Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Notice of Meeting and Meeting Agenda
Capital Regional District Board

Wednesday, June 9, 2021 | **1:10 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. 21-467 Minutes of the May 26, 2021 Capital Regional District Board Meetings

Recommendation: 1. That the minutes of the Adjourned session of the Capital Regional District Board of May 26, 2021 be adopted as circulated.

2. That the minutes of the Special session of Capital Regional District Board of May 26, 2021 be adopted as circulated.

Attachments: Minutes - May 26, 2021 (Adjourned)

Minutes - May 26, 2021 (Special)

4. REPORT OF THE CHAIR

5. PRESENTATIONS/DELEGATIONS

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

To participate electronically, complete the online application for "Addressing the Board" on our website. Alternatively, you may email the CRD Board at crdboard@crd.bc.ca.

5.1. Presentations

5.1.1. 21-488 Presentation: Ian Robertson (CEO) and Christine Willow (Chair), Greater Victoria Harbour Authority; Re: Member Agency Report

Attachments: Presentation: GVHA - Member Agency Report to CRD

5.2. Delegations

6. CONSENT AGENDA

6.1. 21-455 Minutes of the May 19, 2021 Core Area Wastewater Treatment Project Board

Recommendation: [The following minutes have been reviewed by the Project Board members:]
That the minutes of the Core Area Wastewater Treatment Project Board meeting of May 19, 2021 be adopted as circulated.
(NWA)

Attachments: Minutes - May 19, 2021

6.2. 21-449 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, Anna Kebaien and Robert Bakewell be appointed as Assistant Bylaw Officers.
(NWA)

Attachments: Staff Report: Appointment of Officers

6.3. 21-483 BC Energy Step Code - Status Update

Recommendation: The Electoral Areas Committee recommends to the Capital Regional District Board:
That the BC Energy Step Code - Status Update report be received for information.
(NWA)

Attachments: Staff Report: BC Energy Step Code - Status Update

Appendix A: How the BC Energy Step Code works

6.4. 21-384 Enerkem Facility Update

Recommendation: The Environmental Services Committee recommends to the Capital Regional District Board:
That this report be received for information.
(NWA)

Attachments: Staff Report: Enerkem Facility Update

6.5. 21-451 Inclusive Governance & Decision-Making Update

Recommendation: That the First Nations Relations Committee recommends to the Capital Regional District Board:
That this report be received for information.
(NWA)

Attachments: Staff Report: Inclusive Governance & Decision-Making Update

Appendix A: Letter to Esquimalt First Nation on Inclusive Governance

6.6. 21-452 Intercultural Skills Training for Board Directors

Recommendation: [At the May 26, 2021 First Nations Relations Committee meeting, the following motion as amended was carried:]
That the First Nations Relations Committee recommends to the Capital Regional District Board:
That staff be directed to work with the Board and First Nations representatives to develop and offer Intercultural Skills Training for CRD Directors and Alternate Directors.
(NWA)

Attachments: Staff Report: Intercultural Skills Training for Board Directors

6.7. 20-756 First Nations Cultural Honorarium Policy

Recommendation: That the First Nations Relations Committee recommends to the Capital Regional District Board:
That this report be received for information.
(NWA)

Attachments: Staff Report: First Nations Cultural Honoraria Policy

Appendix A: First Nations Honoraria Guildlines

Appendix B: First Nations Honorarium Policy

6.8. 21-444 Union of BC Municipalities Strengthening Communities' Services Grant Application

Recommendation: The Hospitals and Housing Committee recommends to the Capital Regional District Board:
That the CRD Board authorize staff to prepare and submit an application, negotiate and accept the terms, and receive funds through the Union of BC Municipalities Strengthening Communities' Services Program to support the activities outlined in the proposal presented in Appendix A.
(NWA)

Attachments: Staff Report: UBCM Strengthening Communities' Svcs Grant App

Appendix A: UBCM Strengthening Communities' Svcs Grant App

6.9. 21-388 Greater Victoria Drinking Water Quality - 2020 Annual Report

Recommendation: The Regional Water Supply Commission recommends to the Capital Regional District Board:
That the Greater Victoria Drinking Water Quality 2020 Annual Report be approved.
(NWA)

Attachments: Staff Report: Greater Victoria Drinking Water Quality - 2020 Annual Report

Appendix A: Greater Victoria Drinking Water Quality - 2020 Annual Report

7. ADMINISTRATION REPORTS

7.1. 21-450 Ed MacGregor Memorial Bursary 2021

Recommendation: That the Capital Regional District Board receive the 2021 Ed MacGregor Memorial Bursary staff report for information.
(NWA)

Attachments: Staff Report: Ed MacGregor Memorial Bursary

7.2. 21-437 Bylaw Nos. 4424 and 4425: Temporary Borrowing for Liquid Waste Management Core Area and Western Communities

Recommendation: 1. That Bylaw No. 4424, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021" be introduced and read a first, second, and third time;
2. That Bylaw No. 4424 be adopted.
3. That Bylaw No. 4425, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021" be introduced and read a first, second, and third time;
4. That Bylaw No. 4425 be adopted.
(WA, 2/3 on adoption)

Attachments: Staff Report: Bylaw Nos. 4424 and 4425 Temporary Borrowing

Appendix A: Bylaw No. 4424 Temporary Borrowing No1

Appendix B: Bylaw No. 4425 Temporary Borrowing No2

8. REPORTS OF COMMITTEES

Electoral Areas Committee

8.1. 21-331 Livestock Injury Compensation Service Separation for Electoral Area Participation

Recommendation: The Electoral Areas Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4416, Animal Control Service Establishing Bylaw, 2021, be read a first, second, and third time;
2. That Bylaw No. 4416 be referred to the Ministry for approval;
3. That Bylaw No. 4417, Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021 be read a first, second and third time;
4. That Bylaw No. 4417 be referred to the Ministry for approval;
5. That Bylaw No. 4418, Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021 be read a first, second and third time;
6. That Bylaw No. 4418 be referred to the Ministry for approval;
7. That Bylaw No. 4419, Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021 be read a first, second and third time;
8. That Bylaw No. 4419 be referred to the Ministry for approval;
9. That Bylaw No. 4264, Animal Regulation and Impounding Bylaw No. 1, 1986, Amendment Bylaw No. 11, 2021, be read a first, second, and third time; and
10. That staff report back on Ministerial approval of Bylaws No. 4416, 4417, 4418, and 4419 when received.
(NWA)

