement; and
2. That the Chair and Corporate Officer be authorized to execute the grant agreement on behalf of the Board.

Submitted by:	Steven N. Carey, B.Sc, J.D., Senior Manager, Legal Services & Risk Management
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Larisa Hutcheson, P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENT

Appendix A: Strategic Priorities Fund – Regional Water Supply Main No. 4 (22-0514-SPF)

STRATEGIC PRIORITIES FUND
under the
ADMINISTRATIVE AGREEMENT
ON THE CANADA COMMUNITY-BUILDING FUND IN BRITISH COLUMBIA
FUNDING AGREEMENT FOR THE
Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement
(22-0514-SPF)

BETWEEN: CAPITAL REGIONAL DISTRICT (the "Recipient")

AND:

The **UNION OF BRITISH COLUMBIA MUNICIPALITIES** as continued by section 2 of the *Union of British Columbia Municipalities Act* RSBC 2006, c.1, as represented by the President (UBCM).

WHEREAS:

- A. Canada, British Columbia and UBCM wish to help communities build and revitalize their public infrastructure that supports national objectives of productivity and economic growth, a clean environment and strong cities and communities;
- B. Canada, British Columbia and UBCM have entered into the Administrative Agreement on the Canada Community-Building Fund (CCBF) in British Columbia (the CCBF Agreement) setting out the roles and responsibilities of the Parties for the administration of the CCBF in British Columbia;
- C. The CCBF Agreement provides for delivery of funding that may be received by UBCM from Canada, including interest thereon, through three programs, one of which is the Strategic Priorities Fund;
- D. The CCBF Agreement sets out the purpose, terms and conditions of the Strategic Priorities Fund, and requires that in order to receive Strategic Priorities Fund funding, the Recipient must sign this Agreement with UBCM;

NOW THEREFORE, in consideration of the mutual promises herein, the Recipient and UBCM agree as follows:

1. PURPOSE

The purpose of this Agreement is to set out the roles and responsibilities of the Recipient and UBCM related to any Strategic Priorities Fund funds that may be delivered to the Recipient by UBCM.

2. SCHEDULES

The following Schedules, containing information originating in whole or in part from the CCBF Agreement, are attached to and form part of this Agreement:

- Schedule A - Definitions
- Schedule C - Eligible and Ineligible Expenditures
- Schedule D - Reporting and Audits
- Schedule E - Communications Protocol

3. CONTRIBUTION PROVISIONS

3.1 Maximum Payment

- a) UBCM will make a financial contribution from the Strategic Priorities Fund to the Recipient for the Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement project as described in Appendix 1, that will not exceed the lesser of 100% of the Eligible Costs of that Eligible Project and \$ 6,000,000.
- b) The Recipient acknowledges that Eligible Costs are limited to net costs to the Recipient, that is, net of other grants and other external contributions. The Recipient acknowledges that any otherwise Eligible Costs that have received funding from any other federal, provincial or Third Party source will not be reimbursed under this Agreement, and the Recipient agrees to promptly notify UBCM in writing of any such funding received.
- c) Any amount paid to the Recipient under this Funding Agreement in excess of the maximum contribution set out in paragraph (a), must be repaid by the Recipient to UBCM.

3.2 Payment of Funds to the Recipient

- a) Subject to paragraphs (d) and (e), and provided the Recipient is not in default of this Agreement, UBCM will pay an amount validly claimed by the Recipient under paragraph (b) or (c) within 30 days of the verification of that claim.
- b) Recipients may submit, on the form supplied by UBCM, a claim or claims for payment of the contribution amounts specified under section 3.1(a) at any time between Commencement Date and Agreement expiry date described under section 7 of this Agreement.
- c) In order to be validly included in a claim for payment, amounts must be
 - I. Eligible Costs of an Eligible Project identified in Appendix 1;
 - II. Fully paid by the Recipient prior to the date of the claim;
 - III. Not subject to reimbursement to the Recipient through any other grant, rebate, or external contribution program or arrangement;
 - IV. Not included in a previous claim for payment under this Agreement; and
 - V. When added to amounts included in all previous claims for payment under this Agreement, is less than the maximum contribution amount set out for that Eligible Project in section 3.1(a), or, if the claim is made prior to the completion of the project, 85% of that amount.
 - VI. Submission of either a progress report if the claim is an interim claim or a final report if the claim is a final claim.
 - VII. Submission of a financial officer's signature form.
- d) UBCM may not pay a claim of the Recipient if the Recipient was required to file an annual report as per section 6.6 of this Agreement.
- e) UBCM is not required to pay a claim of the Recipient if Funds received by UBCM from Canada under the CCBF Agreement are insufficient to make the payment.

4. COMMITMENTS AND ACKNOWLEDGEMENTS OF THE RECIPIENT

4.1 Eligible Project Approved for Funding and Changes to that Project

- a) An Eligible Project approved for funding must be as described in Appendix 1 and all funding under this Agreement is subject to completion of the Eligible Project listed in Appendix 1. Funding under this Agreement will not be made available to the Recipient for an Eligible Project where the scope or Eligible Costs of the Eligible Project are different than that described in Appendix 1, unless the Recipient has obtained prior written approval for the change from the Management Committee.
- b) The Management Committee shall not consider cost overruns on Eligible Projects.

4.2 Requirement to Commence and Complete Project

- a) All approved projects are required to commence within two years of the project's approval by the Management Committee and complete within five years of that approval commencement.
- b) The Recipient will implement the Eligible Project in a diligent and timely manner, and has commenced or will commence carrying out the Eligible Project on or about May 1, 2023 (the Commencement Date) and will complete the Eligible Project no later than December 31, 2025 (the Completion date).
- c) Upon request by UBCM, the Recipient will provide evidence to UBCM that the Recipient has commenced the Eligible Project.
- d) If, after the Commencement Date, and in the judgment of the Management Committee, the Recipient fails to demonstrate that the Eligible Project has commenced, this Agreement may be terminated at the option of the Management Committee, effective immediately.

5. UNDERTAKING THE ELIGIBLE PROJECT

The Recipient will:

- a) Award and manage all contracts for the supply of services and/or materials to the Eligible Project in accordance with the Recipient's relevant policies and procedures;
- b) Award contracts for the supply of services and/or materials to the Eligible Project in a manner that is transparent, competitive, and consistent with value for money principles;
- c) Comply with all legislated environmental assessment requirements and agree that no Funds will be committed to an Eligible Project until all required environmental assessment requirements have been satisfied; and
- d) Implement any mitigation measures identified in any environmental assessment of the Eligible Project.

Disposal of Asset:

- a) Any revenue that is generated from the sale, lease, encumbrance or other disposal of an asset resulting from the Eligible Project where such disposal takes place within five (5) years of the date of completion of the Eligible Project must be reimbursed to UBCM;
- b) The repayment provision under paragraph (a) does not apply if the asset disposal is to Canada, British Columbia, or a Local Government in British Columbia; and
- c) The Recipient will notify the UBCM in writing as soon as practicable of any transaction triggering the above-mentioned repayment.

6. RECIPIENT REQUIREMENTS

The Recipient will:

1. Ensure that CCBF funding received from UBCM is used in accordance to *Schedule C* (Eligible and Ineligible Expenditures).
2. Treat any CCBF funding received from UBCM as federal funds with respect to other federal infrastructure programs.
3. Ensure that CCBF funding received from UBCM results in incremental spending.
4. Comply with Ultimate Recipient requirements outlined in *Schedule E* (Communications Protocol).
5. With respect to Contracts, award and manage all contracts in accordance with the Ultimate Recipients' relevant policies and procedures and, if applicable, in accordance with the Agreement on Internal Trade and applicable international trade agreements, and all other applicable laws.
6. Submit a report to UBCM, in a format acceptable to UBCM, by June 1 in each calendar year, which includes:
 - a) CCBF transactions of the Recipient for the previous calendar year, in sufficient detail to allow UBCM to create the aggregated report required by *Schedule D*.
 - b) A declaration from the Recipient's officer responsible for financial administration that the Ultimate Recipient has complied with all Funding Agreements between it and UBCM; and
 - c) Any other information required by UBCM to fulfill its responsibilities under this Agreement, or a renewed Agreement, including, but not limited to project outcomes in relation to anticipated program benefits, expenditures made for tangible capital assets, and progress made towards Asset Management improvements.
7. Allow UBCM and Canada reasonable and timely access to all of its documentation, records and accounts and those of their respective agents or Third Parties related to the use of CCBF funding, and all other relevant information and documentation requested by Canada or its designated representatives for the purposes of audit, evaluation, and ensuring compliance with this Funding Agreement.
8. Ensure that no current or former public servant or public office holder to whom any post-employment, ethics and conflict of interest legislation, guidelines, codes or policies of Canada applies will derive direct benefit from CCBF funding, unless the provision or receipt of such benefits is in compliance with such legislation, guidelines, policies or codes.
9. Keep proper and accurate accounts and records in respect of all Eligible Projects for at least six (6) years after completion of the Eligible Project and, upon reasonable notice, make them available to Canada and UBCM.
10. Ensure actions do not establish or be deemed to establish a partnership, joint venture, principal-agent relationship or employer-employee relationship in any way or for any purpose whatsoever between Canada, British Columbia, or UBCM and a Third Party.
11. Ensure that they do not represent themselves, including in any agreement with a Third Party, as a partner, employee or agent of Canada, British Columbia, or UBCM.

12. Ensure that they will not, at any time, hold Canada, British Columbia, or UBCM or any of their respective officers, servants, employees or agents responsible for any claims or losses of any kind that they, Third Parties or any other person or entity may suffer in relation to any matter related to CCBF funding or an Eligible Project and that they will, at all times, compensate the Government of Canada or British Columbia, or UBCM and their respective officers, servants, employees and agents for any claims or losses of any kind that any of them may suffer in relation to any matter related to CCBF funding or an Eligible Project, except to the extent to which such claims or losses relate to the negligence of an officer, employee, or agent of Canada, British Columbia, or UBCM in the performance of his or her duties.
13. Agree that the above requirements which, by their nature, should extend beyond such expiration or termination.

7. TERM

This Strategic Priorities Fund Agreement shall commence on the date that it is fully executed by both of the Parties and shall expire on June 30, 2026.

8. SURVIVAL

The rights and obligations, set out in **Sections 6.1** will survive the expiry or early termination of this Agreement and any other section which is required to give effect to the termination or to its consequences shall survive the termination or early termination of this Strategic Priorities Fund Agreement.

9. AMENDMENT

The Recipient acknowledges that the CCBF Agreement may from time to time be amended by agreement of Canada, British Columbia and the UBCM and if and whenever such amendments to the CCBF Agreement are made, the Recipient agrees that the UBCM may require this Agreement to be amended to reflect, at the sole discretion of the UBCM, the amendments made to the CCBF Agreement. Where the UBCM requires this Agreement to be so amended, it will provide to the Recipient notice in writing of the amendments it requires. Such amendments shall form part of this Agreement and be binding on the Recipient and the UBCM thirty (30) days after such notice, unless before then the Recipient elects in writing to give written notice of termination of this Agreement to the UBCM.

10. WAIVER

No provision of this Agreement shall be deemed to be waived by the UBCM, unless waived in writing with express reference to the waived provisions and no excusing, condoning or earlier waiver of any default by the Recipient shall be operative as a waiver, or in any way limit the rights and remedies of the UBCM or Canada.

11. NO ASSIGNMENT

This Agreement is not assignable by the Recipient and the Recipient shall not assign, pledge, or otherwise transfer any entitlement to allocation of funds under this Agreement

to any person and shall upon receipt of any allocation of funds hereunder pay and expend such funds thereafter only in accordance with the terms of this Agreement.

12. NOTICE

Any notice, information or document provided for under this Agreement must be in writing and will be effectively given if delivered or sent by mail, postage or other charges prepaid, or by facsimile or email. Any notice that is delivered will have been received on delivery; and any notice mailed will be deemed to have been received eight (8) calendar days after being mailed.

13. DISPUTE RESOLUTION

- a) UBCM and Recipient are committed to working together and making all efforts to reach agreement on fulfillment of the terms and conditions of this Agreement and the UBCM's obligations to Canada and British Columbia under the CCBF Agreement. This includes early and ongoing communications and information sharing.
- b) In the event of an unresolved dispute between the two parties regarding the terms and conditions of this Agreement, either party may refer the dispute to the Partnership Committee.

14. DEFAULT AND REMEDIES

- a) If the Recipient fails to observe or comply with any of the terms or conditions set out in this Agreement, the UBCM, upon recommendation of the Management Committee, may, at its discretion exercisable by written notice to the Recipient, reduce, suspend or terminate any further payment.
- b) On receipt of a default notice under this section, the Recipient must, within 30 days of receipt of such notice, remedy the default, or demonstrate to the satisfaction of the UBCM that it has taken sufficient actions as necessary to commence curing the default or must proceed to dispute resolution.
- c) If and so long as the Recipient remains in default of this Agreement after notice, pursuant to this section has been given, the UBCM's obligations to make any further payments pursuant to this section, the UBCM's obligation to make any further payments pursuant to section 3.2 of this Agreement are suspended.

Any notice to the UBCM will be addressed to:

Executive Director
525 Government Street
Victoria, British Columbia
V8V 0A8
Email: ccbf@ubcm.ca

SIGNATURES

This Agreement has been executed on behalf of the Recipient by those officers indicated below and each person signing the agreement represents and warrants that they are duly authorized and have the legal capacity to execute the agreement.

CAPITAL REGIONAL DISTRICT Original signed by: <hr/> Chair	UNION OF BC MUNICIPALITIES Original signed by: <hr/> Corporate Officer
 <hr/> Corporate Officer	 <hr/> General Manager, Victoria Operations
Signed by CAPITAL REGIONAL DISTRICT on the _____ day of _____, 202____.	The Agreement has been executed by UBCM on the _____ day of _____, 202____.

Schedule A – Definitions

“Agreement” means this Strategic Priorities Fund funding agreement between the Recipient and UBCM.

“Annual Report” means the duly completed annual report to be prepared and delivered by the UBCM to Canada and British Columbia, as described in *Schedule D (Reporting and Audits)*.

“CCBF” means the Canada Community-Building Fund (formerly the federal Gas Tax Fund), a program established by the Government of Canada setting out the terms and conditions for the administration of funding that may be provided by Canada to recipients under section 161 of the *Keeping Canada’s Economy and Jobs Growing Act*, S.C. 2011, c. 24 as amended by section 233 of the *Economic Action Plan 2013 Act*, No. 1, S.C. 2013, c. 33, or any other source of funding as determined by Canada.

“CCBF Agreement” means the Administrative Agreement on the Canada Community-Building Fund in British Columbia (formerly the Administrative Agreement on the Gas Tax Fund in British Columbia).

“Chief Financial Officer” means the financial officer assigned financial administration responsibility under section 149 of the *Community Charter*.

“Communications Protocol” means the protocol by which all communications activities related to CCBF funding will be delivered as described in *Schedule E*.

“Contract” means an agreement between an Ultimate Recipient and a Third Party whereby the latter agrees to supply a product or service to an Eligible Project in return for financial consideration.

“Eligible Expenditures” means those expenditures described as eligible in *Schedule C (Eligible and Ineligible Expenditures)*.

“Ineligible Expenditures” means those expenditures described as ineligible in *Schedule C (Eligible and Ineligible Expenditures)*.

“Infrastructure” means municipal or regional, publicly or privately owned tangible capital assets in British Columbia primarily for public use or benefit.

“Management Committee” means the management committee established under the CCBF Agreement.

“Outcomes Report” means the report to be delivered by March 31, 2018 and again by March 31, 2023 by UBCM to Canada and British Columbia, which reports on how CCBF investments are supporting progress towards achieving the program benefits, more specifically described in *Schedule D (Reporting)*.

“Partnership Committee” means the Committee required to be established by the Agreement to govern the implementation of the Agreement and further described in Annex C of the Agreement.

“Party” means Canada, British Columbia or UBCM when referred to individually and collectively referred to as “Parties”.

“Third Party” means any person or legal entity, other than Canada, British Columbia, UBCM or an Ultimate Recipient, who participates in the implementation of an Eligible Project by means of a Contract.

“Recipient” means the recipient and signatory of this Agreement with UBCM.

“Ultimate Recipient” is a term used in the CCBF Agreement made between The UBCM and Canada and any reference in *Schedule E* to this Agreement to an “Ultimate Recipient” means the “Recipient” in this Agreement.

Schedule C – Eligible and Ineligible Expenditures**1. ELIGIBLE EXPENDITURES**

1.1 Eligible Expenditures will be limited to the following:

- a) The expenditures associated with acquiring, planning, designing, constructing or renovating a tangible capital asset, as defined by Generally Accepted Accounting Principles (GAAP), and any related debt financing charges specifically identified with that asset.
- b) For capacity building category only, the expenditures related to strengthening the ability of the Ultimate Recipient to improve local and regional planning including capital investment plans, integrated community sustainability plans, life cycle cost assessments, and Asset Management Plans. The expenditures could include developing and implementing:
 - I. Studies, strategies, or systems related to asset management, which may include software acquisition and implementation;
 - II. Training directly related to asset management planning; and,
 - III. Long-term infrastructure plans.
- c) The expenditures directly associated with joint communication activities and with federal project signage for CCBF-funded projects.

1.2 Employee and Equipment Costs:

The incremental costs of the Ultimate Recipient's employees or leasing of equipment may be included as Eligible Expenditures under the following conditions:

- a) The Ultimate Recipient is able to demonstrate that it is not economically feasible to tender a contract;
- b) The employee or equipment is engaged directly in respect of the work that would have been the subject of the contract; and
- c) The arrangement is approved in advance and in writing by UBCM.

2. INELIGIBLE EXPENDITURES

The following are deemed Ineligible Expenditures:

- a) Project expenditures incurred before the Commencement date;
- b) The cost of leasing of equipment by the Recipient, of any overhead costs, including salaries and other employment benefits of any employees of the Recipient, its direct or indirect operating or administrative costs of the Recipient, and more specifically its costs related to planning, engineering, architecture, supervision, management and other activities normally carried out by its staff, except in accordance with Eligible Expenditures above;
- c) Taxes for which the Recipient is eligible for a tax rebate and all other costs eligible for rebates;
- d) Purchase of land or any interest therein, and related costs;
- e) Legal fees; and

f) Routine repair and maintenance costs.

Schedule D – UBCM Reporting and Audits

1. REPORTING

Reporting requirements under the CCBF will consist of an Annual Report and an Outcomes Report that will be submitted by UBCM to Canada and British Columbia for review and acceptance. The reporting year is January 1st to December 31st.