Attachments: Staff Report: Livestock Injury Comp Svc Separation-EA Participation

Appendix A: Bylaw #4416, Animal Control Svc Establishing Bylaw, 2021

Appendix B: Bylaw #4417, Livestock Injury Compensation-JdF

Appendix C: Bylaw #4418, Livestock Injury Compensation-SSI

Appendix D: Bylaw #4419, Livestock Injury Compensation-SGI

Appendix E: Bylaw #4264, Animal Reg & Impounding Amend Bylaw

Environmental Services Committee

8.2. 21-385 Amendment to Hartland Landfill Tipping Fee and Regulation Bylaw (Bylaw No. 3881)

Recommendation: The Environmental Services Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4420, "Hartland Tipping Fee and Regulation Bylaw No. 6, 2013, Amendment Bylaw No. 3, 2021", be introduced and read a first, second time and third time; and
2. That Bylaw No. 4420 be adopted.
(WA, 2/3 on adoption)

Attachments: Staff Report: Amendment to Hartland Landfill Tipping Fee & Regulation Bylaw

Appendix A: Bylaw No. 4420

Governance Committee

8.3. 21-466 Family Court Committee - Update of Review of Status and Governance

Recommendation: [At the June 2, 2021 Governance Committee, the following motion as amended was carried:]
The Governance Committee recommends to the Capital Regional District Board:
1. That staff report back with a draft Commission Bylaw that delegates an administrative level of authority to the Victoria Family Court and Youth Justice Committee, including the power to issue grants, and that the Commission Bylaw addresses the mandate, governance and structural changes recommended by the CRD in its letter of February 26, 2021;
2. That staff consider additional resources and support to assist the Committee with meeting management in the 2022 Service Planning process; and
3. Prior to reporting back to the Governance Committee, to invite comment from the Victoria Family Court and Youth Justice Committee on the proposed delegation bylaw.
(NWA)

Attachments: Staff Report: FCC - Update of Review of Status & Governance

Appendix A: January 21, 2021 Letter

Appendix B: February 26, 2021 Letter

Hospitals and Housing Committee

8.4. 21-445 3656 Raymond Street Housing Agreement Rescission Bylaw

Recommendation: The Hospitals and Housing Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4427, "Resale Control and Housing Agreement Rescission Bylaw (3656 Raymond Street South), 2021" be introduced and read a first, second and third time; and
2. That Bylaw No. 4427 be adopted.
(NWA, 2/3 on adoption)

Attachments: Staff Report: 3656 Raymond St Housing Agrmt Rescission Bylaw

Appendix A: Bylaw 4427

Juan de Fuca Land Use Committee

8.5. 21-335 Juan de Fuca Development Fees and Procedures Bylaw Amendment

Recommendation: The Juan de Fuca Land Use Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4385, "Juan de Fuca Area Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021" be introduced, read a first, a second and a third time; and
2. That Bylaw No. 4385 be adopted.
(NWA 2/3 on adoption)

Attachments: Staff Report: JDF Development Fees and Procedures Bylaw

Appendix A: Proposed Bylaw No. 4385

LUC Minutes Excerpt

Regional Housing Trust Fund Commission

8.6. 21-442 Prosser Application

Recommendation: The Regional Housing Trust Fund Commission recommends to the Capital Regional District Board:
That a grant in the amount of $615,000 to the Capital Region Housing Corporation be approved to support the development of 41 units of affordable rental housing at 1909 Prosser Road, Central Saanich, subject to meeting the terms of the Regional Housing Trust Fund Grant Funding Agreement.
(WP - All except Langford, Colwood, Juan de Fuca Electoral Area)

Attachments: Staff Report: Prosser Application

Appendix A: Prosser RHTF Application

Saanich Peninsula Water Commission

8.7. 21-403 Bylaw No. 4411: Saanich Peninsula Water Supply Water Works Facilities Loan Authorization Bylaw

Recommendation: The Saanich Peninsula Water Commission recommends to the Capital Regional District Board:
1. That Bylaw No. 4411, cited as "Saanich Peninsula Water Supply Water Works Facilities Loan Authorization Bylaw No. 1, 2021", be introduced and read a first, second and third time; and
(WA)
2. That Bylaw No. 4411 be referred to the Inspector of Municipalities for approval, and if received, to proceed with elector approval by way of the municipal consent process.
(NWA)

Attachments: Staff Report: Bylaw 4411 Saan Pen Water Supply Loan Authorization

Appendix A: Bylaw No. 4411 Saanich Peninsula Water Supply LA

9. BYLAWS

9.1. 21-472 Bylaw 4374 - “Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 1, 2020”

Recommendation: That Bylaw 4374 "Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 1, 2020" be adopted.
(WA)

Attachments: Bylaw No.4374

9.2. 21-490 Bylaw 4375 - “Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 2, 2020”

Recommendation: That Bylaw 4375 "Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 2, 2020" be adopted.
(WA)

Attachments: Bylaw No. 4375

10. NOTICE(S) OF MOTION

10.1. 21-489 Motion with Notice: Partnerships to Protect Old Growth Forests in a Manner Consistent with Reconciliation (Director Isitt)

Recommendation: That the Board endorses the following resolution and directs staff to forward copies to the Premier of British Columbia, the BC Minister of Forests, the BC Minister of Indigenous Relations and Reconciliation, Members of the Legislative Assembly representing constituencies on Vancouver Island, and Association of Vancouver Island and Coastal Communities (AVICC) member local governments, requesting favourable consideration:

Resolution: Partnerships to Protect Old Growth Forests in a Manner Consistent with Reconciliation

WHEREAS the District of Highlands, District of Metchosin, District of Saanich and City of Victoria have gone on record calling for the Government of British Columbia to protect old growth forests in a manner consistent with the objective of reconciliation with Indigenous peoples;

AND WHEREAS Ancient high productivity old-growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and preservation of biological diversity;

AND WHEREAS Less than 3% of the original high productivity old growth forests in British Columbia remain standing, and of this residual land base, 75% is slated to be eliminated through industrial logging operations;

AND WHEREAS the Government of British Columbia's Old Growth Review Panel recommended in April 2020 that the Province defer development of old growth forests where "ecosystems are at very high and near-term risk of irreversible biodiversity loss" until a new strategy is implemented;

AND WHEREAS Alternatives exist to increase protection of biological diversity and employment, through the immediate and just transition to sustainable management of second-growth forests with expanded value-added processing and manufacturing;

THEREFORE BE IT RESOLVED that the Capital Regional District endorses the position of the District of Highlands, District of Metchosin, District of Saanich and City of Victoria calling on the Government of British Columbia to protect old growth forests on Vancouver Island in a manner consistent with reconciliation objectives;

AND BE IT FURTHER RESOLVED THAT the Capital Regional District expresses its willingness to work with Indigenous governments, the Government of British Columbia, the Government of Canada and other entities to protect old growth forests on southern Vancouver Island in a manner consistent with reconciliation objectives, including consideration of establishing Indigenous Protected and Conserved Areas;

AND BE IT FURTHER RESOLVED THAT the Capital Regional District calls on the Government of British Columbia to work with Indigenous and non-Indigenous communities to implement recommendations of the Old Growth Strategic Review and defer old-growth logging pending implementation of the panel's recommendations;

AND BE IT FURTHER RESOLVED THAT the Capital Regional District calls on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation, and to support through conservation financing and other measures the economic transition of affected Indigenous and non-Indigenous workers, communities and companies from unsustainable old-growth logging toward the development of long-term sustainable local economies.
(NWA)

Attachments:

Motion with Notice: Partnerships to Protect Old Growth Forests

Attachment 1: A New Future for Old Forests: Old Growth Strategic Rvw. (2020)

Attachment 2: Statement from Pacheedaht First Nation (April 2021)

Attachment 3: Letter From Elder Bill Jones, Pacheedaht First Nation (2020)

Attachment 4: Letter from District of Highlands (May 2021)

Attachment 5: Resolution adopted by District of Metchosin (May 2021)

Attachment 6: Resolution adopted by District of Saanich (April 2021)

Attachment 7: Letter from City of Victoria (April 2021)

Attachment 8: Letter from City of Nanaimo (March 2021)

Attachment 9: Letter from District of Tofino (May 2021)

Attachment 10: Letter from City of Powell River (March 2021)

Attachment 11: Resolution adopted by City of Port Moody (March 2021)

11. NEW BUSINESS

12. MOTION TO CLOSE THE MEETING

12.1. 21-474 Motion to Close the Meeting

Recommendation: That the meeting be closed for Labour Relations under Section (90)(1)(c) of the Community Charter. [1 item]

13. RISE AND REPORT

14. ADJOURNMENT

Votinq 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)

Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Meeting Minutes

Capital Regional District Board

Wednesday, May 26, 2021 | **10:00 AM** | **6th Floor Boardroom, 625 Fisgard Street, Victoria, BC**

Adjourned Meeting - Continuation of May 12, 2021 Regular Meeting

PRESENT:
Directors: C. Plant (Chair), M. Alto (for L. Helps) (EP), Z. de Vries (for R. Mersereau) (EP) (Acting Vice Chair), D. Blackwell, P. Brent (for D. Howe) (EP), J. Brownoff (for S. Brice) (EP), M. Brame (for B. Desjardins) (EP), K. Harper (for F. Haynes) (EP), M. Hicks (EP), B. Isitt, J. Loveday (EP), R. Martin (EP), C. McNeil-Smith (EP), K. Murdoch (EP), G. Orr (EP), D. Screech, L. Seaton, M. Tait, N. Taylor, K. Williams (EP), R. Windsor (EP), G. Young

Staff: R. Lapham, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; K. Lorette, General Manager, Planning and Protective Services (EP); K. Morley, General Manager, Corporate Services; M. Lagoa, Deputy Corporate Officer; S. Orr, Senior Committee Clerk (Recorder)

EP - Electronic Participation

Regrets: S. Brice, B. Desjardins, F. Haynes, L. Helps, G. Holman, D. Howe, R. Mersereau, J. Ranns

The meeting was called to order at 10 am.

1. TERRITORIAL ACKNOWLEDGEMENT

Director Tait provided the Territorial Acknowledgement.

2. APPROVAL OF THE AGENDA

MOVED by Director Screech, SECONDED by Director Blackwell,
That the agenda for the May 26, 2021 Session of the Capital Regional District Board be approved.
CARRIED

3. ADOPTION OF MINUTES

3.1. 21-458 Minutes of the May 12, 2021 Capital Regional District Board Meeting

MOVED by Director Screech, SECONDED by Director Tait,
That the minutes of the Capital Regional District Board meeting of May 12, 2021 be adopted as circulated.
CARRIED

4. NOTICE(S) OF MOTION

4.1. 21-316 Partnerships to Protect Fairy Creek and Other At-Risk Old-Growth Forests

The Notice of Motion: Partnerships to Protect Fairy Creek and Other At-Risk Old-Growth Forests, given at the April 14, 2021 Capital Regional District Board meeting, was not moved.

4.2. Partnerships to Protect Old Growth Forests in a Manner Consistent with Reconciliation

Director Isitt proposed the following Notice of Motion with same day consideration:

That the Capital Regional District Board endorse the following resolution:

Resolution: Partnerships to Protect Old Growth Forests in a Manner Consistent with Reconciliation

WHEREAS the District of Highlands, District of Saanich and City of Victoria have gone on record calling for the Government of British Columbia to protect old growth forests in a manner consistent the objective of reconciliation with Indigenous peoples;
AND WHEREAS Ancient high productivity old-growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and preservation of biological diversity;
AND WHEREAS Less than 3% of the original high productivity old-growth forests in British Columbia remain standing, and of this residual land base, 75% is slated to be eliminated through industrial logging operations;
AND WHEREAS Alternatives exist to increase protection of biological diversity and employment, through the immediate and just transition to sustainable management of second-growth forests with expanded value-added processing and manufacturing;
THEREFORE BE IT RESOLVED that the Capital Regional District endorses the position of the District of Highlands, District of Saanich and City of Victoria calling on the Government of British Columbia to protect old growth forests on Vancouver Island in a manner consistent with the objective of reconciliation with Indigenous peoples;
AND BE IT FURTHER RESOLVED THAT the Capital Regional District expresses its willingness to work with Indigenous governments, the Government of British Columbia, the Government of Canada and other entities to protect old growth forests on southern Vancouver Island in a manner consistent with reconciliation objectives, including consideration of establishing Indigenous Protected and Conserved Areas;
AND BE IT FURTHER RESOLVED THAT the Capital Regional District calls on the Government of British Columbia to work with Indigenous and non-Indigenous communities to implement recommendations of the Old Growth Strategic Review and defer old growth logging pending implementation of the panel's recommendations;
AND BE IT FURTHER RESOLVED THAT the Capital Regional District calls on the Government of British Columbia to allocate funding to enact deferrals in an

economically just manner, in the full spirit of reconciliation and to support the economic transition of affected Indigenous and non-Indigenous workers, communities and companies from unsustainable old-growth logging toward the development of long-term sustainable local economies.

Discussion ensued regarding:
- Same day consideration
- Procedure Bylaw
- United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

Director Screech left the meeting at 10:57 am.