1.1 ANNUAL REPORT

By September 30th of each year, UBCM will provide to Canada and British Columbia an Annual Report in an electronic format deemed acceptable by Canada consisting of the following in relation to the previous reporting year:

Financial Report Table:

The financial report table will be submitted in accordance with the following template.

Annual Report Financial Table	Annual	Cumulative
	20xx - 20xx	2014 - 20xx
UBCM		
Opening Balance	\$xxx	
Received from Canada	\$xxx	\$xxx
Interest Earned	\$xxx	\$xxx
Administrative Cost	(\$xxx)	(\$xxx)
Transferred to Ultimate Recipients	(\$xxx)	(\$xxx)
Closing Balance of Unspent Funds	\$xxx	
Ultimate Recipients in Aggregate		
Opening Balance	\$xxx	
Received from UBCM	\$xxx	\$xxx
Interest Earned	\$xxx	\$xxx
Spent on Eligible Expenditures	(\$xxx)	(\$xxx)
Closing Balance of Unspent Funds	\$xxx	

Independent Audit or Audit Based Attestation:

UBCM will provide an independent audit opinion, or an attestation based on an independent audit and signed by a senior official designated in writing by British Columbia and UBCM, as to:

- a) The accuracy of the information submitted in the Financial Report Table; and
- b) That Funds were expended for the purposes intended.

Project List

UBCM will maintain, and provide to Canada and British Columbia a project list submitted in accordance with the following template.

Annual Report - CCBF Project List Template

Project ID	Ultimate Recipient	Project Title	Project Description	Investment Category	Total Project Cost	Funds (CCBF) Spent	Completed

1.2 OUTCOMES REPORT

On occasion, the UBCM will provide to Canada and British Columbia and make publicly available, an Outcomes Report that will report in aggregate on the degree to which investments are supporting the progress in British Columbia towards achieving the following program benefits:

- a) Beneficial impacts on communities of completed Eligible Projects;
- b) Enhanced impact of CCBF as a predictable source of funding including incremental spending; and
- c) Progress made on improving Local Government Asset Management.

The Outcomes Report will present performance data and a narrative on program benefits. The Partnership Committee will develop and approve a methodology for reporting on performance in respect of each of the program benefits.

2. AUDITS

Canada may, at its expense, carry out any audit in relation to the Agreement, and for this purpose, reasonable and timely access to all documentation, records and accounts that are related to the Agreement and the use of CCBF funding, and any interest earned thereon, and to all other relevant information and documentation requested by Canada or its designated representatives, will be provided to Canada and its designated representatives by:

- British Columbia and UBCM, as applicable, where these are held by British Columbia, UBCM, or their respective agents or Third Parties; and
- Recipients where these are held by the Recipient or a Third Party or their respective agents.

Canada may, at its expense, complete a periodic evaluation of the CCBF to review the relevance and performance (i.e. effectiveness, efficiency and economy) of the CCBF. British Columbia and UBCM will provide Canada with information on program performance and may be asked to participate in the evaluation process. The results of the evaluation will be made publicly available.

Schedule E – Communications Protocol**1. PURPOSE**

1.1. The provisions of this Communications Protocol apply to all communications activities related to any CCBF funding which may be delivered by Canada, including allocations, and Eligible Projects funded under this Agreement. Communications activities may include, but are not limited to, public or media events, news releases, reports, web articles, blogs, project signs, digital signs, publications, success stories and vignettes, photo compilations, videos, advertising campaigns, awareness campaigns, editorials, awards programs, and multi-media products.

1.2. Through collaboration, the Parties agree to work to ensure clarity and consistency in the communications activities meant for the public.

2. JOINT COMMUNICATIONS APPROACH

2.1. The Parties agree to work in collaboration to develop a joint communications approach that identifies guiding principles, including those related to the provision of upfront project information, project signage, and planned communications activities throughout the year. This joint communications approach will have the objective of ensuring that communications activities undertaken each calendar year communicate a mix of Eligible Project types from both large and small communities, span the full calendar year and use a wide range of communications mediums.

2.2. The Parties agree that the initial annual joint communications approach will be finalized and approved by the Partnership Committee within 60 working days following the inaugural meeting of the partnership committee.

2.3. The Parties agree that achievements under the joint communications approach will be reported to the Partnership Committee once a year, or more frequently as requested by the Partnership Committee.

2.4. The Parties agree to assess the effectiveness of the joint communications approach on an annual basis and, as required, update and propose modifications to the joint communications approach. Any modifications will be brought to the Partnership Committee for approval.

3. INFORM CANADA ON ALLOCATION AND INTENDED USE OF CCBF FUNDING FOR COMMUNICATIONS PLANNING PURPOSES

3.1. UBCM agrees to provide to Canada upfront information on planned Eligible Projects and Eligible Projects in progress on an annual basis, prior to the construction season. The Parties will agree, in the joint communications approach, on the date this information will be provided. The information will include, at a minimum:

Ultimate Recipient name; Eligible Project name; Eligible Project category, a brief but meaningful Eligible Project description; amount of Funds being used toward the Eligible Project; and anticipated start date.

3.2. The Parties agree that the above information will be delivered to Canada in an electronic format deemed acceptable by Canada. This information will only be used for communications planning purposes and not for program reporting purposes.

3.3. The Parties agree that the joint communications approach will define a mechanism to ensure the most up-to-date Eligible Project information is available to Canada to support media events and announcements for Eligible Projects.

4. PROJECT SIGNAGE

4.1. The Parties and Ultimate Recipients may each have a sign recognizing their contribution to Eligible Projects.

4.2. At Canada's request, Ultimate Recipients will install a federal sign to recognize federal funding at Eligible Project site(s). Federal sign design, content, and installation guidelines will be provided by Canada and included in the joint communications approach.

4.3. Where British Columbia, UBCM or an Ultimate Recipient decides to install a permanent plaque or other suitable marker with respect to an Eligible Project, it must recognize the federal contribution to the Eligible Project(s) and be approved by Canada.

4.4. The Ultimate Recipient is responsible for the production and installation of Eligible Project signage, or as otherwise agreed upon.

4.5. British Columbia or UBCM agree to inform Canada of signage installations on a basis mutually agreed upon in the joint communications approach.

5. MEDIA EVENTS AND ANNOUNCEMENTS FOR ELIGIBLE PROJECTS

5.1. The Parties agree to have regular announcements of Eligible Projects that are benefiting from CCBF funding that may be provided by Canada. Key milestones may be marked by public events, news releases and/or other mechanisms.

5.2. Media events include, but are not limited to, news conferences, public announcements, official events or ceremonies, and news releases.

5.3. A Party or an Ultimate Recipient may request a media event.

5.4. Media events related to Eligible Projects will not occur without the prior knowledge and agreement of the Parties and the Ultimate Recipient.

5.5. The Party or Ultimate Recipient requesting a media event will provide at least 15 working days' notice to the other Parties or Ultimate Recipient of their intention to undertake such an event. The event will take place at a mutually agreed date and location. The Parties and the Ultimate Recipient will have the opportunity to participate in such events through a designated representative. The Parties will each designate their own representative.

5.6. The conduct of all joint media events and products will follow the *Table of Precedence for Canada*.

5.7. All joint communications material related to media events must be approved by Canada and recognize the funding of the Parties.

5.8. All joint communications material must reflect Canada's policy on official languages and the federal identity program.

6. PROGRAM COMMUNICATIONS

6.1. The Parties and Ultimate Recipients may include messaging in their own communications products and activities with regard to the CCBF.

6.2. The Party or Ultimate Recipient undertaking these activities will provide the opportunity for the other Parties and Ultimate Recipient to participate, where appropriate, and will recognize the funding of all contributors.

6.3. The Parties agree that they will not unreasonably restrict the other Parties or Ultimate Recipient from using, for their own purposes, public communications products related to the CCBF prepared by a Party or Ultimate Recipients, or, if web-based, from linking to it.

6.4. Notwithstanding Section 5 (Communications Protocol), Canada retains the right to meet its obligations to communicate information to Canadians about the CCBF and the use of funding through communications products and activities.

7. OPERATIONAL COMMUNICATIONS

7.1. The Ultimate Recipient is solely responsible for operational communications with respect to Eligible Projects, including but not limited to, calls for tender, construction, and public safety notices. Operational communications as described above are not subject to the federal official language policy.

7.2. Canada, British Columbia, UBCM or the Ultimate Recipient will share information promptly with the Parties should significant emerging media or stakeholder issues relating to an Eligible Project arise. The Parties will advise Ultimate Recipients, when appropriate, about media inquiries received concerning an Eligible Project.

8. COMMUNICATING SUCCESS STORIES

British Columbia and UBCM agree to facilitate communications between Canada and Ultimate Recipients for the purposes of collaborating on communications activities and products including but not limited to Eligible Project success stories, Eligible Project vignettes, and Eligible Project start-to-finish features.

9. ADVERTISING CAMPAIGNS

Recognizing that advertising can be an effective means of communicating with the public, a Party or an Ultimate Recipient may, at their own cost, organize an advertising or public information campaign related to the CCBF or Eligible Projects. However, such a campaign must respect the provisions of this Agreement. In the event of such a campaign, the sponsoring Party or Ultimate Recipient agrees to inform the other Parties

of its intention, and to inform them no less than 21 working days prior to the campaign launch.

Appendix 1
Detail of Approved Eligible Project

Regional Water Supply Main No. 4 Mt. Newton to Highway 17 Section Replacement

The project will include the following work:

- replacement of approximately 2 kilometres of water main to improve seismic resilience,
- related works including restoration.



Making a difference...together

REPORT TO ELECTORAL AREAS COMMITTEE MEETING OF WEDNESDAY, JUNE 14, 2023

SUBJECT BC Building Energy Step Code Revision - Bylaw 4538, "Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023"

ISSUE SUMMARY

The Capital Regional District's (CRD) Building Regulation Bylaw dates from 2010. Staff are recommending the introduction of recent Building Code changes as well as some minor modernizations to address the following issues: changes associated with the BC Energy Step Code that would enable builders to use the prescriptive aspects of the BC Building Code (BCBC) for compliance; to enable the Zero Carbon Step Code, which would allow the CRD to limit greenhouse gas emissions (GHG) of new buildings; clarification of the application of partial building permit refunds when Registered Professionals are involved; reinstatement of the ability of the Building Official to, with discretion, extend the expiry date of a building permit; review of the minimum inspection booking notice period to increase flexibility of the offices' functions, and reduction of the minimum building permit fee for permit re-applications for consideration of smaller, less expensive permits.

BACKGROUND

BC Building Code Revisions

New revisions to the BCBC, effective May 1, 2023, introduce mandatory requirements to meet at minimum Step 3 of the Energy Step Code. Building Code provisions include means to provide compliance through energy modelling, under the review and guidance of a registered Energy Advisor.

Local authorities can enable the optional prescriptive path to seek compliance by introducing this option into the CRD's Building Regulation Bylaw. A builder then may follow this prescriptive path of construction without the need for an Energy Advisor. The BCBC prescriptive path revisions are, apparently, more stringent than the performance path and possibly more expensive to use. However, the prescriptive pathway provides builders with a second option for compliance with the Energy Step Code should the availability of Energy Advisors be limited, or circumstances warrant.

The BCBC revisions also provide an optional power that local authorities can exercise to limit GHG emissions from new buildings. This provision in the Code is known as the Zero Carbon Step Code and is tiered into "Moderate", "Strong", and "Zero Carbon" limits. The Province has indicated its intention to gradually move to Zero Carbon limits by 2030. The Zero Carbon Code pushes the builders towards electrification of buildings and limits the installation of fossil fuel heating systems like propane furnaces, water heaters, and cooking ranges. Consultations with builders in the electoral areas indicated support for adopting the Zero Carbon Step Code limits, but also indicated concerns for limiting the use of propane ranges because of the frequency of BC Hydro grid outages. Currently the cost and functionality of electric back-up systems are not well understood. As such, staff are recommending enabling the Strong Carbon Limits, which would in most cases limit the installation of fossil fuel space and water heating systems, while allowing for the installation of propane ranges as well as propane or wood burning secondary or back-up heating systems. Staff are also recommending that areas without hydro power in the electoral areas be exempt from the GHG emissions restrictions.

Building Permit Refund when Registered Professionals Involved

The Building Regulation Bylaw article 2.3.7(3) requires that building permit fees be reduced by 10%, up to a maximum of \$1000 when Registered Professionals are involved in the design of a project or part of a project. In accordance with the Bylaw, as written, this refund is available for both Part 3 Complex projects and smaller Part 9 projects, where determined by the Building Official to have the need for a Registered Professional(s). Historically, this refund has only been granted for Complex projects and not for smaller projects. To more closely follow the *Local Government Act*, it is proposed to continue the 10% building permit reduction (up to a maximum of \$1000) for Complex Part 3 projects with one or more Registered Professionals addressing design aspects of the project, and to provide a 5% fee reduction (up to a maximum of \$500) for Simple Part 9, projects having the involvement of one or more Registered Professionals.

Discretion to Extend a Permit Expiry Date

Previously, article 2.5.4 of the Building Regulation Bylaw gave a Building Official the ability to extend the expiry date of a building permit when adverse conditions prevented the owner from completing a project prior to the permit expiry date. This was mostly allowed for only short periods of time when it was warranted or when the applicant encountered an undue hardship. This Bylaw article was unintentionally removed from the Building Regulation Bylaw during one of the recent revision processes. It is recommended that this article be reinstated to allow the Building Official this discretion to aid owners and applicants.

Sufficient Notice for Booking Inspections

Article 3.5.4 of the Building Regulation Bylaw requires an owner to give at least 24 hours notice to the CRD when requesting an inspection. Although the Building Inspection Division strives to provide a timely response to inspection requests, it is not always possible, especially for the smaller Gulf Islands where inspections involve lengthy travel times. It is recommended to revise this article to allow greater flexibility and more realistic expectations of the owners and applicants.

Minimum Fee for Re-applications of Permits

Article 2.5.3 of the Building Regulation Bylaw addresses the process for reapplication of a building permit after a permit has expired. Sentence 3(b) states that the fee for this permit will not be less than \$300. Considering that smaller permits such as chimney and woodstove permits cost less than \$300 it is proposed to revise the minimum fee to be not more than the cost of the original permit.

ALTERNATIVES

Alternative 1

The Electoral Areas Committee recommends to the Capital Regional District Board:

- a) That Bylaw 4538, “Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023” be introduced and read a first, second, and third time; and
- b) That Bylaw No. 4538 be adopted.

Alternative 2

That the BC Building Energy Step Code Revision - Bylaw 4538, “Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023” report be referred back to staff for further information based on direction from the Electoral Areas Committee.

IMPLICATIONS

Service Delivery

The introduction of the prescriptive path to Energy Step Code compliance will benefit builders and homeowners by permitting more flexibility with respect to BCBC compliant solutions. Potentially this could reduce time needed for an applicant to prepare a building permit application.

Adopting the BCBC provision to restrict GHG emissions will align with CRD's commitment to support the provincial Zero Carbon Step Code.

Allowing for building permit fee reductions when Registered Professionals are required on projects of all types will allow for increased liability protection.

The remaining proposed revisions will allow for a less restrictive application of the Building Regulation Bylaw by allowing for permit expiry date extensions, a more workable inspection notice period, and permit re-application fees that better reflect those original permit fees of a lower value. These revisions will reduce hardship to some applicants.

Financial Implications

The introduction of prescriptive path provisions in the Building Bylaw may have little or no effect on the Building Inspection Division but may allow reduced delays for applicants awaiting the availability of an Energy Advisor before submitting a permit application.

The introduction of the Zero Carbon Step Code will likely have no or little financial implications on permit applicants and the Building Inspection Division.

Increasing the number of partial building permit refunds will have a negative effect on the Building Inspection Division budget. It is hoped, however, that this will reduce future liability to the CRD for project failures.

The allowance for short-term permit extensions and a lower minimum fee for permit re-applications may, to a small degree, negatively affect the Building Inspection Division revenue budget. Despite the slight reduction in permit revenue, this should be seen as positive and helpful to owners and applicants.

CONCLUSION

The introduction of prescriptive means for Energy Step Code compliance will meet the requirements of the Ministerial Order for the recent Building Code revisions and allow for an alternative means to meet Building Code compliance. Restrictions for GHG emissions will align with CRD's commitment to support the provincial movement to reduce GHG emissions.

Updating of the Building Regulation Bylaw to clarify when partial permit fee refunds are applicable, allowing for permit expiry date extensions, providing for more realistic inspection booking times, and reducing the minimum permit re-application fee will help to ensure fair, clear, and consistent Division practices.

RECOMMENDATION

The Electoral Areas Committee recommends to the Capital Regional District Board:

- a) That Bylaw 4538, “Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023” be introduced and read a first, second, and third time; and
- b) That Bylaw No. 4538 be adopted.

Submitted by:	Mike Taylor, RBO, Manager and Chief Building Inspector, Building Inspection
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Acting Chief Administrative Officer

ATTACHMENTS

Appendix A: Amendment Bylaw No. 4538, “Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023”

Appendix B: Bylaw No. 3741 (Redlined)

**CAPITAL REGIONAL DISTRICT
BYLAW NO. 4538**

**A Bylaw to Amend Building Regulation Bylaw No. 5, 2010 (Bylaw No. 3741)
A Bylaw to Regulate the Construction, Alteration, Repair or Demolition of
Buildings and Structures in the Electoral Areas of the Capital Regional District**

WHEREAS:

- A. Under Bylaw No. 3741, "Building Regulation Bylaw No. 5, 2010", the Regional Board established a Bylaw to Regulate the Construction, Alteration, Repair or Demolition of Buildings and Structures in the Electoral Areas of the Capital Regional District;
- B. Revisions to the British Columbia Building Code effective May 1, 2023, introduce mandatory requirements to meet Step 3 of the Energy Step Code or better, and require the review and guidance of a registered energy advisor, unless modifications are made to a local authority's building bylaw to permit a prescriptive path for compliance;
- C. The Board is concerned with a lack of energy advisors in the region, and desires to permit applicants to follow the prescriptive path for compliance;
- D. The Board desires to permit Building Officials to extend permit expiry dates in the event of hardship;
- E. The Board desires to allow Building Officials more flexibility in scheduling inspections;
- F. The Board desires to adjust various fees that are currently payable under the Bylaw;
- G. The Board wishes to amend Bylaw No. 3741 to allow for the prescriptive path for compliance with Step 3 of the Energy Step Code, to permit Building Officials to extend permit expiry dates in the event of hardship, and to allow Building Officials more flexibility in scheduling inspections;

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

1. Bylaw No. 3741, "Building Regulation Bylaw No. 5, 2010", is hereby amended as follows:
 - (a) By replacing section 2.3.7(3) in its entirety with the following:

(3) When a Permit is issued in accordance with Section 2.3.4 of this Bylaw, the Permit fee shall be reduced by 10% of the fees payable pursuant to Appendix B to this Bylaw, up to a maximum reduction of \$1000 (one thousand dollars).
 - (b) By inserting the following as section 2.3.7(4):

(4) When a Permit is issued for a Simple Building and a Building Official has required one or more letters of assurance under section 3.4.1 of this Bylaw, the Permit fee shall be reduced by 5%, of the fees payable pursuant to Appendix B to this Bylaw, up to a maximum reduction of \$500 (five hundred dollars).

(c) By inserting the following as section 2.3.8:

2.3.8 Prescriptive Path Permitted

(1) In relation to the conservation of energy, construction on or after May 1, 2023 may meet the prescriptive requirements of s. 9.36.2 to 9.36.4 of Division B of the Building Code;

(d) By replacing section 2.5.3(1) in its entirety with the following:

(1) Except as provided in 2.5.9 and 2.5.10, where a permit expires under section 2.5.2 the owner must apply for a new permit in order to complete the work.

(e) By replacing section 2.5.3(3)(b) with the following:

(b) will in no event be greater than the original Permit fee.

(f) By inserting the following as section 2.5.10:

2.5.10 Extension of a Permit

(1) In addition to a renewal under section 2.5.9, a Building Official may extend the period of time set out under section 2.5.2 where construction has not commenced, or has been discontinued, due to adverse weather, strikes, or material or labour shortages. The maximum period of an extension is 12 months.

(g) By renumbering section 3.5.5 as section 3.5.6.

(h) By adding the following as section 3.5.5:

3.5.5 A Building Official shall attempt to accommodate the requested inspection date and time for any inspection requested under section 3.5.4. If the Building Official is unable to attend at the requested date and time due to travel distance or time constraints, the inspection shall occur as soon as reasonably practicable thereafter.

2. This Bylaw may be cited for all purposes as Bylaw No. 4538, "Building Regulation Bylaw No. 5, 2010, Amendment Bylaw No. 5, 2023".

READ A FIRST TIME THIS	day of	20__
READ A SECOND TIME THIS	day of	20__
READ A THIRD TIME THIS	day of	20__
ADOPTED THIS	day of	20__

CHAIR

CORPORATE OFFICER



**CAPITAL REGIONAL DISTRICT (CRD)
BYLAW NO. 3741**

BUILDING REGULATION BYLAW NO. 5, 2010

Consolidated for Public Convenience
(This bylaw is for reference purposes only)

ORIGINALLY ADOPTED OCTOBER 12, 2010
(Consolidated with Amending Bylaws 3780, 4403, 4480, 4535, 4538)

For reference to original bylaws or further details, please contact the Capital Regional District,
Legislative Services Department, 625 Fisgard St., PO Box 1000, Victoria BC V8W 2S6
T: 250.360.3127, F: 250.360.3130, Email: legserv@crd.bc.ca, Web: www.crd.bc.ca

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**CAPITAL REGIONAL DISTRICT
BYLAW NO. 3741**

**A BYLAW TO REPEAL EXISTING BUILDING REGULATIONS AND TO ADOPT
NEW BUILDING REGULATIONS IN AREAS OF THE CAPITAL REGIONAL DISTRICT
NOT WITHIN A CITY, DISTRICT, TOWN OR VILLAGE**

WHEREAS:

- A. Section 298(1) of the Local Government Act and Section 53 of the Community Charter authorizes the Capital Regional District, for the health, safety and protection of persons and property to regulate the construction, alteration, repair, or demolition of buildings and structures by bylaw.
(BI 4403)
- B. The Province of British Columbia has adopted a building code to govern standards in respect of the construction, alteration, repair and demolition of buildings in municipalities and regional districts in the province.
- C. It is deemed necessary to provide for the administration of the building code.

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

PART 1 SCOPE AND DEFINITIONS

1.1 SCOPE

1.1.1 Electoral Areas

The provisions of this Bylaw shall apply in all parts of Juan de Fuca, Southern Gulf Islands, and Salt Spring Island electoral areas in the Capital Regional District.

(BI 4403)

1.1.2 Other Legislation

Nothing contained in this Bylaw relieves any person from complying with all other applicable legislation or enactments respecting health, safety and the protection of persons and property.

1.1.3 Application

The provisions of this Bylaw shall apply to the:

- (1) design and construction of new buildings or structures; and

(2) alteration, reconstruction, demolition, deconstruction and change in use or class of occupancy of existing buildings or structures.

(*BI 4403*)

1.2 DEFINITIONS

1.2.1 Non-defined Terms

Definitions of words or phrases used in this Bylaw that are not specifically defined under Section 1.2 and are not defined under the *Building Code* shall have the meanings which are commonly assigned to them in the context in which they are used in this Bylaw, consistent with the specialized use of terms within the various trades and professions to which the terminology applies.

1.2.2 Definitions:

In this Bylaw:

“Accessory Building” means a building or structure, the use or intended use of which is ancillary, subordinate, customarily incidental and exclusively devoted to the principal use.

(*BI 4403*)

“Alteration” means a change or extension to any matter or thing or to any occupancy regulated by the *Building Code*.

(*BI 4403*)

“Board” means the Board of the Capital Regional District.

“Building Code” means the *British Columbia Building Code* as adopted from time to time by the Minister pursuant to Part 2 of the *Building Act*.

(*BI 4403*)

“Building Official” means a Building Inspector appointed by the Capital Regional District to administer this Bylaw.

“Certificate of Occupancy” includes a Conditional Certificate of Occupancy where appropriate.

“Conditional Certificate of Occupancy” means a partial certificate of occupancy issued by a Building Inspector, of a temporary nature, in accordance with sections 2.5.9 and 2.6 of this Bylaw.

(*BL 4535*)

“Complex Building” means:

- (a) a building classified as a post-disaster building;
- (b) a building used for major occupancies classified as:
 - (i) assembly occupancies,
 - (ii) care or detention occupancies,
 - (iii) high hazard industrial occupancies; and

(c) a building exceeding 600 square meters in building area or exceeding three storeys in building height used for major occupancies classified as:

- (i) residential occupancies,
- (ii) business and personal services occupancies,
- (iii) mercantile occupancies,
- (iv) medium and low hazard industrial occupancies.

"Construct" includes build, erect, install, repair, alter, add, enlarge, move, locate, reconstruct, demolish, remove, excavate or shore.

(BI 4403)

"Construction Value" means the fair market value of the work proposed to be undertaken, including the value of all labour and materials whether contracted, volunteered or provided by the owner, together with the value of all design and professional consulting services, construction management services, and contractor's profit and overhead, as determined in accordance with section 2.4.4 of this Bylaw.

(BI 4403)

"Deconstruction" means the taking apart of a building or structure whereby at least 70% of the framing members of the building or structure are removed in salvageable form and are capable of being reused as framing members.

"Excavation" means the removal of soil, rock or fill for the purpose of construction requiring a permit.

(BI 4403)

"Health and Safety Aspects of the Work" means design and construction regulated by Parts 3, 4, 5, 6, 7, 8, 9, and 10, Division B, of the *Building Code*, and subject to Parts 1 and 2 in relation to Parts 3 through 10, Division B.

(BI 4403)

"Owner" includes a person who has been authorized by the owner to act as the owner's agent.

"Permit" means a Permit as required in Section 2 and may include a building permit, a plumbing permit, a demolition permit or a deconstruction permit, a permit for a change of occupancy, and a fireplace/chimney/woodstove/oil furnace/oil tank permit.

"Registered Professional" means a person who is registered or licensed to practice as an architect under the *Architects Act*, or a person who is registered or licensed to practice as a professional engineer under the *Engineers and Geoscientists Act*.

"Simple Building" means a building of three storeys or less in building height, having a building area not exceeding 600 square meters and used for major occupancies classified as:

- (a) residential occupancies,
- (b) business and personal services occupancies,

- (c) mercantile occupancies, or
- (d) medium and low hazard industrial occupancies.

"Structure" means a construction or portion of construction, of any kind, whether fixed to, supported by or sunk into land or water, except landscaping, fences, paving, and retaining structures less than 1.2 meters in height.

(BI 4403)

"Wetland" means land that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal conditions supports vegetation typically adapted for life in saturated soil conditions, including marshes, swamps and bogs.

1.3 PURPOSE OF BYLAW

1.3.1 Interpretation

This Bylaw shall, notwithstanding any other provision herein, be interpreted in accordance with this section.

1.3.2 General

This Bylaw is enacted for the purpose of regulating construction within all parts of the Juan de Fuca, Southern Gulf Islands and Salt Spring Island electoral areas in the general public interest. The activities undertaken by or on behalf of the Capital Regional District pursuant to this Bylaw are for the sole purpose of providing a limited spot check for health, safety, and protection of persons and property. It is not contemplated nor intended, nor does the purpose of this Bylaw extend:

- (1) to the protection of owners, owner/builders or constructors from economic loss;
- (2) to the assumption by the Capital Regional District or any building official of any responsibility for ensuring the compliance by an owner, his or her representatives or any employees, constructors or designers retained by him or her, with the *Building Code*, the requirements of this Bylaw or any other applicable codes, enactments or standards;
- (3) to providing to any person a warranty of design or workmanship with respect to any building or structure for which a Permit or a Certificate of Occupancy is issued under this Bylaw;
- (4) to providing to any person a warranty or assurance that construction undertaken pursuant to a Permit issued by the Capital Regional District is free of latent defects.

(BI 4403)

PART 2 PERMITS AND PERMIT FEES

2.1 GENERAL

2.1.1 (1) A Permit is required whenever work regulated under the Building Code and this Bylaw is to be undertaken.

(BI 4403)

(2) The Chief Building Official shall create, modify, or adopt for usage, forms (other than those prescribed by enactment) in relation to Permit applications, in order to collect or make use of information or documentation necessary for the administration and enforcement of this bylaw, the Building Code, and other applicable enactments. The Building Department shall maintain a list of such forms.

(BL 4535)

(3) In creating or modifying Permit forms, the Chief Building Official shall ensure forms contain a limitation of liability substantially similar to the clauses in Sections 2.1.4 to 2.1.6 of this Bylaw, as well as *Freedom of Information and Protection of Privacy Act* personal information collection statements. The Chief Building Official may include fee calculation materials in Permit forms, consistent with fee appendices attached to this Bylaw, for ease of administration of the Permits.

(BL 4535)

(4) The following appendices form part of this Bylaw:

Appendix A: Fees and Charges

Appendix B: Permit Fees Based on Construction Value

Appendix C: Construction Values for Buildings Other Than Single Family Dwellings, Factory-Built Homes, Mobile Homes, and Moved Buildings

Appendix D: Construction Values for Single and Two-Family Dwellings, Factory-Built Homes, Mobile Homes, and Moved Buildings

Appendix E: Conditional Certificate of Occupancy

Appendix F: Certificate of Occupancy

Appendix G: Building Permit

(BL 4535)

2.1.2 Permits Required

Every person shall apply for and obtain:

(1) a building permit before commencing:

(a) site excavation or blasting;

(b) construction, repairing or altering a building or structure;

- (c) moving a building; or
- (d) changing an occupancy;

- (2) a plumbing permit prior to commencing the installation of any plumbing;
- (3) a fireplace and chimney permit prior to the construction of a masonry fireplace or the installation of a solid fuel burning appliance or factory/masonry chimney unless the works are encompassed by a valid building permit;
- (4) a demolition permit before demolishing a building or structure;
- (5) a deconstruction permit prior to commencing the deconstruction or removal of a building.

(BI 4403)

2.1.3 Permits Not Required

A Permit is not required in the following circumstances:

- (1) for minor repairs or alterations to non-structural components of the building;
- (2) when a valve, faucet, fixture or service water heater is repaired or replaced, a stoppage cleared, or a leak repaired if no change to the piping is required;
- (3) for accessory buildings less than 10 square meters in area that do not create a hazard;

- (4) retaining structures less than 1.2 meters in height;
- (5) other retaining structures more than 1.2 meters in height and greater than 30° off vertical.

(BI 4403)

2.1.4 Neither the issuance of a Permit under this Bylaw nor the acceptance or review of plans or specifications or supporting documents, nor any inspections made by or on behalf of the Capital Regional District shall in any way relieve the owner or his or her representatives from full and sole responsibility to perform the work in accordance with the *Building Code*, this Bylaw and all other applicable enactments, codes and standards.

2.1.5 It shall be the full and sole responsibility of the owner and where the owner is acting through a representative, the representative to carry out the work in respect of which the Permit was issued in compliance with the *Building Code*, this Bylaw and all other applicable enactments, codes and standards.

2.1.6 Neither the issuance of a Permit, Certificate of Occupancy under this Bylaw nor the acceptance or review of plans, drawings, specifications, or supporting documents, nor any inspections made by or on behalf of the Capital Regional District constitute in any way a representation, warranty, assurance or statement that the *Building Code*, this Bylaw or any other applicable enactments, codes and standards have been complied with, nor does

it constitute a representation or warranty that the building or structure meets any standard of materials or workmanship.

(BI 4403)

2.1.7 Essential Services

No Permit shall be issued for the construction of any residential, commercial, institutional or industrial buildings until the following essential services are provided for:

- (1) **Water (Potable)** A community water service or other source of potable water, approved by the medical health officer, public health inspector or the authority having jurisdiction, shall be provided;
- (2) **Sanitary Sewer** A community sewer or other method of sewage disposal, provided that, for a sewerage system, the owner has submitted to the building official all documents to be filed with the Vancouver Island Health Authority as prescribed in Section 8(2) of the Sewerage System Regulation BC Reg. 326/04; and for a holding tank, the owner has submitted to the building official a holding tank permit as prescribed in the Sewerage System Regulation BC Reg. 326/04;
- (3) **Storm Drainage** An approved method of storm drainage disposal shall be available to service the building or structure;
- (4) **Access to Property** A driveway of sufficient strength, grade and width for access and egress to all principal buildings by fire and emergency vehicles within 30 meters of a building;
- (5) Water supply as per NFPA 1142 "Standard for Water Supply for Suburban and Rural Fire Fighting" or equivalent documents for adequate water supply for fire fighting; and
- (6) Site visit to be completed by a registered professional or building official to determine if land is subject to flooding, mud flows, debris flows, debris torrents, erosion, land slip, rock-fall, subsidence or avalanche.

2.2 COMPLIANCE

- 2.2.1** No person shall rely upon any Permit as establishing compliance with this Bylaw or assume or conclude that this Bylaw has been administered or enforced according to its terms.

2.3 APPLICATIONS

- 2.3.1** An application for a Permit shall be made on the appropriate form, issued from time to time in accordance with this Bylaw.

(BL 4535)

- 2.3.2** All plans submitted with Permit applications shall bear the name and address of the designer of the building or structure.

2.3.3 Each building or structure to be constructed on a site requires a separate building permit and shall be assessed a separate building permit fee based on the value of the building or structure as determined in accordance with Appendices A to D of this Bylaw.

(BI 4403)

2.3.4 Applications for Complex Buildings

- (1) An application for a building permit with respect to a complex building shall:
 - (a) be made on the appropriate form issued from time to time, signed by the owner, or by a signing officer with sufficient authority to bind the corporation if the owner is a corporation;

(BL 4535)

- (b) include a copy of a title search made within 30 days of the date of this application, complete with copies of all easements, statutory rights of way and covenants;
- (c) include a site plan prepared by a registered professional or British Columbia land surveyor showing:
 - (i) the bearing and dimensions of the parcel taken from the registered subdivision plan;
 - (ii) the legal description and civic address of the parcel;
 - (iii) the location and dimensions of all statutory rights of way, easements, development permit areas and setback requirements;
 - (iv) the location and dimensions of all existing and proposed buildings or structures on the parcel;
 - (v) setbacks to the natural boundary of any sea, lake, wetland, pond or watercourse;
 - (vi) the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a building or structure where the Capital Regional District's or the Islands Trust's land use regulations establish siting requirements related to minimum floor elevation; and
 - (vii) the location, dimension and gradient of parking and driveway access.
- (d) include floor plans showing the dimensions and uses of all areas; the location, size and swing of doors; the location, size and opening of windows; floor, wall, and ceiling finishes; plumbing fixtures; structural elements; and stair dimensions;
- (e) include a cross-section through the building or structure illustrating foundations, drainage, ceiling heights, the dimensions and height of crawl and roof spaces, and construction systems;
- (f) include elevations of all sides of the building or structure to confirm that it substantially conforms to the *Building Code* and any other applicable enactments;

- (g) include cross-sectional details drawn at an appropriate scale and at sufficient locations to illustrate that the building or structure substantially conforms to the *Building Code*;
- (h) include copies of approvals required under any enactment relating to health or safety, including, without limitation, Sewage Disposal permits, Highway Access permits and Ministry of Health Services approval;
- (i) (include a letter of assurance in the form of Schedule A, as referred to in Division C of Part 2 of the *Building Code*, signed by the owner, or a signing officer if the owner is a corporation, and the coordinating registered professional;
- (j) include letters of assurance in the form of Schedule B as referred to in Division C of Part 2 of the *Building Code*, each signed by such registered professionals as the building official or *Building Code* may require to prepare the design for and conduct field reviews of the construction of the building or structure;
- (k) include two copies of specifications and two sets of drawings (three of each on the Southern Gulf Islands) at a scale of $\frac{1}{4}$ " = 1' or 1:50 (or other appropriate scale) of the design prepared by each registered professional and including the information set out in Section 2.3.4(1) (d) to (g) of this Bylaw.

(2) In addition to the requirements of Section 2.3.4(1), the following may be required by a building official to be submitted with a building permit application for the construction of a complex building where the complexity of the proposed building or structure or siting circumstances warrant:

- (a) site servicing drawings, including sufficient detail of off-site services to indicate locations at the property line, prepared and sealed by a registered professional;
- (b) a section through the site showing grades, buildings, structures, parking areas and driveways; and
- (c) any other information required by the building official or the *Building Code* to establish substantial compliance with this Bylaw, the *Building Code* and other bylaws and enactments relating to the building or structure.