MOVED by Director Windsor, SECONDED by Director Blackwell,
That the same day consideration be applied to the Notice of Motion.
DEFEATED
Opposed: Alto, Brame, Brent, Brownoff, de Vries, Harper, Hicks, Isitt, Loveday, Martin, McNeil-Smith, Murdoch, Orr, Plant, Seaton, Tait, Taylor, Williams, Windsor, Young

4.3. Review of Time Allocation for Delegations

Directors Isitt, Murdoch and Windsor provided the following Notice of Motion for consideration at a future meeting:

Review of Time Allocation for Delegations
That the Governance Committee be requested to review Section 13 of the Procedures Bylaw related to Delegations, with the goal of providing fair access to delegations and a reasonable use of the Board's time.

Discussion ensued regarding referrals of Notice of Motions to other committees.

5. MOTION TO CLOSE THE MEETING

5.1. 21-395 Motion to Close the Meeting

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

6. RISE AND REPORT

The Capital Regional District Board rose from the closed session at 10:41 am and reported on the following items:
3.1. - Appointments to CRD Committees and Commissions
That the Aran Puritch be appointed to the Willis Point Fire Protection and Recreation Facilities Commission for a term to expire December 31, 2022.

7. ADJOURNMENT

MOVED by Director Blackwell, SECONDED by Director Taylor,
That the May 26, 2021 Capital Regional District Board meeting be adjourned at 10:41 am.
CARRIED

_____
CHAIR

CERTIFIED CORRECT:

_____
CORPORATE OFFICER

Capital Regional District

625 Fisgard St.,
Victoria, BC V8W 1R7

Meeting Minutes

Capital Regional District Board

Wednesday, May 26, 2021 | **11:00 AM** | **6th Floor Boardroom, 625 Fisgard Street, Victoria, BC**

Special Meeting

PRESENT:
C. Plant (Chair), M. Alto (for L. Helps) (EP), Z. de Vries (for R. Mersereau) (EP) (Acting Vice Chair), D. Blackwell, P. Brent (for D. Howe) (EP), J. Brownoff (for S. Brice) (EP), B. Desjardins (EP), K. Harper (for F. Haynes) (EP), G. Holman, B. Isitt, D. Kobayashi (for R. Martin) (EP), J. Loveday (EP), C. McNeil-Smith (EP), K. Murdoch (EP), G. Orr (EP), J. Ranns (EP),D. Screech, L. Seaton, M. Tait, N. Taylor, K. Williams (EP), G. Young

Staff: R. Lapham, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; K. Lorette, General Manager, Planning and Protective Services (EP); K. Morley, General Manager, Corporate Services; T. Robbins, General Manager, Integrated Water Services; D. Fairbairn, Wastewater Treatment Project Board Chair; Manager M. Lagoa, Deputy Corporate Officer; S. Orr, Senior Committee Clerk (Recorder)

EP - Electronic Participation

Regrets: S. Brice, F. Haynes, L. Helps, M. Hicks, D. Howe, R. Mersereau, R. Windsor

The meeting was called to order at 11 am.

1. TERRITORIAL ACKNOWLEDGEMENT

A Territorial Acknowledgement was provided in the preceding meeting.

2. APPROVAL OF THE AGENDA

MOVED by Director Seaton, SECONDED by Director Tait,
That the agenda for the May 26, 2021 Session of the Capital Regional District Board be approved.
CARRIED

3. PRESENTATIONS/DELEGATIONS

There were no presentations or delegations.

4. SPECIAL MEETING MATTERS

4.1. 21-453 CRD Wastewater Treatment Project: Project Completion Report

D. Fairbairn spoke to Item 4.1. and provided a PowerPoint presentation outlining

the factors leading to the completion of the wastewater treatment project.

Discussion ensued regarding:
- presentation to First Nations in the region
- landscaping at McCauley Point pump station
- risk analysis for ongoing challenges
- operational costs
- budget review and monitoring
- lessons learned implemented in future capital projects

The CRD Board thanked members of the project board and staff for their work to reach this important milestone.

MOVED by Director Blackwell, SECONDED by Director Seaton,
The 'CRD Wastewater Treatment Project: Project Completion Report' attached as Appendix A to the staff report be received for information.
CARRIED

4.2. 21-454 Wastewater Treatment Project Governance Transition Report

Discussion ensued regarding future quarterly report and the next meeting of the Core Area Liquid Waste Management Committee, which is scheduled for July.

MOVED by Director Blackwell, SECONDED by Director Isitt,
The 'Wastewater Treatment Project Governance Transition Report' attached as Appendix A to the staff report, be received for information.
CARRIED

4.3. 21-457 Repeal of Core Area Wastewater Treatment Project Delegation and Related Delegation Bylaw Amendments

K. Morley spoke to Item 4.3.

Discussion ensued regarding delegation authority.

MOVED by Director Blackwell, SECONDED by Director Seaton,
That Bylaw No. 4348, Capital Regional District Delegation Bylaw No. 1, 2017, Amendment Bylaw No. 3, 2021, be read a first, second, and third time.
CARRIED

MOVED by Director Blackwell, SECONDED by Director Seaton,
That Bylaw No. 4348 be adopted.
CARRIED

MOVED by Director Blackwell, SECONDED by Director Seaton,
That Bylaw No. 4429, Capital Regional District Delegation Bylaw No. 1, 2017, Amendment Bylaw No. 4, 2021, be read a first, second, and third time.
CARRIED

MOVED by Director Blackwell, SECONDED by Director Seaton,
That Bylaw No. 4429 be adopted.
CARRIED

MOVED by Director Blackwell, SECONDED by Director Seaton,

That Bylaw No. 4428, Officers', General Managers' and Management Staff's Bylaw No. 2006, Amendment Bylaw No. 6, 2021", be read a first, second, and third time.
CARRIED

MOVED by Director Blackwell, SECONDED by Director Tait,
That Bylaw No. 4428 be adopted
CARRIED

5. ADJOURNMENT

MOVED by Director Blackwell, SECONDED by Director Tait,
That the May 26, 2021 Capital Regional District Board meeting be adjourned at 12:16 pm.
CARRIED

_____
CHAIR

CERTIFIED CORRECT:

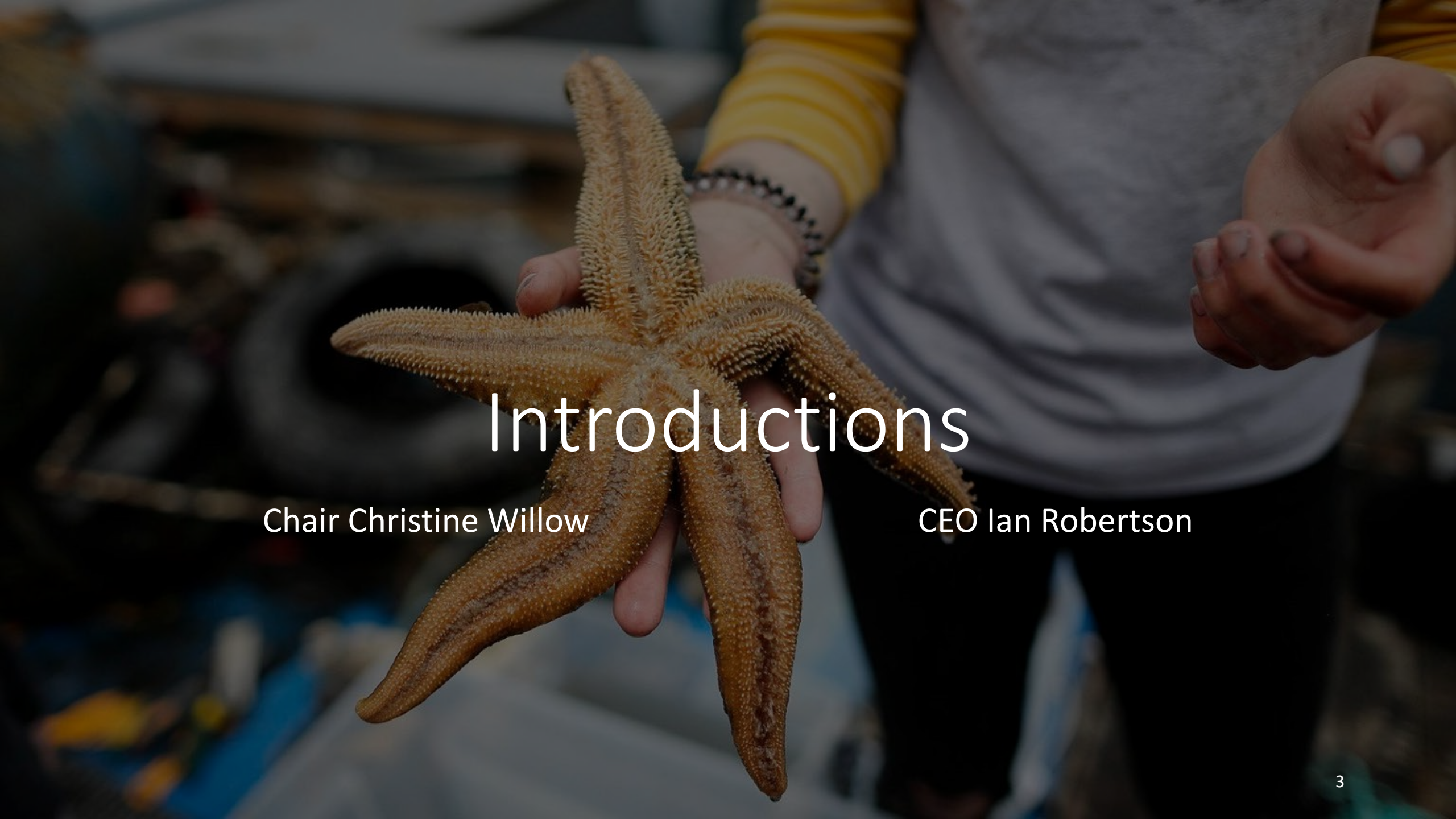
_____
CORPORATE OFFICER

Member Agency Report

Capital Regional District

June 9, 2021

Acknowledging the Traditional Territory of the Lekwungen People



Introductions

Chair Christine Willow

CEO Ian Robertson

Guiding Principles

First Nations Relationship

Triple Bottom Line

Financial Self-Sustainability

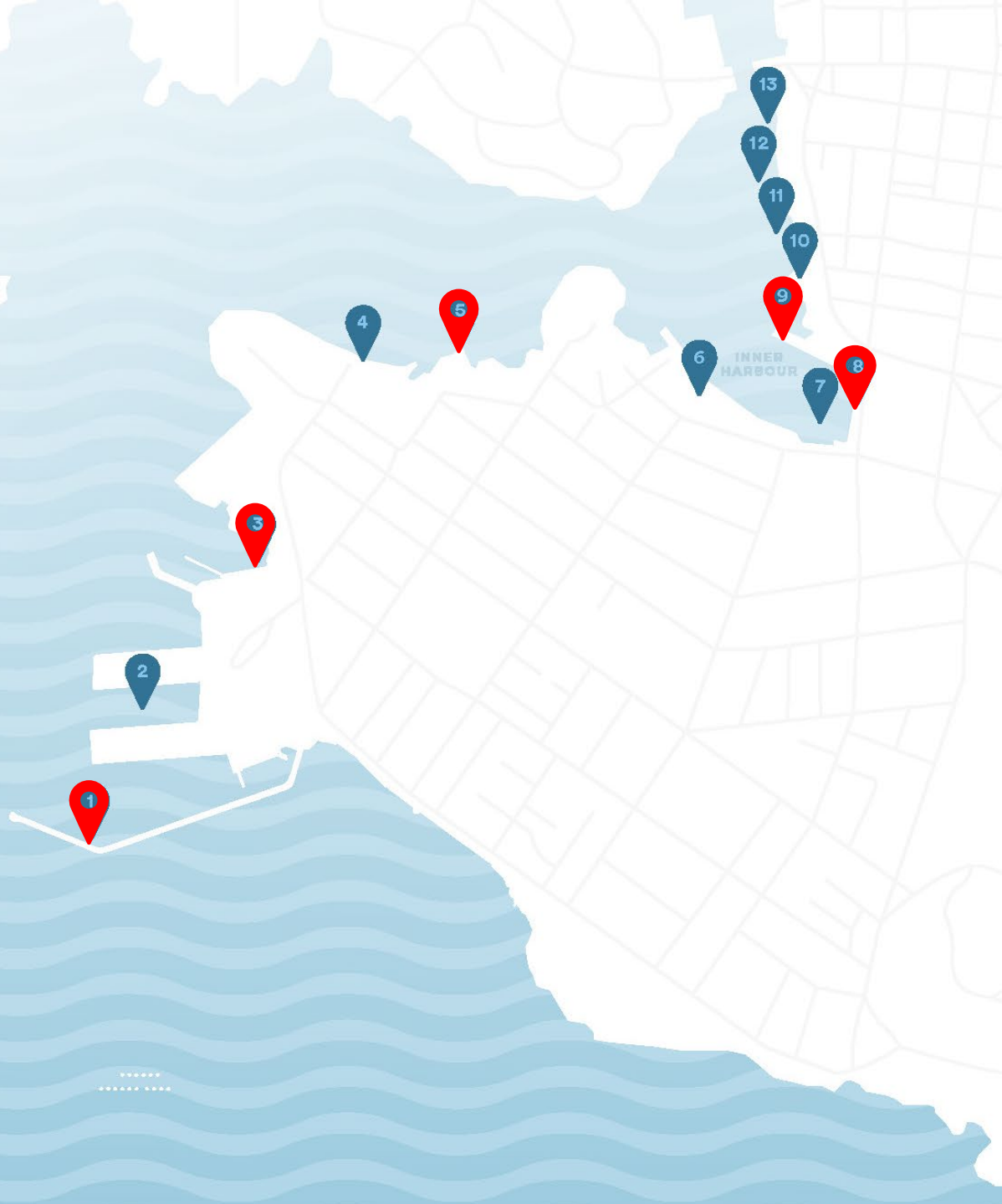
Working Harbour

Accountability

GVHA Assets at a Glance

We own and operate high-profile community assets along with commercial and marine holdings.

1. Ogden Point Breakwater
2. Victoria Cruise Terminal at The Breakwater District
3. Public Boat Launch
4. Fisherman's Wharf and Fuel Dock
5. Raymur Point Customs Dock
6. Steamship Terminal
7. Causeway Marina
8. Inner Harbour Lower Causeway
9. Ship Point
10. Broughton Street Pier
11. Wharf Street Marina
12. Hyack Terminal
13. Johnson Street Marina



Properties Owned by GVHA

THE BREAKWATER DISTRICT AT OGDEN POINT

- Approx. 9 hectares of land & seabed, including 3 berths, breakwater, warehouse, staging area, helicopter terminal, & other commercial buildings

FISHERMAN'S WHARF

- Approx. 4.5 hectares of land & seabed providing moorage for commercial fishing and pleasure vessels, fish off-loading facilities, fuel dock, float home community, and other commercial & recreational activities

INNER HARBOUR

- Lower Causeway and Ship Point – recreational areas, guest moorage facilities, public pathway around harbour, and commercial and public event activities
- Wharf Street & Johnson Street Marinas – commercial, annual & guest moorage

Properties Leased by GVHA

RAYMUR POINT

- A pocket marina east of Fisherman's Wharf facility housing the harbour's customs dock, which was relocated and newly installed in 2015

STEAMSHIP TERMINAL BUILDING

- Heritage four-story building on the Inner Harbour, restored to a vibrant commercial and cultural hub with a focus on public access
- Steamship Float: Former Undersea Gardens location secured by GVHA for additional harbor moorage

Public Amenities

GVHA maintains the following Public Amenities:

- Lower Harbour Inner Causeway
- Ogden Point Breakwater
- Raymur Point Customs Dock
- Ship Point

Cost to maintain these non-revenue generating assets is ~$300K per year and is funded by GVHA's sole revenue streams (cruise, tenants, marinas)

Member Agencies

Songhees Nation

Making a difference...together

VICTORIA
BC, CANADA

Victoria Esquimalt
HARBOUR SOCIETY

THE CHAMBER.
GREATER VICTORIA
CHAMBER OF COMMERCE

Esquimalt Nation

THE CITY OF VICTORIA

Township of
ESQUIMALT

Strategic Planning

Strategic Plan 2015-2025

1. Economic, Social and Environmental Benefit for the Region
2. Financial Self-Sufficiency & Responsible Stewardship of GVHA Properties
3. A Trusted Advocate for the Working Harbour
4. Effective Governance and Accountability

Revised Business Plan 2019-2022

- Complete all Facility Condition Assessments and implement asset management strategy
- Develop an investment strategy that strives for long-term financial sustainability with a triple bottom line view
- Ensure the long-term sustainability of cruise
- Develop a strategy for our community amenities including which best investment options, highest/best use/repair programs, etc.
- Continue organizational process improvements
- Develop a human resource strategy focusing on the culture of GVHA and the experience for both employees and customers
- Continue to explore, implement, and maintain sustainability initiatives at all properties through a triple bottom line lens

Who We Are?

GVHA runs a 24/7/365 operation on all our properties

Some interesting facts about what we manage:

- Responsible for over 57,300 m2 of pier/wharf/dock space = over 8 football fields
- Responsible for daily inspection of over 4 kms of pier/wharf, dock length
- 107 commercial customer agreements
- We report at least one security incident per week on our properties
- Responsible for safety and security of 33 float homes, 102 live-aboard vessels; over 350 people
- We collect 2,200 cubic yards of waste off our properties annually = 119,000 bags of topsoil and over 1,400 cubic yards of cardboard recycling annually