2.3.5 Applications for Simple Buildings

(1) An application for a building permit with respect to a simple building shall:

- (a) be made on the appropriate form issued from time to time, signed by the owner or by a signing officer with sufficient authority to bind the corporation if the owner is a corporation;
- (b) include a copy of a title search made within 30 days of the date of the application, complete with copies of all easements, statutory rights of way and covenants;
- (c) include a site plan showing:

- (i) the bearing and dimensions of the parcel taken from the registered subdivision plan;
- (ii) the legal description and civic address of the parcel;
- (iii) the location and dimensions of all statutory rights of way, easements, development permit areas and setback requirements;
- (iv) the location and dimensions of all existing and proposed buildings or structures on the parcel;
- (v) setbacks to the natural boundary of any sea, lake, wetland, pond or watercourse;
- (vi) the existing and finished ground levels to an established datum at or adjacent to the site and the geodetic elevation of the underside of the floor system of a building or structure where the Capital Regional District's or the Islands Trust's land use regulations establish siting requirements related to minimum floor elevation; and
- (vii) the location, dimension and gradient of parking and driveway access.

- (d) include floor plans showing the dimensions and uses of all areas; the dimensions and height of crawl and roof spaces; the location, size and swing of doors; the location, size and opening of windows; floor, wall, and ceiling finishes; plumbing fixtures; structural elements; and stair dimensions;
- (e) include a cross-section through the building or structure illustrating foundations, drainage, ceiling heights and construction systems;
- (f) include elevations of all sides of the building or structure showing finish details, roof slopes, windows, doors, natural or finished grade as applicable and building height;
- (g) include cross-sectional details drawn at an appropriate scale and at sufficient locations to illustrate that the building or structure substantially conforms to the *Building Code*;
- (h) include copies of approvals required under any enactment relating to health or safety, including, without limitation, Sewage Disposal permits, Highway Access permits and Ministry of Health Services approval;
- (i) include two copies of specifications and two sets of drawings (three of each on the Southern Gulf Islands) at a scale of $\frac{1}{4}$ " = 1' 0" or 1:50 (or other appropriate scale) of the design including the information set out in Section 2.3.5(1) (d) to (g) of this Bylaw;
- (j) include any other information required by the building official or the *Building Code* to establish substantial compliance with this Bylaw the *Building Code* and other bylaws and enactments relating to the building or structure.

2.3.6 Applications for Moved Buildings or Structures

- (1) A Permit is required for the rehabilitation of a moved building or structure on the property to which it is to be moved.

(2) Before issuing a Permit under Section 2.3.6(1), the building official may require certification from a registered professional that the building meets the requirements of this Bylaw, the *Building Code* and any other applicable enactment.

2.3.7 Professional Plan Certification

(1) The letters of assurance in the form of Schedules A, B and C-A and C-B referred in Division C of Part 2 – Administrative Provisions of the *Building Code* and provided pursuant to this Bylaw are relied upon by the Capital Regional District and its building officials as certification that the design and plans to which the letters of assurance relate comply with the *Building Code* and other applicable enactments. Any failure on the part of the building official to provide the owner with the written notice will not diminish or invalidate the reliance by the Capital Regional District or its building officials on the registered professionals.

(BI 4403)

(2) A Permit issued pursuant to Section 2.3.4 or Section 3.4.1 of this Bylaw shall include a notice to the owner that the Permit is issued in reliance upon the certification of the registered professionals that the building complies with the *Building Code* and other applicable enactments relating to safety.

(3) ~~When a Permit is issued in accordance with Section 2.3.4 or Section 3.4.1 of this Bylaw, the Permit fee shall be reduced by 10% of the fees payable pursuant to Appendix E to this Bylaw, up to a maximum reduction of \$1000 (one thousand dollars). When a Permit is issued in accordance with Section 2.3.4 of the Bylaw, the Permit fee shall be reduced by 10% of the fees payable pursuant to Appendix B to this Bylaw, up to maximum reduction of \$1000 (one thousand dollars).~~

(BI 4538)

(4) ~~When a Permit is issued for a Simple Building and a Building Official has required one or more letters of assurance under section 3.4.1 of this Bylaw, the Permit fee shall be reduced by 5% of the fees payable pursuant to Appendix B to this Bylaw, up to a maximum reduction of \$500 (five hundred dollars).~~

(BI 4538)

2.3.8 Prescriptive Path Permitted

(1) ~~In relation to the conservation of energy, construction on or after May 1, 2023 may meet the prescriptive requirements of s. 9.36.2 to 9.36.4 of Division B of the Building Code;~~

(BI 4538)

2.4 PERMIT FEES AND PLAN PROCESSING FEES

2.4.1 A Permit fee for any of the following work, calculated in accordance with Appendices A to D, shall be paid in full prior to issuance of:

(1) a plumbing Permit pursuant to section 2.1.2(2) of this Bylaw;

(2) a Permit for the installation of a fireplace, chimney, or wood stove pursuant to section 2.1.2(3) of this Bylaw;

(3) a Permit for the demolition or deconstruction of a building or structure, pursuant to section 2.1.2(4) or (5) of this Bylaw.

(BI 4403)

2.4.2 A Permit fee, calculated in accordance with Appendix B of this Bylaw, and based upon the construction value of the proposed work as determined in accordance with section 2.4.4 of this Bylaw, shall be paid in full prior to the issuance of a Permit for the construction, alteration or repair of a building or structure pursuant to section 2.1.2(1) of this Bylaw.

(BI 4403, 4535)

2.4.3 An application for a Permit pursuant to section 2.1.2(1) of this Bylaw must be accompanied by the owner's declaration of the value of the proposed work.

(BI 4403)

2.4.4 For the purpose of section 2.4.2, the construction value of the proposed work shall be the greater of the following:

- (1) the value of the proposed work, as declared by the owner under section 2.4.3,
- (2) the construction value of the proposed work, as determined by the building inspector using one of the following sources:
 - (a) the construction values set out in Appendix C and D to this Bylaw; or
 - (b) a construction costing manual or service that is nationally-recognized by the construction and real estate industries as authoritative, including but not limited to the Marshall & Swift Valuation Service or Residential Cost Handbook.

(BI 4403, 4535)

2.4.5 A plan processing fee, as set out below, shall accompany an application made for a building permit to this Bylaw.

- (1) The plan processing fee for a building or structure with a construction value as established under section 2.4.4 of less than \$50,000 (fifty thousand dollars) shall be \$100 (one hundred dollars).
- (2) The plan processing fee for a building or structure with a construction value as established under section 2.4.4 between \$50,000 (fifty thousand dollars) and \$200,000 (two hundred thousand dollars) shall be \$200 (two hundred dollars).
- (3) The plan processing fee for a building or structure with a construction value as established under section 2.4.4 of greater than \$200,000 (two hundred thousand dollars) shall be \$300 (three hundred dollars).

(BI 4403, 4535)

2.4.6 The plan processing fee is non-refundable and shall be credited against the building permit fee when the Permit is issued.

2.4.7 Cancellations and Refunds

- (1) An application shall be cancelled and the plan processing fee forfeited if the Permit has not been issued within six months of the date that the Permit application was received.
- (2) When an application is cancelled, the plans and related documents submitted with the application may be destroyed.
- (3) The owner may obtain a refund of the Permit fee set out in Section 2.4.1 of this Bylaw, by way of a written request, when a Permit is surrendered and cancelled within six months of the Permit being issued and before any excavation or construction begins.
- (4) At the written request of the owner, after six months from the date of issuing the Permit and if the work has not commenced, including excavation, the Permit shall be cancelled and a refund to the Permit holder of 60% of the fees paid for the Permit.

2.4.8 Where, due to non-compliance with this Bylaw, more than two inspections are necessary when one inspection is normally required, for each inspection after the second inspection, a re-inspection charge of \$100 (one hundred dollars) shall be paid prior to additional inspections being performed.

2.4.9 The fee for a special inspection or consultation with the building inspector for work which is not addressed by an existing Permit shall be at the charge-out rate of \$92 (ninety-two dollars) per hour and prorated in the case of a partial hour to the nearest quarter hour.

2.4.10 The fee for a letter report on the status of an existing building or structure shall be \$100 (one hundred dollars).

(BI 4480)

2.4.11 The fee for removing a notice that has been placed on title to land in accordance with Section 57 of the *Community Charter* shall be \$500 (five hundred dollars).

2.4.12 The fee for the review of a 219 Restrictive Covenant required in accordance with Section 219 of the *Local Government Act* and/or Section 56 of the *Community Charter* shall be \$300 (three hundred dollars) and, when requested, the fee for the execution of the approved covenant shall be \$200 (two hundred dollars).

(BI 4403)

2.5 CONDITIONS OF A PERMIT

2.5.1 A building official shall issue the Permit for which the application is made when:

- (1) a completed application in compliance with Section 2.1.2 and with Section 2.3.4 or Section 2.3.5 of this Bylaw, including all required supporting documentation, has been submitted and the review of the application has been completed;
- (2) the owner has paid all applicable fees set out in Section 2.4 of this Bylaw;
- (3) the owner has paid all charges and met all regulations and requirements imposed by any other bylaw or enactment;

- (4) the proposed construction does not contravene any covenant under Section 219 of the *Land Title Act*;
- (5) no enactment authorizes the Permit to be withheld; and
- (6) the owner is not disentitled to a Permit by operation of Section 2.5.5 [*Violations and Notices on Title*].

(BL 4535)

2.5.2 Every Permit is issued upon the condition that the Permit shall expire and the rights of the owner under the Permit shall terminate if:

- (1) work authorized by the Permit is not commenced within six months from the date of issuance of the Permit;
- (2) work is discontinued for a period of 12 months or no inspection as listed in Section 3.5.4 has been requested during that period;
- (3) work has not been completed within 24 months from the date of the issuance of the Permit; or
- (4) there is a sale or transfer of the property in respect of which the Permit is issued, unless the owner has first notified the building inspector in writing and the building inspector has authorized the transfer or assignment of the Permit to the new owner.

(BI 4403)

2.5.3 Reapplication

- (1) ~~Except as provided in 2.5.9, where a permit expires under section 2.5.2 the owner must apply for a new permit in order to complete the work. Except as provided in 2.5.9 and 2.5.10, where a permit expires under section 2.5.2 the owner must apply for a new permit in order to complete the work.~~

(BI 4538)

- (2) An application under section 2.5.3(1) must be accompanied by any of the information referred to in sections 2.3.4 or 2.3.5 that the building inspector considers is necessary to verify that the health and safety aspects of the work that has yet to be substantially completed will conform with the requirements of the then-current Building Code, this Bylaw and any other applicable enactment.
- (3) The fee for a Permit issued under section 2.5.3(1):
 - (a) will be based upon the value of the work that remains to be completed, as determined by the building inspector in accordance with section 2.4.4 of this Bylaw;
 - (b) ~~will in no event be less than \$300.00. will in no event be greater than the original Permit fee.~~

(BI 4538)

(BI 4403)

2.5.4 Revocation of a Permit

The building official may revoke a Permit if one or more of the following violations occurs:

- (1) there is a contravention of a condition under which the Permit was issued;
- (2) there is a contravention of a provision of the *Building Code*, this Bylaw or other applicable bylaws or enactments;
- (3) the Permit was issued in error; or
- (4) the Permit was issued on the basis of false or incorrect information.

The revocation shall be in writing and transmitted to the Permit holder by registered mail, and deemed served at the expiration of three days after the date of mailing.

2.5.5 Denial of Permits

- (1) Any person who has a notice placed on their property's title under section 57 of the *Community Charter*, or who has been notified in writing that work done by him or her or on his or her behalf is a violation referred to in Section 2.5.4 (collectively an "Infraction Notice"), shall have no Permit issued in respect of the same property, until the person has complied, corrected the violation, or the issue identified in any notice on title, or satisfied the building official of their ability to do so.
- (2) As an exception to Section 2.5.5(1), if the building permit application is for a building or structure other than the building or structure for which an Infraction Notice was issued, a building inspector may issue the building permit if:
 - a. the building inspector is satisfied that the construction and occupancy of the new building or structure does not adversely affect health or life safety aspects of any existing buildings or structures, and any existing buildings or structures do not adversely affect health or life safety aspects of the new structure; or
 - b. the owner undertakes to alleviate any health or life issues created by the construction or occupancy of the new building or structure. The building inspector may make alleviating the issue a condition of the permit, and may require the owner to secure its undertaking by providing a section 219 Land Title Act covenant. Without limiting the requirements that the building inspector can require in the section 219 covenant, the covenant may prohibit occupancy of the new building or structure until the health and life safety issues have been alleviated to the satisfaction of the building inspector.
- (3) As an exception to Section 2.5.5(1), if the building permit application is for the same building or structure for which an Infraction Notice has been issued, the building inspector may issue a permit if:
 - a. the owner satisfies the building inspector that the issue is capable of being rectified; and the owner undertakes to rectify the issue. The building inspector may make rectifying the issue a condition of the permit, and may secure the owner's undertaking by requiring the owner provide a section 219 Land Title

Act covenant. Without limiting the requirements that the building inspector can require in the section 219 covenant, the covenant may prohibit occupancy of the building or structure until the existing health and life safety issues have been alleviated to the satisfaction of the building inspector; or

- b. it is practically unfeasible to rectify the subject matter of the Infraction Notice, and the building inspector is satisfied that issuing a building permit for the subject matter of the building permit application would not adversely affect any existing life safety or health issues with the building or structure. The building inspector may note on an occupancy permit for the work that the occupancy permit relates only to the work authorized by the building permit, and that the issuance of the permit does not relate to any previous construction or work. The building inspector may also require the owner to provide a section 219 Land Title Act covenant requiring the owner to only construct the work in accordance with the submitted plans, and releasing and indemnifying the CRD and the building official from and against any liability resulting from construction and occupancy of the building, including any past construction.

(4) Despite having discretion in Section 2.5.5(2):

- a. there is no obligation on a building official to provide an advance ruling or decision on the exercise of their discretion to an owner or potential owner in advance of receipt of a completed action plan; and
- b. there is no obligation on a building official to exercise discretion in favour of an owner.

(BI 4403, 4535)

2.5.6 Partial Permit

A building official may issue a building permit for a portion of a building or structure before the design, plans and specifications for the entire building or structure have been accepted, provided sufficient information has been provided to the Capital Regional District to demonstrate to the building official that the portion authorized to be constructed substantially complies with this Bylaw and other applicable bylaws and the Permit fee applicable to that portion of the building or structure has been paid. The issuance of the Permit, notwithstanding the requirements of this Bylaw, applies to the remainder of the building or structure as if the Permit for the portion of the building or structure had not been issued. This section does not apply to single family dwellings and accessory buildings.

2.5.7 No person shall rely on the review or acceptance of the design, drawings, or specifications nor any inspection made by a building official as establishing compliance with the *Building Code*, this Bylaw, any other enactment or any standard of construction.

2.5.8 An owner shall arrange for transportation of a building official to the property on which a building or structure is being constructed, where the location of the property is remote or not accessible by motor vehicle. Vessels used for the marine transportation of a building official shall comply with Transport Canada's Small Commercial Vessel Safety Guide.

2.5.9 Permit Renewal

- (1) Where the rights of an owner under a Permit terminate under section 2.5.2, the owner may apply to renew the Permit provided the renewal application is made no later than 30 days after the expiry of the Permit.
- (2) Where all of the deficiencies listed on a Conditional Certificate of Occupancy have not been addressed to the satisfaction of the building inspector within 12 months of the issuance of the Conditional Certificate of Occupancy, the owner may apply to renew the Conditional Certificate of Occupancy, provided the renewal application is made no later than 30 days after the expiry of the Conditional Certificate of Occupancy.
- (3) The fee for an application under sections 2.5.9(1) or (2) shall be \$300.00.
- (4) Upon receipt of an application under sections 2.5.9(1) or (2), a building inspector may renew the Permit or Conditional Certificate of Occupancy, as applicable, for a period not to exceed 12 months.
- (5) A Permit or Conditional Certificate of Occupancy may only be renewed once under this section 2.5.9.

(BI 4403)

2.5.10 Extension of a Permit

- (1) In addition to a renewal under section 2.5.9, a Building Official may extend the period of time set out under section 2.5.2 where construction has not commenced, or has been discontinued, due to adverse weather, strikes, or material or labour shortages. The maximum period of an extension is 12 months.

(BI 4538)

2.6 CERTIFICATE OF OCCUPANCY

- 2.6.1** An owner must obtain a Certificate of Occupancy, on the form attached as Appendix F to this Bylaw, prior to occupying a building or structure. Certificates of Occupancy are not required for accessory buildings.
- 2.6.2** A building official shall not issue a Certificate of Occupancy unless:
 - (1) all letters of assurance have been submitted (when required) in accordance with Section 2.3.4 and Section 3.4.2 of this Bylaw, and
 - (2) all aspects of the work requiring inspection and an acceptance pursuant to Section 3.5.4 of this Bylaw have been inspected and accepted.

Notwithstanding Sections 2.6.2(1) and 2.6.2(2), where owing to strikes, lock-outs or other emergencies, one or more of the inspections of buildings or structures required by this Bylaw have not been carried out, the building official may issue a Certificate of Occupancy stating the building or structure is substantially complete and suitable for occupancy if satisfied, after a final inspection, that the building is fit for occupancy, but the certificate shall list those inspections which were not carried out and shall state that the Certificate does not imply approval of such stages of construction.

2.6.3 Conditional Certificate of Occupancy

- (1) A building official may issue a Conditional Certificate of Occupancy, on the form attached as Appendix E to this Bylaw, for part of a building or structure when that part of the building or structure is self-contained, provided with essential services and meets requirements set out in Section 2.6.2 of this Bylaw.
- (2) A Conditional Certificate of Occupancy may be issued for a single family dwelling and is valid for a period of 12 months from date of issue.
- (3) If at a date 12 calendar months from the date a Conditional Certificate of Occupancy is issued, all of the deficiencies listed on the Certificate have not been addressed to the satisfaction of the building inspector Section 2.5.10 Renewal shall apply.
- (4) If upon expiry of a Permit, an owner desires to obtain a Certificate of Occupancy for a single family dwelling, he or she may apply for a new Permit under Section 2.5.3.
- (5) A Conditional Certificate of Occupancy may contain such conditions, including restrictions, on occupancy of the building or structure, or portion thereof, as the Building Official deems necessary and desirable, and may list deficiencies required to be addressed to the satisfaction of the Building Official prior to the issuance of a Certificate of Occupancy.