Financial Performance – 2020-21

Unaudited Forecast for fiscal year-end March 31, 2021

$5M in Operating Revenues

Budgeted: $18.1M

$-1.6M in Cash from Operations

Original Budget: $2.9M

Re-forecasted: $-3.6M

$6.6M in Operating Expenses

Budgeted: $15.2M

$0.8M in Capital Expenditures

Budget 2021-22

$4.6M in Operating Revenues

$-3.8M in Cash from Operations

$8.4M in Operating Expenses

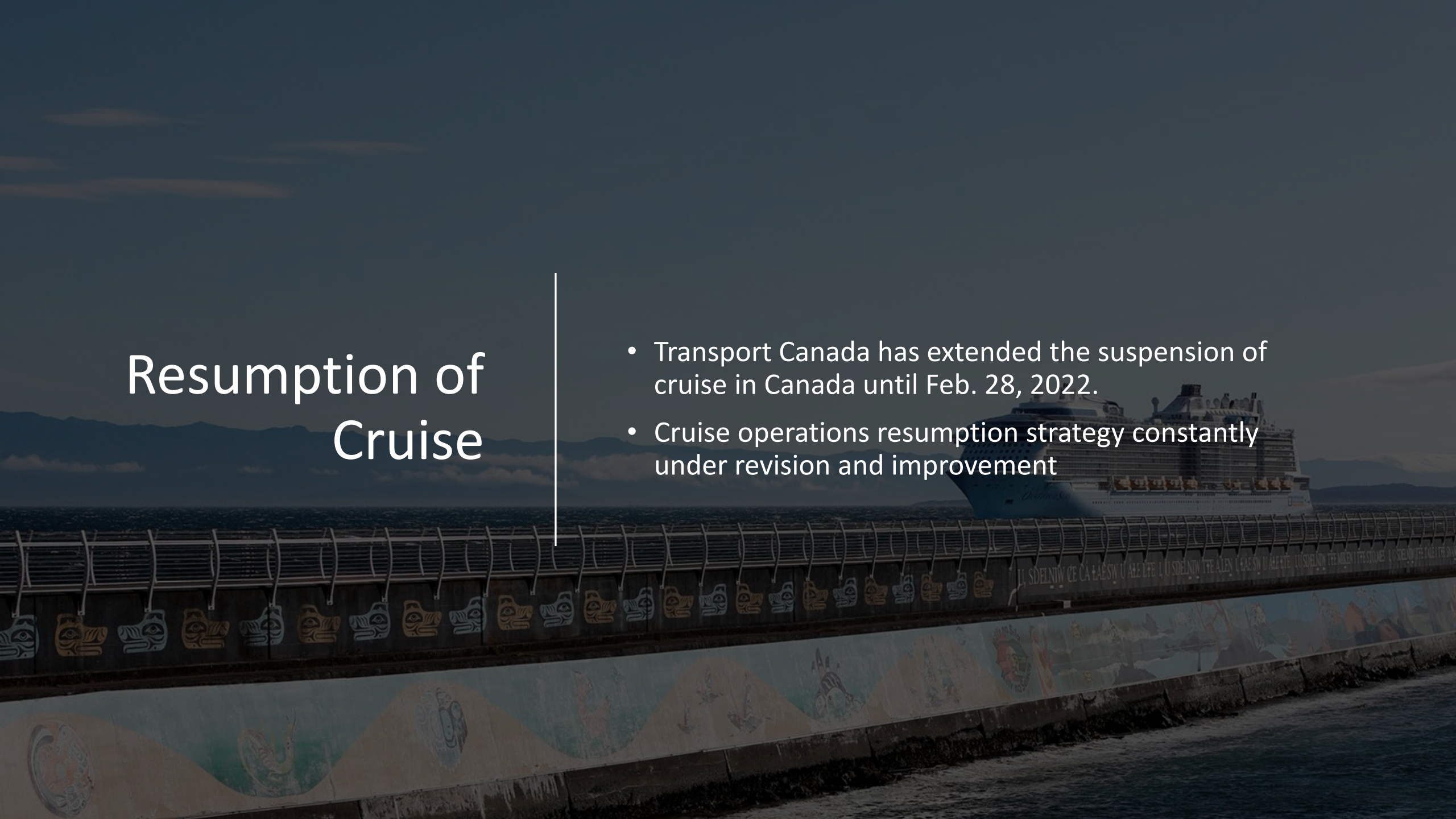
$0M in Capital Budgeted

COVID-19: Our Response

- Operations & Staffing Reductions
- Capital Project Postponements
- Canadian Emergency Wage Subsidy
- Canadian Emergency Commercial Rent Assistance Program
- Commercial Customer Support & Rent Deferrals

Resumption of Cruise

- Transport Canada has extended the suspension of cruise in Canada until Feb. 28, 2022.
- Cruise operations resumption strategy constantly under revision and improvement



COVID-19: Infrastructure & Major Projects

- Mooring dolphin extension completed
- Facility condition assessments completed

Shore Power Feasibility Study

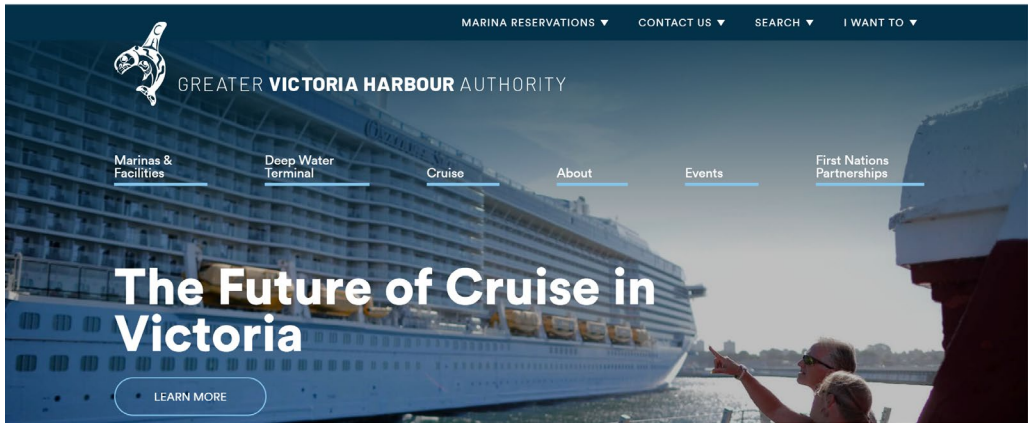
- A reduction of more than 46% of greenhouse gas emissions (GHG) and criteria air contaminants (CACs) is achievable, and equivalent to 1,394 cars on the road per year.
- The cost of the proposed solution is between $23.3 million and $24.8 million.
- By 2030, 85% of all vessels calling to the Victoria Cruise Terminal will be shore power capable; that number will increase to 95% by 2040.

How You Can Help

- What is the role of CRD as a Member Agency?
- What can CRD do to support GVHA rebuild?

How You Can Stay Informed

- GVHA Website:



- Social Media:

- GVHA Monthly Newsletter

Key Contacts

Board of Directors:

• Board Chair	Christine Willow	cwillow@gvha.ca
• Board Admin	Caralyn Laviolette	claviolette@gvha.ca

GVHA Operations:

• CEO	Ian Robertson	irobertson@gvha.ca
• Corporate Admin	Lori McLaren	lmclaren@gvha.ca

Q&A

Wastewater Treatment Project
Treated for a cleaner future

Minutes of a Meeting of the Core Area Wastewater Treatment Project Board Held Wednesday, May 19, 2021 in the McLoughlin Point Wastewater Treatment Plant Multipurpose Room, 337 Victoria View Road, Victoria, BC

Members: D. Fairbairn (Chair); D. Hayden (Vice-Chair); T. Stanley; D. Howe; C. Smith; B. Eaton; R. Lapham;
CRD Staff: D. Clancy, Project Director; E. Scott, Deputy Project Director (EP); E. Russell (recorder);
Guest: Greg Lewis, Norton Rose Fulbright
*EP= Electronic Participation

The meeting was called to order at 12:06 PM.

1. Territorial Acknowledgement

   Chair Fairbairn provided a territorial acknowledgement.

2. Approval of Agenda and Statement of No Conflict

   The members stated they had no conflict with the agenda items.

   MOVED by D. Howe, **SECONDED** by T. Stanley,

   That the Agenda be approved.

   CARRIED

3. Safety Minute

   D. Clancy provided a safety minute about reverse parking into parking spots, reminding the Project Board that one in seven parking accidents involves vehicles backing out of parking spots and highlighted the safety benefits of reversing in.