(BI 4403)

2.6.4 Revocation of Certificate of Occupancy

A building official may revoke a Certificate of Occupancy or Conditional Certificate of Occupancy where:

- (1) a condition on a Conditional Certificate of Occupancy is breached;
- (2) the Certificate of Occupancy was issued in error; or
- (3) the Certificate of Occupancy was issued on the basis of false or incorrect information.

The revocation shall be in writing and transmitted to the Owner by registered mail, and deemed served at the expiration of three days after the date of mailing.

PART 3 PROHIBITIONS AND OBLIGATIONS

3.1 GENERAL

3.1.1 Work Without Permits

No person shall commence or continue any construction, alteration, reconstruction, demolition, removal or relocation of any building or structure or other work related to construction, for which a Permit is required under this Bylaw unless a building official has issued a valid and subsisting Permit for the work.

(BI 4403)

3.1.2 Demolish or Deconstruct

No person shall demolish or deconstruct a building or structure unless a building official has issued a valid and subsisting demolition or deconstruction permit for the work.

3.1.3 Occupancy

No person shall occupy or use any building or structure unless a valid and subsisting Certificate of Occupancy has been issued by a building official for the building or structure. No person shall occupy or use any building contrary to the terms of any Permit issued or contrary to any notice given by a building official.

Tampering with Notices

No person shall, unless authorized in writing by a building official, reverse, alter, deface, cover, remove or in any way tamper with any notice, Permit or certificate posted upon or affixed to a building or structure pursuant to this Bylaw.

3.1.4 Approved Plans

No person shall do any work that is substantially at variance with the approved design, plans or specifications of a building, structure or other works for which a Permit has been issued, unless that variance has been accepted in writing by a building official.

3.1.5 Obstruction to Entry

No person shall obstruct the entry of a building official or other authorized official of the Capital Regional District on a property in the administration of this Bylaw.

3.1.6 Cessation of Work

No person shall continue to do any work upon a building or structure or any portion of it after the building official has ordered cessation or suspension of work on it.

3.1.8 Work Contrary to Requirements

No person shall do any work or carry out any construction contrary to a provision or requirement of this Bylaw, the *Building Code* or any other applicable enactment.

3.2 BUILDING OFFICIALS

3.2.1 Each building official may:

- (1) administer this Bylaw, but owes no public duty to do so; and

- (2) keep records of Permit applications, Permits, notices and orders issued, inspections and tests made, and may retain copies of all documents related to the administration of this Bylaw.

(BI 4403)

3.2.2 Authority

The building official:

- (1) is hereby authorized to enter, at all reasonable times, and in accordance with section 16 of the *Community Charter*, upon any property subject to the regulations of this Bylaw and the *Building Code*, in order to ascertain whether the regulations or directions under them are being observed;
- (2) is directed, where any dwelling, apartment or guest room is occupied, to obtain the consent of the occupant or provide written notice 24 hours in advance of entry pursuant to Section 3.2.2(1);
- (3) may order the correction of any work which is being or has been improperly done under any Permit;
- (4) may order the cessation of work that is proceeding in contravention of this Bylaw, the *Building Code* or any other applicable bylaw by advising the Permit holder by letter or by a written notice on a card posted adjacent to the work;
- (5) may direct that tests of materials, devices, construction materials, structural assemblies, or foundation conditions be undertaken, or sufficient evidence be submitted, at the expense of the owner, where such evidence is necessary to determine whether the materials, devices, construction or foundation meet the requirements of this Bylaw, the *Building Code*, or any other applicable enactment. The records of such tests shall be kept available for inspection during the construction of the building as required by the building official.

3.3 RESPONSIBILITY OF THE OWNER

3.3.1 Every owner shall ensure that all construction complies with the *Building Code*, this Bylaw and other applicable enactments.

3.3.2 Every owner to whom a Permit is issued shall, during construction:

- (1) post and maintain the Permit in a dry and conspicuous place on the property in respect of which the Permit was issued;
- (2) keep a copy of the accepted designs, plans and specifications on the property; and
- (3) post the civic address on the property in a location visible from any adjoining streets.

3.3.3 Every owner shall, when notified of deficiencies by the building official, perform such alterations, corrections or replacements as may be necessary to ensure the work complies

with this Bylaw, the *Building Code*, or any other applicable enactment or regulation, and advise the building official when the work is ready for re-inspection.

3.4 PROFESSIONAL DESIGN AND FIELD REVIEW

3.4A PROFESSIONAL DESIGN (POTABLE WATER SYSTEMS)

3.4A.1 In this section, “On Site Water Collection” means a system for the collection of rainwater to be used as a source of potable water.

3.4A.2 As an exception to section 2.1.7(1), where an owner intends to provide potable water for a residential building that includes On Site Water Collection, the owner must provide to the building official certification by a qualified professional that the plans for the On Site Water Collection system, comply with the Building Code and other applicable enactments respecting safety of water supply and will provide the dwelling with potable water.

3.4A.3 A building official may require an applicant for a building permit to provide the Capital Regional District with the certification referred to in section 3.4A.2.

3.4A.4 In issuing a building permit where the owner has provided the certification of a qualified professional under section 3.4A.2:

- (a) the Capital Regional District is not approving the water system, does not assume any responsibility to review or inspect the installation of the water system or the quality or quantity of the water from On Site Water Collection and will rely upon the certification provided by the engineer; and
- (b) the portion of the Building Permit fee associated with the water catchment system shall be reduced by 10%.

(BI 3780)

3.4.1 When a building official considers that the site conditions, size or complexity of a development or an aspect of a development warrant, he or she may require a registered professional to provide design and plan certification and field review supported by letters of assurance in the form of Schedule B referred to in of Part 2 - Administrative Provisions of the *Building Code*.

3.4.2 Prior to the issuance of a Certificate of Occupancy for a complex building, or simple building in circumstances where letters of assurance have been required in accordance with sections 2.3.4 or 3.4.1 of this Bylaw, the owner shall provide the building official with letters of assurance in the form of Schedule C-A and C-B as is appropriate, referred to in of Part 2 - Administrative Provisions of the *Building Code*.

3.4.3 When a registered professional provides letters of assurance in accordance with sections 2.3.4 and 3.4.1 of this Bylaw, he or she shall also provide proof of professional liability insurance to the building official.

3.5 INSPECTIONS

3.5.1 When a registered professional provides letters of assurance in accordance with sections 2.3.4 and 3.4.1 of this Bylaw, the Capital Regional District will rely solely on field reviews undertaken by the registered professional and the letters of assurance submitted pursuant to Section 3.4.2 of this Bylaw as certification that the construction substantially conforms to the design, plans and specifications and that the construction complies with the *Building Code*, this Bylaw and other applicable enactments.

3.5.2 Notwithstanding Section 3.5.1 of this Bylaw, a building official may attend the site from time to time during the course of construction to ascertain that the field reviews are taking place and to monitor the field reviews undertaken by the registered professionals.

3.5.3 A building official may attend periodically at the site of the construction of simple buildings or structures to ascertain whether the health and safety aspects of the work are carried out in substantial conformance with the portions of the *Building Code*, this Bylaw and any other applicable enactment.

3.5.4 The owner, or his or her representative, shall give at least 24 hours notice to the Capital Regional District when requesting an inspection of the following aspects of the work and, in the case of a simple building, shall obtain an inspection and receive a building official's acceptance prior to concealing any aspect of the work:

(1) the foundation and footing forms, before concrete is poured; location to be verified by legal survey;

(BI 4403)

(2) installation of perimeter drain tiles, roof water leader system and damp-proofing, prior to backfilling;

(BI 4403)

(3) the preparation of ground, including ground cover and insulation when required, prior to the placing of a concrete slab (as applicable);

(BI 4403)

(4) rough-in of all chimneys and fireplaces and solid fuel and oil burning appliances;

(5) framing inspection, after the roof, all framing, fire blocking and bracing is in place, and all pipes, vents, chimneys, electrical wiring, roof space and crawlspace vents are completed;

(6) water and sewer connections (as applicable);

(7) rough-in plumbing;

(8) ventilation;

- (9) building envelope;
- (10) lath;
- (11) stucco (1st, 2nd, final) (as applicable);
- (12) insulation and vapour barrier;
- (13) chimney (as applicable);
- (14) solid fuel burning appliance, fireplace (as applicable);
- (15) health and safety aspects of the work when the building or structure is substantially complete and ready for a Conditional Certificate of Occupancy
- (16) final inspection/Certificate of Occupancy.

3.5.5 A Building Official shall attempt to accommodate the requested inspection date and time for any inspection requested under section 3.5.4. If the Building Official is unable to attend at the requested date and time due to travel distance or time constraints, the inspection shall occur as soon as reasonably practicable thereafter.

(BI 4538)

3.5.53.5.6 The requirements of Section 3.5.4 of this Bylaw do not apply to any aspect of the work that is the subject of a registered professional's letter of assurance provided in accordance with sections 2.3.4, 3.4.1 or 3.4.2 of this Bylaw.

(BI 4538)

PART 4 ADMINISTRATIVE PROVISIONS

4.1 PENALTIES AND ENFORCEMENT

4.1.1 Stop Work Notice

A building official may order the cessation of any work that is proceeding in contravention of the *Building Code* or this Bylaw by posting a Stop Work Notice.

- (1) The owner of a property on which a Stop Work Notice has been posted, and every other person, shall cease all construction work immediately and shall not do any work until all applicable provisions of this Bylaw have been substantially complied with and the Stop Work Notice has been rescinded in writing by a building official.
- (2) Every person who commences work requiring a Permit without first obtaining such a Permit shall, if a Stop Work Notice is issued, pay an additional charge equal to 100% of the required Permit fee prior to obtaining the required building permit.

4.1.2 Do Not Occupy

Where a person occupies a building or structure or part of a building or structure in contravention of Section 3.1.3 of this Bylaw a building official may post a Do Not Occupy Notice on the affected part of the building or structure.

4.1.3 Penalty

Every person who contravenes any provision of this Bylaw commits an offense punishable on summary conviction and shall be liable to a fine of not more than \$10,000 (ten thousand dollars) or to imprisonment for not more than six months.

PART 5 GENERAL

5.1 SCHEDULES

The schedules annexed hereto shall be deemed to be an integral part of this Bylaw.

5.2 SEVERABILITY

If any section of this Bylaw is for any reason held to be invalid, by the decision of any court, such decision shall not affect the validity of the remaining portions of this Bylaw.

5.3 REPEAL OF BYLAWS

Capital Regional District Bylaw 2990, "Building Regulation Bylaw No. 4, 2002, and amendment bylaws 3099, 3172, 3265 and 3394, are hereby repealed.

5.4 CITATION

This Bylaw may be cited for all purposes as "Building Regulation Bylaw No. 5, 2010".

READ A FIRST TIME THIS	13 th	day of	October	2010
READ A SECOND TIME THIS	13 th	day of	October	2010
READ A THIRD TIME THIS	9 th	day of	March	2011
ADOPTED THIS	9 th	day of	March	2011

CHAIR

CORPORATE OFFICER

BYLAW SCHEDULES

APPENDIX A FIREPLACE-CHIMNEY-WOOD STOVE APPLICATION FEES

FEE CALCULATIONS FOR PROPOSED WORK

Check the appropriate options below	Fees (\$)	Number	Totals
Construct CHIMNEY – one single flue (masonry or metal)	\$44 X		=
Each additional flue in masonry chimney above	\$22 X		=
Construct FIREPLACE connected to single flue	\$22 X		=
SOLID FUEL BURNING APPLIANCE connected at time of construction	\$22 X		=
SOLID FUEL BURNING APPLIANCE connected to existing acceptable chimney	\$44 X		=
CHIMNEY reline, repair or alter (masonry)	\$44 X		=
* APPLIANCES CONNECTED TO CHIMNEYS MUST COMPLY WITH AND BE INSTALLED TO ALL APPLICABLE REGULATIONS (See Building Inspector)	TOTAL PERMIT FEE		

PLUMBING PERMIT APPLICATION (RESIDENTIAL) FEES

FEE SCHEDULE	Total No. of Fixtures	VALUE (\$)	UNITS	Fee
Fee (first 10 fixtures)		\$22 Per fixture	X	=
Fee (additional fixtures)		\$17 per fixture	X	=
Hot Water Tank (domestic)		\$22 per tank	X	=
Lawn Sprinkler System		\$49	X	=
Hot Water Heating Boiler Connection		\$17	X	=
Connect to Existing Rough-In		\$12 per fixture	X	=
Alter Waste Line (no additional fixtures)		\$44	X	=
Water Connection		\$22	X 1	=
Alter Water Lines or Add Special Valve		\$22	X	=
Sanitary Sewer Connection		\$22	X 1	=
Storm or Sewage Lift Station		\$17	X	=
Remove or Make Safe Private Sewage System		\$17	X	=
Installation of Floor Drain		\$12 each	X	=
Install or Alter Rain Water Leads or Roof Drain		\$12	X	=
Install or Replace Cistern for Potable Water		\$34	X	=
Lawn Service Stand Pipe (not part of building plumbing)		\$22	X	=
Area Drains, Sumps, Catch Basins		\$22	X	=
Fire Protection Sprinkler System		\$22	X	=
Each Group of 10 Sprinklers or Portion Over First 10		\$17	X	=
TOTAL FEES				

PLUMBING PERMIT APPLICATION (COMMERCIAL) FEES

FEE SCHEDULE	Total No. of Fixtures	VALUE (\$)	UNITS	Fee
Fee (first 10 fixtures)		\$22 per fixture	X	=
Fee (additional fixtures)		\$17 per fixture	X	=
Hot Water Tank (domestic)		\$22 per tank	X	=
Lawn Sprinkler System		\$49	X	=
Hot Water Heating Boiler Connection		\$17	X	=
Connect to Existing Rough-In		\$12 per fixture	X	=
Alter Sanitary/Storm Drainage System (existing)		\$44	X	=
Water Connection		\$22	X	=
Sanitary Sewer Connection		\$22	X	=
Alter or Add to Water System		\$22	X	=
Install Floor Drain or Funnel Drain		\$12 each	X	=
Install or Alter Rain Water Leads or Roof Drain		\$12	X	=
Install or Replace Cistern for Potable Water		\$34	X	=
Installation of Building Sanitary Sewer		\$21 per 100'	X	=
Installation of Building Storm Sewer		\$21 per 100'	X	=
FIRE PROTECTION				
Fire Protection Sprinkler System		\$21 each first 10 heads	X	=
Each Group of 10 Sprinklers or Portion over First 10		\$21	X	=
Fire Stand Pipe		\$21	X	=
Fire Hydrant		\$32 each	X	
OUTSIDE SERVICES				
Pumping Station Other Than for S.F.D.		\$32 each	X	=
Lawn Service Stand Pipe (not part of building plumbing)		\$21	X	=
Storm or Sanitary Lift Station		\$32 each	X	=
Remove or Make Safe Private Sewage System		\$16	X	=
Area Drains / Catch Basins / Sumps		\$21	X	=
Manholes and Interceptors (all kinds)		\$21	X	=
Acid Neutralizers or Special Control Valve or Cap Off Sanitary, Storm, Water Connections		\$21	X	=
TOTAL FEES				

DEMOLITION – DECONSTRUCTION PERMIT APPLICATION FEES

	Demolition Fee	Deconstruction Fee	Totals
Buildings up to 400 square feet in area	\$100	\$0	
Buildings over to 400 square feet in area	\$200	\$0	
Rendering private sewage disposal system safe	\$21	\$21	
Cap building sewer	\$16	\$16	
Total Permit Fee			

APPENDIX B
PERMIT FEES BASED ON CONSTRUCTION VALUE

TOTAL CONSTRUCTION VALUE AS PRESCRIBED IN 2.4.4, APPENDIX "C" AND "D"	FEE
Less than \$100.00	\$ NIL
Over \$100 and not over \$1,000	\$50
Each additional \$1,000.00 or fraction thereof and not exceeding \$5,000.00	\$25
Each additional \$1,000.00 or fraction thereof and not exceeding \$400,000.00	\$13
Each additional \$1,000.00 or fraction thereof over \$400,000.00	\$10

APPENDIX C
CONSTRUCTION VALUES FOR BUILDINGS OTHER THAN SINGLE FAMILY DWELLINGS,
FACTORY BUILT HOMES, MOBILE HOMES, AND MOVED BUILDINGS

TYPE OF BUILDING	TYPE OF CONSTRUCTION	VALUE	
		PER SQ. FOOT	PER METER SQ.
Hotel / Motel	Wood Frame	\$200	\$2,152.00
Hotel / Motel	Reinforced masonry or concrete	\$260	\$2,797.00
Hotel / Motel	Steel frame	Contract	Value
Town House or Apartment	Wood Frame	\$200	\$2,152.00
Town House or Apartment	Reinforced masonry or concrete	\$260	\$2,797.00
Town House or Apartment	Steel frame	Contract	Value
Commercial Building (shell only)	Wood Frame or Heavy Timber	\$150	\$1,614.00
Commercial Building (shell only)	Reinforced masonry or concrete	\$200	\$2,152.00
Commercial Building (shell only)	Steel frame	\$150	\$1,614.00
Commercial Building Except Offices and Restaurant	Completion of Interior	\$80	\$860.80
Commercial Buildings Restaurants	Completion of Interior	\$110	\$1,183.60
Commercial Building Office Interiors	Completion of Interior	\$80	\$860.80
Industrial Buildings (shell only)	Wood Frame or Heavy Timber	\$110	\$1,183.60
Industrial Buildings (shell only)	Steel Frame	\$110	\$1,183.60
Industrial Buildings	Reinforced masonry or concrete	\$150	\$1,614.00
Industrial Buildings (interiors)	Completion of Interior	\$35	\$376.60
Temporary Buildings	Wood Frame	\$70	\$753.20

APPENDIX D
CONSTRUCTION VALUES FOR SINGLE AND TWO FAMILY DWELLINGS, FACTORY BUILT
HOMES, MOBILE HOMES, AND MOVED BUILDINGS IN THE ELECTORAL AREAS OF JUAN DE
FUCA, SALT SPRING ISLAND, SOUTHERN GULF ISLANDS

FLOOR AREA OR TYPE OF STRUCTURE	VALUE	
	PER SQ. FT.	PER METER SQ.
Finished Main* Floor Areas	\$200	\$2,152
Finished Areas Other Than Main* Floor	\$150	\$1,614
Finishing previously Unfinished Basement, ** Attics, or Other Floors	\$45	\$484.20
Garages and/or Workshops, Barns, or Sheds (Semi-Detached) Floor + Roof + Wall	\$90	\$968.40
Carports (Roof)	\$35	\$376.60
Sundecks (Floor)	\$35	\$376.60
Additions Where an Existing Wall Forms Part of the Additions	\$200	\$2,152
Finished Floor Areas of Factory Build Homes, Mobile Homes or Moved Dwellings	\$100	\$1,076

* Main Floor shall be defined as the floor area where the main activity takes place, usually the floor where the living room, dining room, and/or kitchen are located.
** Basement shall be defined as in the British Columbia Building Code

APPENDIX E

Appendix E	Conditional Certificate of Occupancy			Permit No.
ISSUED BY THE BUILDING INSPECTION DIVISION OF THE CAPITAL REGIONAL DISTRICT				
FOLIO No. _____				
OWNER _____		ADDRESS _____		
		HOUSE	STREET	CITY
LEGAL DESCRIPTION _____		SECTION	BLOCK	PLAN
LOT _____		LAND DISTRICT _____		
THE CONDITIONAL CERTIFICATE OF OCCUPANCY IS ISSUED SUBJECT TO THE FOLLOWING CONDITIONS:				
<p>1. The deficiencies listed below shall be rectified to the satisfaction of the building inspector</p> <p>2. Upon satisfactory completion of all deficiencies the building inspector may issue a CERTIFICATE OF OCCUPANCY for the building.</p> <p>3. If at a date 12 calendar months from the date of issue of this CONDITIONAL CERTIFICATE OF OCCUPANCY, all of the deficiencies listed below have not been addressed to the satisfaction of the building inspector, the permit will need to be renewed for an additional one year period. A renewal fee of \$300 shall be charged for each renewal, to a maximum of three years after which the permit will expire and the Capital Regional District will register a notice against the title of the land, referring to the outstanding deficiencies. The notice will remain in place until the deficiencies have been rectified to the satisfaction of the building inspector. Upon expiry of a building permit and in order for the building inspector to conduct the required final inspection and issue the CERTIFICATE OF OCCUPANCY, it will be necessary for the owner to apply for a permit to complete the outstanding work. Upon completion of all deficiencies the notice will be removed and the building inspector may issue a permanent CERTIFICATE OF OCCUPANCY for the building.</p> <p>4. The CONDITIONAL CERTIFICATE OF OCCUPANCY confirms only that the building is believed to meet the minimum level of health and safety requirements and is not a representation, warranty, assurance or statement that the building complies with the Building Code, the Building Regulation Bylaw of the CRD, or any other applicable enactments, codes, or standards.</p>				
<p>The following list of deficiencies should not be construed as a definitive list of all requirements.</p> <p>Known deficiencies outstanding at date of issue of CONDITIONAL CERTIFICATE OF OCCUPANCY are:</p> <div style="border: 1px solid black; height: 200px; margin-top: 10px;"></div>				
<p>Date of Sewerage System Certification _____</p> <p>Authorized Use <input type="checkbox"/> SFD <input type="checkbox"/> Other _____</p>				
<p>APPROVED FOR OCCUPANCY _____</p> <p>BUILDING INSPECTOR</p> <p>DATE _____</p>				

APPENDIX F

Appendix F	Certificate of Occupancy			
ISSUED BY THE BUILDING INSPECTION DIVISION OF THE CAPITAL REGIONAL DISTRICT PURSUANT TO THE BRITISH COLUMBIA LOCAL GOVERNMENT ACT		Hold No. Permit No.		
THIS IS TO CERTIFY that the premises named herein have been constructed under the authority of a valid Building Permit and have received the final inspection.				
THIS BUILDING IS NOW COMPLETED AND READY FOR OCCUPANCY.				
FOLIO No.				
OWNER	ADDRESS			
	HOUSE	STREET	CITY	POSTAL CODE
LEGAL DESCRIPTION				
LOT	SECTION	BLOCK	PLAN	LAND DISTRICT
<p>No action may be brought against the Capital Regional District or its officials or servants for anything done or left undone in good faith in the performance or intended performance of any authority conferred or duty imposed under this or any other Bylaw adopted by the Capital Regional District pursuant to the British Columbia Local Government Act.</p>				
<p>NO REPRESENTATION BY THE CRD Neither the issuance of a permit, Certificate of Occupancy or Conditional Certificate of Occupancy under this bylaw nor the acceptance or review of plans, drawings or specifications or supporting documents, nor any inspections made by or on behalf of the Capital Regional District constitute in any way a representation, warranty, assurance or statement that the Building Code, this Bylaw or any other applicable enactments, codes, and standards have been complied with.</p>				
<p>All building in the Capital Regional District Electoral Areas is regulated by Building Regulation Bylaw No. 3741.</p>				
<hr style="width: 100px; margin: 0 auto;"/> Date		<hr style="width: 100px; margin: 0 auto;"/> Signature of Owner		
<hr style="width: 100px; margin: 0 auto;"/> Date		<hr style="width: 100px; margin: 0 auto;"/> Signature of Building Inspector		

APPENDIX G

Appendix G	BUILDING PERMIT CAPITAL REGIONAL DISTRICT Building Inspection Division G.S.T. Registration No. R121299836			Hold No.
			Permit No.	
SOUTHERN GULF ISLANDS JUAN DE FUCA SALT SPRING ISLAND PENDER ISLAND WILLIS POINT & MALAHAT BUILDING INSPECTION BUILDING INSPECTION BUILDING INSPECTION BUILDING INSPECTION 3-7450 Butler Rd. 206 -118 Fulford Ganges Rd. P.O. Box 113, 30-4605 Bedwell Harbour Rd. P.O. Box 1000, 625 Fisgard St. Sooke BC, V9Z 1N1 Salt Spring Island BC, V8K Pender Island BC, V0N 2M0 Victoria BC, V8W 2S6 (250) 642-8109, Fax-5274 (250) 537-2711, Fax-9633 (250) 629-3424 (250) 360-3230, Fax-3232 Toll Free: 1-866-475-1581				
PLEASE PRINT CLEARLY				
Pursuant to the regulations applicable to the CAPITAL REGIONAL DISTRICT:				
Mr. / Mrs. / Ms. _____ NAME _____ HOUSE _____ STREET _____ CITY _____ POSTAL CODE _____				
Being the owner is hereby granted a PERMIT to: _____				
Located at: _____ and as shown by the accompanying plan. SITE ADDRESS (UNIT #, HOUSE, STREET, CITY, POSTAL CODE)				
Telephone Number: _____ LEGAL DESCRIPTION _____ FOLIO No. _____				
LOT _____ SECTION _____ BLOCK _____ PLAN _____ LAND DISTRICT _____				
Owner _____ FIRST & LAST NAME _____ ADDRESS (UNIT #, HOUSE, STREET, CITY, POSTAL CODE)				
Builder _____ FIRST & LAST NAME _____ ADDRESS (UNIT #, HOUSE, STREET, CITY, POSTAL CODE)				
THIS PERMIT IS ISSUED SUBJECT TO THE FOLLOWING SPECIAL REQUIREMENTS:				
Notes: 1. Permit issued according to the above SPECIAL REQUIREMENTS, the accompanying plans and the applicable regulations. 2. Inspections must be requested in accordance with Building Regulation Bylaw requirements. At least 24 hours notice is required. 3. A re-inspection fee will be charged in accordance with the Building Regulation Bylaw. 4. Work related to this permit must be started within 6 months of the date of issue and must not be discontinued or suspended for more than one year. Separate permits are required for plumbing installations, and fireplace / chimney construction. 5. A CERTIFICATE OF OCCUPANCY MUST BE APPLIED FOR AND OBTAINED PRIOR TO THE OCCUPANCY OF ANY BUILDING.				
LIMITATION OF LIABILITY Neither the issuance of a permit under this bylaw nor the acceptance or review of plans, drawings or specifications or supporting documents, nor any inspections made by or on behalf of the Capital Regional District shall in any way relieve the owner or his or her representatives from full and sole responsibility to perform the work in full accordance with the British Columbia Building Code, the Building Regulation Bylaw of the CRD and all other applicable enactments, codes, and standards.				
FREEDOM OF INFORMATION WAIVER Personal information contained on this form is collected under the authority of the Local Government Act and is subject to the Freedom of Information and Protection of Privacy Act. The personal information will be used for purposes of issuing this permit. Enquiries about the collection or use of information on this form can be directed to the appropriate building inspection office listed at the top of this appendix.				
All building in the Capital Regional District Electoral Areas is regulated by Building Regulation Bylaw No. 3741.				
FEES SUMMARY				
AREA OF BUILDING		Fee		
ESTIMATED COST				
PLUMBING PERMIT (residential)				
PLUMBING PERMIT (commercial)				
CHIMNEY / APPLIANCE PERMIT				
DEMOLITION / DECONSTRUCTION PERMIT				
OTHER				
Total Permit Fee		Payment By <input type="checkbox"/> cheque date _____ <input type="checkbox"/> cash		
		DATE PERMIT GRANTED		
BUILDING INSPECTOR CAPITAL REGIONAL DISTRICT				

REPORT TO REGIONAL WATER SUPPLY COMMISSION MEETING OF WEDNESDAY, MAY 17, 2023

SUBJECT **Bylaw No. 4099 – Water Conservation Amendment: Once-Through Cooling Equipment**

ISSUE SUMMARY

Staff were directed to investigate options for reinstating a Water Conservation Bylaw ban on once-through cooling equipment (OTC).

BACKGROUND

In 2016, the Capital Regional District (CRD) created Bylaw No. 4099, “Consolidated Capital Regional District Water Conservation Bylaw No. 1, 2016”, which included a ban on OTC equipment (Appendix A). OTC service providers and approximately 200 businesses were notified in early 2017 of the upcoming ban.

In late 2017, staff became aware of changes to the BC Building Code (BCBC) and the implementation of the *Building Act* (BC) that had the potential to affect some CRD services. Staff met with representatives from the Ministry of Municipal Affairs and Housing and understood that the Bylaw No. 4099 prohibition against OTC equipment was in conflict with the revised BCBC. In response to these provincial changes, Bylaw No. 4248 amended the existing Water Conservation Bylaw to remove definitions and sections related to OTC.

At the June 16, 2021 Regional Water Supply Commission meeting, staff were directed to investigate options for reinstating the CRD Water Conservation Bylaw’s ban on the use of OTC equipment. Following discussions with provincial staff and a CRD internal legal review of options, staff have now developed a regulatory approach that would be effective within the CRD’s existing regulatory framework.

Bylaw No. 4549, “Capital Regional District Water Conservation Bylaw No. 1, 2016, Amendment Bylaw No. 3, 2023” (Appendix B), amends the Water Conservation Bylaw by inserting definitions and clauses to regulate the use of water for once-through cooling rather than the previous approach of regulating OTC equipment. The amendment contains a five-year period until enforcement, to allow time to budget and replace equipment, and also allows for emergency use and exceptions as approved by the General Manager.

Bylaw No. 4553, “Capital Regional District Ticket Information Authorization Bylaw 1990, Amendment Bylaw No. 76, 2023” (Appendix C) amends the CRD’s ticketing bylaw to add a new offence of “Use Water for Once-Through Cooling” and corrects item numbering errors introduced by the previous ticketing amendment in 2020.

These amendments will be supported with the current OTC rebate program, as well as engagement activities, such as a follow-up letter and a Frequently Asked Questions brochure to the service providers and businesses that were contacted in 2017, and a new messaging campaign promoting the regulatory change and emphasizing the economic and water conservation benefits of OTC equipment replacement.

ALTERNATIVES

Alternative 1

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

1. That Bylaw No. 4549, “Capital Regional District Water Conservation Bylaw No. 1, 2016, Amendment Bylaw No. 3, 2023”, be introduced and read a first, second, and third time; and
2. That Bylaw No. 4549 be adopted.
3. That Bylaw No. 4553 “Capital Regional District Ticket Information Authorization Bylaw 1990, Amendment Bylaw No. 76, 2023” be introduced and read a first, second, and third time; and
4. That Bylaw No. 4553 be adopted.

Alternative 2

That Bylaw No. 4549, “Capital Regional District Water Conservation Bylaw No. 1, 2016, Amendment Bylaw No. 3, 2023” be referred to staff for changes.

SOCIAL IMPLICATIONS

Once-through cooling systems use clean potable water for the purpose of removing heat before discharging the water to sewer. Examples of OTC are refrigeration compressor units for walk-in coolers and freezers, ice machines, server room cooling systems and air conditioners.

A typical OTC unit (1 ton, 12,000 BTU/hour) uses about 1,600,000 litres of water per year per unit. Eliminating or reducing the use of this equipment will have a significant impact on the CRD's efforts to reduce regional water usage.

ECONOMIC IMPLICATIONS

Businesses that have already converted to non-OTC equipment see significant savings on their water bill and a short payback period on their investment. Switching to an air-cooled walk-in cooler unit from a typical OTC unit costs about \$5,000-\$8,000 and the average payback period is approximately two years. This is a very quick return on investment for equipment that has a positive impact on reducing the region's overall water consumption and, as an additional benefit, utility savings continue throughout the life of the unit.

REGULATORY IMPLICATIONS

Changes in the BCBC meant that local governments have no authority to regulate building standards where they are the subject of the code or any other provincial enactment. As a result, the CRD's previous approach to regulate once-through cooling equipment conflicted with the code.

Shifting the OTC ban to focus on regulating the use of the water instead of the OTC devices is within the CRD's existing powers to regulate the use of the CRD's regional water supply and is consistent with how other water uses are regulated (e.g., lawn watering).

CONCLUSION

The Regional Water Supply Commission directed staff to investigate options for reinstating the CRD Water Conservation Bylaw's ban on the use of one-through cooling (OTC) equipment. This ban was rescinded in 2017 in response to changes to the BC Building Code that affected local government powers.

Following discussions with provincial staff and a CRD internal legal review of options, staff have now developed a regulatory approach that would be effective within the CRD's existing regulatory framework. Shifting the OTC ban to focus on regulating the use of water instead of the OTC equipment is within the CRD's powers and consistent with how other water uses are regulated.

RECOMMENDATION

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

1. That Bylaw No. 4549, "Capital Regional District Water Conservation Bylaw No. 1, 2016, Amendment Bylaw No. 3, 2023", be introduced and read a first, second, and third time; and
2. That Bylaw No. 4549 be adopted.
3. That Bylaw No. 4553 "Capital Regional District Ticket Information Authorization Bylaw 1990, Amendment Bylaw No. 76, 2023" be introduced and read a first, second, and third time; and
4. That Bylaw No. 4553 be adopted.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Larisa Hucheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ian Jesney, P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

ATTACHMENTS

Appendix A: Bylaw No. 4099 – "Capital Regional District Water Conservation Bylaw No. 1, 2016", Official Consolidation – April 30, 2021
Appendix B: Bylaw No. 4549 – A Bylaw to Amend Water Conservation Bylaw (Bylaw No. 4099)
Appendix C: Bylaw No. 4553 – A Bylaw to Amend Bylaw No. 1857, CRD Ticket Information Authorization Bylaw, 1990



BYLAW NO. 4099

CAPITAL REGIONAL DISTRICT WATER CONSERVATION BYLAW NO. 1, 2016

(As amended by Bylaw Nos. 4248 and 4261)

A bylaw to regulate water use

For further details please consult CRD's Environmental Protection Division,
Glenn Harris, Senior Manager, Environmental Protection
Phone: 250-360-3090

For reference to original bylaws and amendments,
please contact the Legislative Services department, Capital Regional District,
625 Fisgard Street, Victoria, B.C., V8W 2S6
Phone: 250-360-3129

CAPITAL REGIONAL DISTRICT

Bylaw No. 4099

WATER CONSERVATION BYLAW

WHEREAS under Section 335 of the *Local Government Act*, a regional district may regulate in relation to a service;

AND WHEREAS under section 335 of the *Local Government Act* a regional government has authority to regulate Water use even though a participating Municipality is responsible for Water distribution within that municipality;

AND WHEREAS the Capital Regional District (“CRD”) under the *Capital Region Water Supply and Sooke Hills Protection Act* (the “Act”) has established a Water supply local service sourcing drinking water from the Sooke Lake and Goldstream Reservoirs in the following participating municipalities:

The Corporation of the City of Victoria
The Corporation of the District of Oak Bay
The Corporation of the District of Saanich
Corporation of the Township of Esquimalt
District of Central Saanich
Town of Sidney
District of North Saanich
District of Metchosin
City of Colwood
Town of View Royal
City of Langford
District of Sooke
District of Highlands
That portion of the Juan de Fuca Electoral Area as shown in Schedule “B”.

AND WHEREAS the CRD supplies bulk Water to the following:

The Corporation of the City of Victoria
The Corporation of the District of Oak Bay
The Corporation of the District of Saanich
Corporation of the Township of Esquimalt
Saanich Peninsula Water Commission
Juan de Fuca Water Distribution Commission

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

1. Definitions

In this bylaw, the following terms, whether capitalized or not, have the following meanings:

“Automatic shut-off nozzle” means a nozzle, attached to a water hose, that shuts off the supply of water automatically unless the application of hand pressure allows the supply of water.

[Bylaw 4261]

“Board” means the Board of the Capital Regional District.

“Boat” means a vessel propelled on water by an engine, oars or sails.

“Boulevard” means that portion of any highway other than the paved, improved or main travelled roadway, driveway or sidewalk and includes any landscaped median.

“Bylaw Enforcement Officer” means a person appointed or contracted by the Board or the Council of a Municipality to enforce this bylaw.

“Commission” means the Regional Water Supply Commission.

“CRD” means the Capital Regional District.

“Even-Numbered Address” see “Odd-Numbered Address”

“Excess Water Use” means to apply or use more Water than is required to provide a service, produce a product or complete a task, and without limitation includes the application of Water to a hardscape, such as a sidewalk, driveway or parking lot, or to exterior windows or exterior building surfaces, through a hose or power-washer to the point that Water runs-off or spreads to surrounding areas.

“Exempted Person” means an Owner or Occupier of property identified in Schedule “A” as exempt or excused from one or more of the regulations under this bylaw.

“Farm” refers to a parcel of land classified as farmland for assessment and taxation purposes.

“Fill” means to completely fill or partially fill with Water an empty or substantially empty hot tub, swimming pool, fountain, wading pool, or similar structure, but for certainty does not include topping up with or adding Water in the normal course of operation, where the hot tub, swimming pool, fountain, wading pool, or similar structure is filled with Water and is in operation at the time Water Use Restrictions come into effect.

“General Manager” means the General Manager of the Capital Regional District Integrated Water Services Department.

“Irrigation System” means an irrigation system that consists of controllers, wiring, and accessories such as climate and soil sensors, piping, and emission devices such as sprinklers, rotors or micro-irrigation components that artificially supplies water to a landscaped area, lawn or garden.

“Lawn” or “Turf” means a cultivated area that surrounds or is adjacent to an institutional, commercial or residential building, and that is covered by grass, turf or other plants used as ground cover, such as but not limited to clover, and that is used for decorative, ornamental or recreational purposes.

“Micro-irrigation or Drip-irrigation System” means a system using irrigation components which consume less than 20 gallons per hour and operate at less than 25 Pounds per square inch to deliver Water to the root zone of the plant material being irrigated, and includes spray emitter systems (Micro-Sprays), point source emitters and linear tape systems as defined in the BC Trickle Irrigation Manual prepared and published by the Irrigation Industry Association of British Columbia (1999), but does not include weeper hoses or soaker hoses.

“Motion-Activated Sprinkler Device” means a water sprinkling device that automatically operates through detection of motion or similar event and is used to deter wildlife and other animals.

“Municipality” means the District of Sooke, District of Metchosin, City of Colwood, Town of View Royal, City of Langford, District of Highlands, that portion of the Juan de Fuca Electoral Area as shown on Schedule “B”, the Corporation of the City of Victoria, Corporation of the Township of Esquimalt, The Corporation of the District of Oak Bay, The Corporation of the District of Saanich, District of Central Saanich, District of North Saanich and the Town of Sidney.

“New Lawn” or “New Turf” means a lawn that is newly established either by seeding or the laying of new sod or turf on a property.

[Bylaw 4261]

“Newspaper” has the same meaning as in the *Community Charter*.

“Notice” means a Notice given under Section 5 of this bylaw.

[Bylaw 4261]

“Nursery” means a commercial business in which flowers, plants, trees or shrubs are grown or displayed for sale.

“Occupier” has the same meaning as in the *Community Charter*.

“Odd-Numbered Address” or “Even-Numbered Address” means the numerical portion of the street address of a property, and in the case of multi-unit commercial or residential complex such as but not limited to a townhouse, condominium or other strata-titled property, means the numerical portion of the street address that is assigned to the entire complex, and not the individual unit number.

“Over-Water” means to apply Water in a manner that saturates the lawn, Boulevard or landscaped area being watered to the point of saturation and results in Water spreading or running-off to other areas including, but not limited to, municipal storm drains.

[Bylaw 4261]

“Owner” has the same meaning as in the *Community Charter*.

“Public Authority” has the same meaning as in the *Community Charter*.

“Public, Institutional or Community Playing Field” means grass, sod or turf covered grounds that are owned, maintained or operated by a public authority, or by a private institution such as a private school, and are designed to be played upon, or that are used for sporting or other community events and activities, but for certainty does not include a lawn or turf on private residential property.

“Regional Water Supply” means the CRD drinking water supply operated and administered by the CRD under the authority referred to in the Recitals to this bylaw.

“Public Spray Park” means a facility that is open to the public and that is equipped with water sprays, water jets, sprinklers and similar devices that spray water for recreation and enjoyment of the users.

“Residential Property” means a property which is used primarily for the purpose of residence by persons on a permanent, temporary or seasonal basis.

[Bylaw 4261]

“Soaker Hose” or “Weeper Hose” means a garden hose or a pipe with small holes that allow water to seep into the ground, to the roots of plants, discharging water through the entire length of its porous surface.

“Sprinkler” means an Irrigation System, a sprinkler system, or a hose connected, water emitting device such as sprinklers, rotors, or sprayer components, that artificially supply water to a landscaped area, lawn or garden, but excludes a Micro-irrigation or Drip-irrigation System.

“Stage” refers to the Stages 1, 2 and 3 of Water Use Restrictions prescribed in Schedule “A” of this bylaw.

“Surface Coating” means one or more coatings such as paint, preservative, or stucco applied to exterior building surfaces.

[Bylaw 4261]

“Tree Farm” means a commercial operation or business such as a tree plantation, tree nursery, or Christmas tree farm that grows trees for sale, and includes a privately owned forest that is managed for timber production.

“Turf Farm” means a commercial operation or business that grows and sells sod or turf.

“Vehicle” means a device in, on or by which a person or thing is or may be transported or drawn on a highway or other roadway.

“Water”, when used as a noun, means drinking water supplied by the CRD from the Regional Water Supply directly or indirectly to an Owner or Occupier, and when used as a verb means the act of using or applying such Water.

“Water Use Restrictions” means the restrictions prescribed in Schedule “A” of this bylaw.

“Wading Pool” means a shallow, artificial pool 600 mm or less in depth, of portable or permanent construction for children to play or wade in.

2. Application

The restrictions and regulations in this bylaw are applicable in each Municipality.

3. Inspection

A Bylaw Enforcement Officer has the authority to enter at all reasonable times on any property which is subject to this bylaw to ascertain whether the requirements of this bylaw are being met or the regulations in this bylaw are being observed.

4. Water Use Restriction Stages

- (1) The Stage 1 Water Use Restrictions prescribed in Schedule “A” are in effect each year from May 1 to September 30 inclusive, except as provided under subsection (2).
- (2) When necessary for the conservation of Water or the preservation of the Regional Water Supply, the Commission, by resolution, may:
 - (a) amend the effective period of time for Stage 1, or
 - (b) terminate or bring into effect a Stage more restrictive than Stage 1 at any time of the year for any period of time.
- (3) The Stage determined under subsection (2) and the Water Use Restrictions prescribed under Schedule “A” for that Stage take effect 48 hours after the Notice for that Stage under section 5(1) and remain in effect until that Stage is terminated.
- (4) A Stage will remain in effect until it is terminated under this bylaw, or until the commencement of another Stage.

[Bylaw 4261]

5. Notice

The General Manager must make a public announcement of the activation or termination of any water use restriction stage, other than the automatic activation and termination of the Stage 1 water use restriction on May 1 and September 30 of each calendar year, and may do so by one or more of the following means:

- (a) radio or television broadcast;
- (b) posting on the CRD website and social media;

- (c) delivery of notices; or
- (d) publication in a local newspaper.

[Bylaw 4261]

6. Determining Water Use Restriction Stages

In making a determination under Section 4(2), the Commission may consider the following factors:

- (1) time of year and typical seasonal water demand trends;
- (2) precipitation and temperature conditions and forecasts;
- (3) current and forecasted storage levels and storage volumes of CRD Reservoirs and draw down rates;
- (4) stream flows and inflows into CRD Reservoirs;
- (5) water usage, recent consumption and trends, and customer compliance with restrictions on Water use under this bylaw;
- (6) Regional Water Supply System performance;
- (7) the effects of climate change; and
- (8) any other factor the Commission considered to be relevant for making a determination under Section 4(2).

[Bylaw 4261]

7. Water Use Restrictions

- (1) The Water Use Restrictions for each Stage are prescribed in Schedule "A" to this bylaw and must be followed during the period that the applicable Stage is in effect under this bylaw.
- (2) For greater clarity, when a Stage is in effect under this bylaw, no person shall perform any of the outdoor watering activities described in Schedule "A" to this bylaw except at the days and times, and in the manner permitted, during that Stage as set out in Schedule "A".
- (3) No person shall waste Water by using more Water than is required to provide a service, produce a product or complete a task, including but not limited to:
 - (a) allowing a tap or hose to run Water unnecessarily,
 - (b) the Over-Watering of plants or lawns,
 - (c) power-washing, using water from a hose, or otherwise applying or using Water in a manner that constitutes Excess Water Use, or
 - (d) using a Motion-Activated Sprinkler Device or Sprinkler in such a manner that water spray patterns are not confined to the property on which the device is located, and are allowed to spray onto adjoining public or private property.
- (4) No person, being an Owner or Occupier of property in the Municipality, shall use Water or cause Water to be used contrary to the provisions of this bylaw in effect at the time of use.

[Bylaw 4261]

8. Exemptions to Water Use Restrictions

- (1) Nurseries, Farms, Turf Farms and Tree Farms are exempted from all Stage restrictions.
- (2) Exempted Persons are exempted from Section 7 to the extent permitted by Schedule "A".

[Bylaw 4261]

9. Schedules

Schedules "A" and "B" of this bylaw form part of and are enforceable in the same manner as the bylaw.

[Bylaw 4261]

10. Offences and Penalties

- (1) A person who contravenes this bylaw commits an offence and is liable to a fine not less than \$100 and not exceeding \$10,000.
- (2) Where an offence is committed or continues for more than one day, a person shall be deemed to have committed separate offences for each day on or during which an offence occurs or continues, and separate fines, each not less than \$100 and not exceeding \$10,000, may be imposed for each day on or during which an offence occurs or continues.
- (3) Nothing in this bylaw shall limit the District from pursuing any other remedy that would otherwise be available to the District at law.
- (4) A Bylaw Enforcement Officer may, if he or she has reason to believe an offence has been committed against this bylaw, complete and leave with the alleged offender, or at the address of the alleged offender with someone who appears to be 16 years of age or older, a ticket information pursuant to Bylaw No. 1857, *Capital Regional District Ticket Information Authorization Bylaw, 1990* as may be amended or repealed and replaced from time to time, indicating a penalty equal to the amount stipulated for such an offence.

[Bylaw 4261]

11. Repeal

Capital Regional District Water Conservation Bylaw No. 1, 2003 is repealed.

12. Effective Date

This bylaw shall take effect upon the date of its adoption.

13. Bylaw Citation

This Bylaw may be cited as "Capital Regional District Water Conservation Bylaw No. 1, 2016".

READ A FIRST TIME, this 11th day of May, 2016

READ A SECOND TIME, this 11th day of May, 2016

READ A THIRD TIME, this 11th day of May, 2016

ADOPTED this 11th day of May, 2016

[original signed by]

CHAIR

[original signed by]

SECRETARY

SCHEDULE "A"
to Bylaw No. 4099

OUTDOOR WATER USE RESTRICTION STAGES

APPLICATION

This schedule does not apply to Nurseries, Farms, Turf Farms and Tree Farms.

1. STAGE 1 Water Restrictions

(1) During Stage 1,

- (a) no person shall, by any method, water a lawn growing on a property, including but not limited to a property that is used for residential, commercial, or institutional purposes, with
 - (i) an even-numbered address, other than on Wednesday and Saturday between the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.; and
 - (ii) an odd-numbered address other than on Thursday and Sunday between the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.; and
- (b) no person shall
 - (i) water trees, shrubs, flowers and vegetables on any day with a Sprinkler other than during the prescribed hours for Stage 1 lawn watering or on any day at any time if watering is done other than by hand-held container, hand held hose equipped with an automatic shut-off nozzle, or by Micro-irrigation or Drip-irrigation systems.
 - (ii) water newly planted trees, shrubs, flowers and vegetables by any method referred to in Section 1(1)(b)(i) of this Schedule other than during installation and the following 24 hours;
 - (iii) outside the prescribed Stage 1 lawn Watering hours, water new sod or newly seeded lawns, other than on new sod installation and during the first 21 days after installation, or for newly seeded lawns, water until growth is established or for 49 days after installation, whichever is less;
 - (iv) water public, institutional or community playing fields other than between the hours of 1:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m. on any day, unless failure to water will result in a permanent loss of plant material;
 - (v) wash a vehicle with Water other than by using a hand held container or a hand held hose equipped with an automatic shut-off nozzle or at car dealerships or commercial car washes; and
 - (vi) use Water to wash sidewalks, driveways, parking lots, exterior windows or exterior building surfaces, by means of other than a power washer or hand-held hose equipped with a shut-off valve or in a manner that results in Excess Water Use.

- (c) a person must not allow a Public Spray Park
 - (i) to emit Water continuously;
 - (ii) to be operated other than by either:
 - 1) a motion sensor timer, or
 - 2) manually by the user provided the device that is activated manually by the user is equipped with a timer or automatic shut-off that prevents continuous emission of Water.

(2) As exceptions to the Stage 1 restrictions,

- (a) Owners or Occupiers of property who, by reason of physical or mental incapacity, are unable to water their property within the restricted days and times, and whose property is not equipped with an automatic in-ground Irrigation System, with the written approval of the General Manager given under this bylaw, shall not water their lawn or turf on more than two days of the week for a maximum of 9 hours per day;
- (b) no Public Authority shall:
 - (i) in the case of Municipalities only, water lawns and Boulevards other than on Mondays and Fridays during the hours of 1:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.;
 - (ii) in the case of all Public Authorities, water public, institutional or community playing fields other than during the hours of 1:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m. on any day other than Wednesday; and
 - (iii) in the case of all Public Authorities, water trees, shrubs, flowers and vegetable gardens other than at the times and in the manner prescribed under Sections 1(1)(b)(i) and (ii) of this Schedule.
- (c) owners or operators of golf courses shall not water
 - (i) fairways on any day, other than during the Stage 1 lawn prescribed times;
 - (ii) trees, shrubs, flowers and vegetables grown on golf courses other than in accordance with Section 1(1)(b)(i), and (ii) of this Schedule; and
 - (iii) golf greens and tees on any day unless failure to water will result in permanent loss of plant material.

2. STAGE 2 Water Restrictions

(1) During Stage 2,

- (a) no person shall, by any method, water a lawn growing on a property including but not limited to property that is used for residential, commercial or institutional purposes, with
 - (i) an even-numbered address, other than on Saturday between the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.;
 - (ii) an odd-numbered address, other than on Sunday between the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.;

- (b) no person shall
 - (i) use Water to wash sidewalks, driveways or parking lots, exterior windows or exterior building surfaces, except as necessary for applying surface coating, preparing a surface prior to paving or repointing bricks, or if required by law to comply with health or safety regulations;
 - (ii) utilize a Motion-Activated Sprinkler Device to deter animals or wildlife;
 - (iii) water a lawn on property used as a cemetery;
- (c) a person must not allow a Public Spray Park
 - (i) to emit Water continuously;
 - (ii) to be operated other than by either:
 - 1) a motion sensor timer, or
 - 2) manually by the user provided the device activated manually by the user is equipped with a timer or automatic shut off that prevents continuous emission of Water;
- (d) a person must not
 - (i) fill an ornamental fountain with Water, or
 - (ii) operate an ornamental fountain that uses Water, other than an ornamental fountain that re-circulates continuously and is not replenished or re-Filled with Water from the Regional Water Supply; and
- (e) no person shall
 - (i) water trees, shrubs, flowers and vegetables on any day with a Sprinkler other than during the prescribed morning hours (4:00 a.m. to 10:00 a.m.) for Stage 2 lawn watering or on any day at any time if watering is done other than by hand-held container, hand-held hose equipped with an automatic shut-off nozzle, or by Micro-irrigation or Drip-irrigation system;
 - (ii) water newly planted trees, shrubs, flowers and vegetables during installation and for the following 24 hours other than by any method referred to in Section 2(1)(e)(i) of this Schedule;
 - (iii) water public, institutional or community playing fields other than between the hours of 1:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m., on more than three days per week unless failure to water will result in a permanent loss of plant material;
 - (iv) wash a vehicle with Water other than by using a hand-held container or a hand-held hose equipped with an automatic shut-off nozzle or at car dealerships and commercial car washes.

(2) As exceptions to Stage 2 restrictions,

- (a) Owners or Occupiers of property who, by reason of physical or mental incapacity, are unable to water their property within the restricted days and times, and whose property is not equipped with an automatic in-ground Irrigation System, with the written approval of the General Manager given under this bylaw, shall not water their lawn or turf on more than one day per week for a maximum of 9 hours per day;
- (b) no Public Authority shall:
 - (i) in the case of Municipalities only, water lawns and Boulevards other than on Monday between the hours of 1:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.;
 - (ii) in the case of all Public Authorities, water public, institutional or community playing fields other than during the hours of 1:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m., on no more than three days per week if failure to water will result in a permanent loss of plant material;
 - (iii) in the case of all Public Authorities, water trees, shrubs, flowers and vegetable gardens other than at the times and in the manner prescribed under Sections 2(1)(e)(i), and (ii) of this Schedule;
- (c) owners or operators of golf courses shall not water
 - (i) fairways more than two days per week during prescribed lawn watering times;
 - (ii) trees, shrubs, flowers and vegetables grown on golf courses other than in accordance with Section 2(1)(e)(i) and (ii) of this Schedule; and
 - (iii) golf greens and tees on any day unless failure to water so will result in permanent loss of plant material.

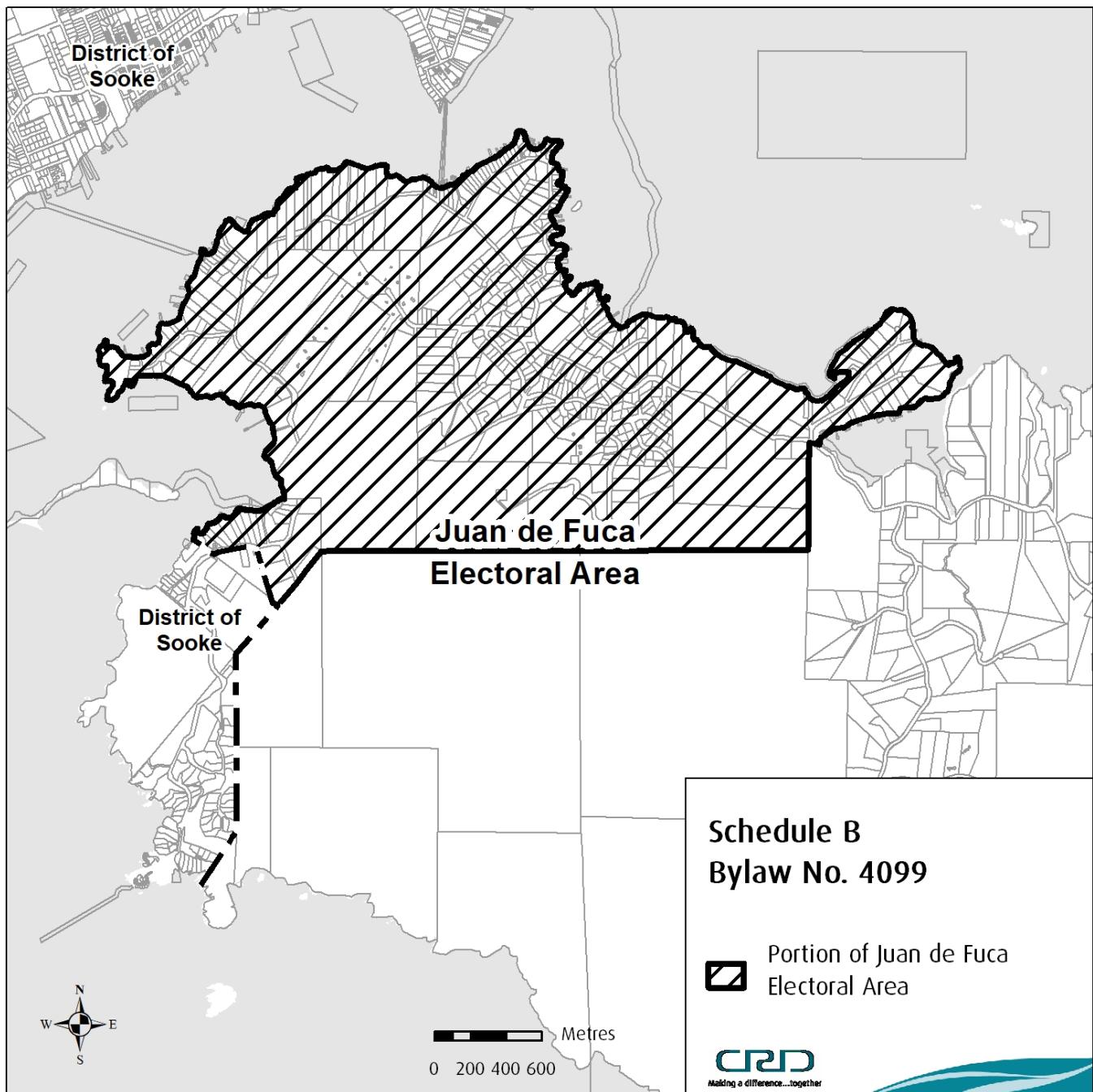
3. STAGE 3 Water Restrictions

(1) During Stage 3,

- (a) no person shall
 - (i) water a lawn, turf or Boulevard;
 - (ii) fill a wading pool, swimming pool, hot tub or garden pond;
 - (iii) operate a Public Spray Park;
 - (iv) fill with Water or operate an ornamental fountain with Water,
 - (v) wash a Vehicle or a Boat with Water;
 - (vi) use Water to wash sidewalks, driveways or parking lots, exterior windows or exterior building surfaces, except as necessary for applying a surface coating, preparing a surface prior to paving or repointing bricks, or if required by law to comply with health or safety regulations; and
 - (vii) utilize a Motion-Activated Sprinkler Device to deter animals or wildlife.

- (b) no person or Public Authority shall
 - (i) water trees, shrubs, flowers and vegetables on any day other than between the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m. if watering is done by hand-held container, a hand held hose equipped with an automatic shut-off nozzle, or by Micro-irrigation or Drip-irrigation systems;
 - (ii) water newly planted trees, shrubs, flowers and vegetables other than between the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m. only by hand-held container or a hand held hose equipped with an automatic shut-off nozzle, during installation and during the following 24 hours after installation is completed;
 - (iii) water public, institutional or community playing fields other than between the hours of 4:00 a.m. to 10:00 a.m., on no more than 3 days a week, if failure to water will result in a permanent loss of plant material.
- (2) As exceptions to the Stage 3 restrictions,
 - (a) owners or operators of golf courses shall not water
 - (i) fairways more than one day per week during the hours of 4:00 a.m. to 10:00 a.m. or 7:00 p.m. to 10:00 p.m.;
 - (ii) trees, shrubs, flowers and vegetables grown on golf courses other than in accordance with Section 3(1)(b)(i), (ii) and (iii) of this Schedule; and
 - (iii) golf greens and tees on any day unless failure to water will result in permanent loss of plant material;
 - (b) Vehicles and Boats must not be washed with Water other than at car dealerships and commercial car washes using less than 57 litres of Water per Vehicle wash or using 50% recirculated Water as long as the total amount of Water, excluding recirculated Water, does not exceed 57 litres per Vehicle wash.

SCHEDULE "B"
to Bylaw No. 4099



**CAPITAL REGIONAL DISTRICT
BYLAW NO. 4549**

A BYLAW TO AMEND WATER CONSERVATION BYLAW (BYLAW NO. 4099)

WHEREAS:

- A. Under Bylaw No. 4099, Capital Regional District Water Conservation Bylaw No. 1, 2016, the Regional Board has established a bylaw to regulate water use for a Water supply local service sourcing drinking water from the Sooke Lake and Goldstream Reservoirs;
- B. The Regional Board wishes to restrict wasteful use of Water by prohibiting the use of Water in Once-Through Cooling Systems;
- C. The Regional Board wishes to amend Bylaw No. 4099;

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

1. Bylaw No. 4099, "Capital Regional District Water Conservation Bylaw No. 1, 2016" is hereby amended as follows:

- (a) by inserting the following definitions, in alphabetical order, under section 1:

"Emergency Back-up System" means a Once-Through Cooling System that is not normally operated and is only activated either in an emergency situation (including, but not limited to, power outages, severe weather, or natural disasters) or in the event of a sudden failure of an otherwise properly designed, operated and maintained primary cooling system that is not a Once-Through Cooling System;

"Once-Through Cooling System" means a system or equipment that produces a cooling effect through the transfer of heat to water that is circulated only once through the system, and is then discharged, whether to a sewer, stream, other water body, the ground, or otherwise;

- (b) by inserting the following as section 7(5):

7(5) Commencing on July 1, 2028, no person shall use Water in a Once-Through Cooling System unless:

- (a) the Once-Through Cooling System is an Emergency Back-up System, or
 - (b) the person has obtained written authorization from the General Manager to use Water in the Once-Through Cooling System in accordance with section 7(6).

- (c) by inserting the following as section 7(6):

7(6) The General Manager may grant a person authorization to use Water in a Once-Through Cooling System if there is no reasonable alternative to using Water in a Once-Through Cooling System.

2. This bylaw may be cited for all purposes as "Capital Regional District Water Conservation Bylaw No. 1, 2016, Amendment Bylaw No. 3, 2023".

READ A FIRST TIME THIS	th	day of	2023
READ A SECOND TIME THIS	th	day of	2023
READ A THIRD TIME THIS	th	day of	2023
ADOPTED THIS	th	day of	2023

CHAIR

CORPORATE OFFICER

**CAPITAL REGIONAL DISTRICT
BYLAW NO. 4553**

**A BYLAW TO AMEND BYLAW NO. 1857, CAPITAL REGIONAL DISTRICT
TICKET INFORMATION AUTHORIZATION BYLAW, 1990**

WHEREAS the Regional Board amended the Capital Regional District Water Conservation Bylaw No. 1, 2016 by way of Bylaw No. 4549, Amendment Bylaw No. 3, 2023, to prohibit the use of Water in Once-Through Cooling Systems;

AND WHEREAS the Regional Board wishes to correct numbering errors introduced by the adoption of Capital Regional District Ticket Information Authorization Bylaw 1990, Amendment Bylaw No. 68, 2020;

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

1. Bylaw No. 1857, Capital Regional District Ticket Information Authorization Bylaw, 1990, is amended by replacing the existing Schedule 26 with the Schedule 26 attached to this bylaw.
2. This Bylaw may be cited for all purposes as "Capital Regional District Ticket Information Authorization Bylaw 1990, Amendment Bylaw No. 76, 2023".

READ A FIRST TIME THIS	DAY OF	2023
READ A SECOND TIME THIS	DAY OF	2023
READ A THIRD TIME THIS	DAY OF	2023
ADOPTED THIS	DAY OF	2023

CHAIR

CORPORATE OFFICER

SCHEDULE 26 TO BYLAW NO. 1857**CAPITAL REGIONAL DISTRICT WATER CONSERVATION BYLAW NO. 1, 2016**

WORDS OR EXPRESSIONS DESIGNATING OFFENCE	SECTION	FINE
1. Hinder/Prevent Inspection	3	\$500.00
2. Wasting water during Stage 1	7.(3)	\$200.00
3. Wasting water during Stage 2	7.(3)	\$300.00
4. Wasting water during Stage 3	7.(3)	\$400.00
5. Water contrary to restriction	7.(4)	\$200.00
6. Use Water for Once-Through Cooling	7.(5)	\$400.00
7. Stage 1 – water lawn contrary to even-numbered address dates/times	Sch. A 1.(1)(a)(i)	\$200.00
8. Stage 1 – water lawn contrary to odd-numbered address dates/times	Sch. A 1.(1)(a)(ii)	\$200.00
9. Stage 1 – water playing field contrary to dates/times	Sch. A 1.(1)(b)(iv)	\$100.00
10. Stage 1 – operate Public Spray Park contrary to restrictions	Sch. A 1.(1)(c)	\$100.00
11. Stage 1 – Public Authority watering contrary to dates/time	Sch. A 1.(2)(b)	\$100.00
12. Stage 1 – watering golf courses contrary to dates/times	Sch. A 1.(2)(c)	\$200.00
13. Stage 2 – water lawn contrary to even-numbered address dates/times	Sch. A 2.(1)(a)(i)	\$250.00
14. Stage 2 – water lawn contrary to odd-numbered address dates/times	Sch. A 2.(1)(a)(ii)	\$250.00
15. Stage 2 – wash sidewalks/driveways/exterior surfaces	Sch. A 2.(1)(b)(i)	\$250.00
16. Stage 2 – use motion-activated sprinkler device	Sch. A 2.(1)(b)(ii)	\$250.00

17.	Stage 2 – water cemetery lawn	Sch. A 2.(1)(b)(iii)	\$250.00
18.	Stage 2 - operate Public Spray Park contrary to restrictions	Sch. A 2.(1)(c)	\$250.00
19.	Stage 2 – fill ornamental fountain	Sch. A 2.(1)(d)(i)	\$250.00
20.	Stage 2 – operate ornamental fountain	Sch. A 2.(1)(d)(ii)	\$250.00
21.	Stage 2 - water playing field contrary to dates/times	Sch. A 2.(1)(e)(iii)	\$250.00
22.	Stage 2 – Public Authority watering contrary to dates/times	Sch. A 2.(2)(b)	\$200.00
23.	Stage 2 – watering golf courses contrary to dates/times	Sch. A 2.(2)(c)	\$250.00
24.	Stage 3 – water lawn or boulevard	Sch. A 3.(1)(a)(i)	\$400.00
25.	Stage 3 – fill pool, hot tub or garden pond	Sch. A 3.(1)(a)(ii)	\$400.00
26.	Stage 3 – operate a Public Spray Park	Sch. A 3.(1)(a)(iii)	\$400.00
27.	Stage 3 – fill/operate ornamental fountain	Sch. A 3.(1)(a)(iv)	\$400.00
28.	Stage 3 – wash vehicle/boat	Sch. A 3.(1)(a)(v)	\$400.00
29.	Stage 3 – wash sidewalks/driveways/exterior surfaces	Sch. A 3.(1)(a)(vi)	\$400.00
30.	Stage 3 – use motion-activated sprinkler device	Sch. A 3.(1)(a)(vii)	\$400.00
31.	Stage 3 – Public Authority watering contrary to dates/times	Sch. A 3.(1)(b)	\$400.00
32.	Stage 3 – watering golf courses contrary to dates/times	Sch. A 3.(2)(a)	\$400.00
33.	Stage 3 – washing vehicle or boat contrary to restrictions	Sch. A 3.(2)(b)	\$400.00

**CAPITAL REGIONAL DISTRICT
BYLAW NO. 4508**

**A BYLAW TO DELEGATE POWERS TO THE
SALT SPRING ISLAND LOCAL COMMUNITY COMMISSION**

WHEREAS:

- A. Salt Spring Island Electoral Area has a number of local, sub-regional, and island-wide services;
- B. Under the *Local Government Act*, RSBC 2015 c 1, a regional district may establish, by bylaw, one or more local communities to be administered by local community commission, provided the electors in the area of the local community assent to the creation of the commission and has done so under Bylaw No. 4507, "Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022";
- C. On October 15, 2022, a majority of Salt Spring Island electors assented to the creation of a Local Community Commission, to be delegated responsibility for a variety of Salt Spring Island local services, in accordance with Bylaw No. 4507;
- D. The Capital Regional District Board wishes to delegate, by bylaw adopted by at least two-thirds of the votes cast pursuant to the *Local Government Act*, certain of its powers, duties and functions to the local community commission, with the scope of authority as set out in this bylaw and such other bylaws as adopted from time to time;

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

DELEGATION TO LOCAL COMMUNITY COMMISSION

1. This bylaw describes the delegation of powers, duties and functions in relation to services within the scope of authority of the Salt Spring Island Local Community Commission, as established by Bylaw No. 4507, "Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022" (the "Commission").
2. For clarity, subject to the *Local Government Act*, RSBC 2015 c 1, unless a power, duty or function of the Capital Regional District Board has been expressly delegated by this bylaw or another CRD bylaw, all the powers, duties and functions of the CRD Board remain with the CRD Board, and the Commission may not further delegate powers, duties, or functions to another individual or body. Individual Commissioners have no delegated authority outside the body of the Commission in open meeting assembled, acting as a whole.

ADMINISTRATIVE AUTHORITY

3. The Regional Board hereby delegates to the Commission the powers of the Regional Board with respect to the development, maintenance and operation of the services listed as administrative in Schedule "A". Administrative authority includes the following:
 - (a) Authorize entering into agreements respecting the undertaking, provision and operation of the District's works and services;
 - (b) Identification and creation of strategic plans and priorities, and service-specific operational policies;

- (c) Recommending to the Regional Board user fees and charges to be established by bylaw;
- (d) Direction on maintenance of property or interests in property managed by the service;
- (e) Authorize acquisition and disposition of property or an interest in property subject to approved financial plans and in accordance with sections 8 and 9 of this Bylaw;
- (f) Review and provide direction on annual budgets each year by no later than September 15, or such other date as set by the District's Chief Financial Officer, for Regional Board consideration and approval; and
- (g) Consideration of matters referred to the Commission by the Regional Board.

ADVISORY AUTHORITY

- 4. The Regional Board hereby delegates to the Commission advisory authority, including recommending annual budget and scope of services, if applicable, for those services listed as advisory in Schedule "A".
- 5. The Commission may be referred other matters by the Regional Board.

LIMITS ON DELEGATION

- 6. The delegation of authority under this bylaw is subject to the following requirements:
 - (a) Agreements must comply with purchasing policies and procedures of the Regional Board;
 - (b) Revenues and expenditures must be included in the approved annual financial plan for the service;
 - (c) Delegation to the Commission does not derogate from the delegations of authority to officers and employees contained in Bylaw No. 3343, "Officers', General Managers' and Management Staff's Bylaw No. 1, 2006", Bylaw No. 4186, "Capital Regional District Delegation Bylaw No. 1, 2017", and other delegation instruments.
- 7. The delegation of authority set out in the bylaw does not include:
 - (a) The ability to commence, settle, compromise, or initiate litigation, court, arbitration, mediation, or other proceedings;
 - (b) The ability to amend, disregard, set, or alter the Board or administrative policies and procedures of the Regional Board as they relate to procurement, purchasing, financial planning, or otherwise; or
 - (c) Those matters unable to be delegated per s. 229(2) of the *Local Government Act*, including the ability to pass bylaws, regulations, or fetter the discretion of the Regional Board as it relates to items it is unable to delegate under the *Local Government Act*.

ACQUISITION & DISPOSITION OF PROPERTY

- 8. Any facilities or equipment acquired by the Commission for services must be acquired in the name of the Regional District and shall be the property of the Regional District.

9. Where a service may accept revenues from other sources, such as gift and enterprise, such revenues shall be managed, solicited, and accepted by the service in accordance with Regional District practice, policies, and bylaws, as applicable.

CITATION

10. This bylaw may be cited for all purposes as "Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022".

READ A FIRST TIME THIS	13 th	day of	July,	2022
READ A SECOND TIME THIS	13 th	day of	July,	2022
READ A THIRD TIME THIS	13 th	day of	July,	2022
RETURNED TO SECOND READING AND AMENDED THIS	12 th	day of	April	2023
READ AGAIN A THIRD TIME THIS	12 th	day of	April	2023
ADOPTED THIS	th	day of		20__

CHAIR

CORPORATE OFFICER

SCHEDULE “A”

Administrative Authority

- (a) Economic development as set out in Bylaw No. 1824, “Economic Development Commission Establishing Bylaw No. 1, 1990”, as it relates to Salt Spring Island;
- (b) Wastewater disposal as set out in Bylaw No. 2118, “Salt Spring Island Liquid Waste Disposal Additional Local Service Establishment Bylaw No. 1, 1993”;
- (c) Community parks service continued under Bylaw No. 4149, “Salt Spring Island Community Parks Services Conversion Bylaw No. 1, 2017”;
- (d) Community recreation service continued under Bylaw No. 4151, “Salt Spring Island Community Recreation Services Conversion Bylaw No. 1, 2017”;
- (e) Indoor swimming pool service in Bylaw No. 3206, “Salt Spring Indoor Swimming Pool Facility Service Establishment Bylaw No. 1, 2004”;
- (f) Community parks and recreation facilities in Bylaw No. 2422, “Salt Spring Island Parks and Recreation Facilities Local Service Establishment Bylaw No. 1, 1996”;
- (g) The Salt Spring Island Small Craft Harbour Facilities local service set out in Bylaw No. 2730, “Small Craft Harbour Facilities (Salt Spring Island) Local Service Establishment Bylaw No. 1, 1999”;
- (h) Transportation service established under Bylaw No. 3438, “Salt Spring Island Community Transit and Transportation Service Establishment Bylaw No. 1, 2007”;
- (i) Street lighting under Bylaw No. 3746, “Salt Spring Island Street Lighting Service Establishment Bylaw No. 1, 2011”;
- (j) The issuance of grants-in-aid for Salt Spring Island initiatives under Supplementary Letters Patent Division XIX, OIC 1013/1977, subject always to the restriction on assistance to business under the *Local Government Act*;
- (k) Determination of compensation for livestock injury by dogs under Bylaw No. 4418, “Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021”;

Advisory Authority

- (a) The arts contribution service set out in Bylaw No. 3116, “Salt Spring Island Arts Contribution Service Establishing Bylaw No. 1, 2003”;
- (b) The Salt Spring Island Public Library local service set out in Bylaw No. 2725, “Salt Spring Island Public Library Local Service Area Establishment Bylaw No. 1, 1999”; and
- (c) Salt Spring Island Search and Rescue contribution as set out in Bylaw No. 3494, “Salt Spring Island Search and Rescue Service Establishment Bylaw, 2007”.