4. Approval of the April 22, 2021 Meeting Minutes.

   MOVED by D. Hayden, **SECONDED** by B. Eaton,

   That the minutes of the April 22, 2021 meeting be approved.

   CARRIED

5. Report of the Chair

   The Chair reminded the Project Board of the importance that has been placed throughout Project delivery on proper oversight and accountability; alignment with the CRD; and transparency regarding Project decisions.

   The Chair recognized the current and past Project Board members, noting that four members have been involved with the Project since before the establishment of the Project Board. The Chair also recognized the valuable support and advice that Greg Lewis has provided to the Project Board and Project Team.

DRAFT

6. Presentations and Delegations

No registrations/delegations

7. Project Board Business

7.1. Staff Report for Approval: CRD Wastewater Treatment Project: Project Completion

MOVED by T. Stanley, **SECONDED** by C. Smith,

The 'CRD Wastewater Treatment Project: Project Completion Report' attached as Appendix A to the staff report be approved and forwarded to the CRD Board for information.

CARRIED

E. Scott and D. Clancy provided an overview of the Project Completion Report including: an assessment of the Project's performance against the goals established by the CRD Board; the status of the Project's key performance indicators at Project completion; variances in the Project's scope, schedule, and cost from the baseline plans prepared by the Project Board and/or Project Team; and an outline of Project successes and challenges, with a focus on the the co-operation of multiple parties and governance bodies that have been critical to the delivery of the Project, including:

- The commitment of the Project's contractors to safety as the Project's top priority;
- The Project Board's oversight and governance;
- The dedication of the Project Team to the achievement of the Project's goals;
- The full support of the CRD, and the integration of CRD departments in Project delivery;
- The input and engagement of the Project's First Nations partners;
- The collaboration and cooperation of host municipalities, funding partners and regulatory authorities;
- The engagement of community and neighbourhood associations which assisted in the identification of concerns, allowing the Project to respond or adjust plans as appropriate;
- The willingness of transit and other service providers to coordinate with our contractors to work around impacted areas while continuing to provide service to the community; and
- The patience of the CRD's residents, commuters, businesses and stakeholders, particularly those most impacted by the Project's construction and operations.

D. Howe enquired about costs incurred prior to the establishment of the Project Board, and whether any of these were included in the forecast total Project cost of $766.7M.

D. Clancy advised that the total Project cost includes $41million of costs incurred before May 2016. D. Clancy noted that before the Project Board was established the CRD evaluated the costs incurred in planning wastewater treatment for the core area, and determined that $41M of costs incurred before May 2016 were of value to the Project, of

DRAFT

which approximately $12.5M were associated with the construction of the Craigflower Pump Station, which was built between 2013 and 2015.

B. Eaton enquired about the cost of the amenities that were part of the Project, and how they are accounted for in the forecast total Project cost.

E. Scott advised that the cost of amenities provided as part of the Project are included within the Project component most closely-related to the amenity.

7.2. Staff Report for Approval: Wastewater Treatment Project Governance Transition Report

MOVED by D. Howe, **SECONDED** by T. Stanley,

The 'Wastewater Treatment Project Governance Transition Report' attached as Appendix A to the staff report, be approved and forwarded to the CRD Board for information.

CARRIED

E. Scott and D. Clancy provided an overview of the Project's Governance Transition Report, summarizing the Project-related commitments and activities that extend beyond May 2021 and are transitioning from the Project to the CRD. E. Scott noted that the Project budget includes committed funds to fulfil the outstanding obligations, including for the resources required to oversee the close-out of the construction contracts.

D. Clancy provided a summary of the work remaining to close-out the Project's construction contracts and advised the Project Board that transition meetings had been held and more were planned over the next few days between relevant Project Team and CRD staff to facilitate a successful transition.

8. Correspondence

9. New Business

A presentation was made by the Project Board thanking Dave Clancy and Elizabeth Scott for all of their efforts to deliver the Project on schedule and within the Project's approved budget.

10. Motion to Close the Meeting

MOVED by C. Smith, **SECONDED** by T. Stanley,

That the Core Area Wastewater Treatment Project Board meeting be closed in accordance with the Community Charter: Part 4, Division 3 90(1) (g) litigation or potential litigation affecting the municipality.

CARRIED

11. Adjournment

The Project Board moved to closed session at 2:02 PM
On motion the meeting adjourned at 2:21 PM

DRAFT

CHAIR

RECORDER

DRAFT

Making a difference...together

REPORT TO ELECTORAL AREAS COMMITTEE
MEETING OF WEDNESDAY, JUNE 09, 2021

SUBJECT **Appointment of Officers**

ISSUE SUMMARY

This report is to update bylaw enforcement appointments to reflect staff changes and to provide auxiliary relief in the Capital Regional District 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 Capital Regional District Bylaw No. 2681, the Electoral Areas Committee 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, Anna Kebaien and Robert Bakewell be appointed as Assistant Bylaw Officers.

Alternative 2
That the Appointment of Officers report be referred back to staff for further information based on Electoral Areas Committee direction.

IMPLICATIONS

Service Delivery Implications
These appointments ensure consistent bylaw enforcement in the CRD service areas.

CONCLUSION

The bylaw enforcement appointments reflect staff changes and provides auxiliary relief in the Capital Regional District 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, Anna Kebaien and Robert Bakewell be appointed as Assistant Bylaw Officers.

Submitted by:	Shawn Carby, CD, BHSc, MAL, Senior Manager Protective Services
Concurrence:	Kevin Lorette, P.Eng., MBA, General Manager Planning & Protective Services
Concurrence:	Bob Lapham, MCIP, RPP, Chief Administrative Officer

Making a difference...together

REPORT TO ELECTORAL AREAS COMMITTEE
MEETING OF WEDNESDAY, JUNE 9, 2021

SUBJECT **BC Energy Step Code - Status Update**

ISSUE SUMMARY

An update on the BC Energy Step Code and the intentions of the Building and Safety Standards Branch to introduce revisions by 2022.

BACKGROUND

The BC Energy Step Code was first introduced into the BC Building Code in April 2017 as an optional standard for increased energy efficiency of new buildings (see attached overview of the Energy Step Code as Appendix A). These voluntary provincial standards are based on incremental steps, whereby for houses and Part 9 buildings Step 1 is considered equivalent to current prescriptive Code requirements and Steps 2, 3, 4 and 5 are 10%, 20%, 40% and 80% respectively more energy efficient than Step 1.

The current 2018 Building Code includes both prescriptive insulation requirements, such as minimum insulation values for a wall system, as well as the performance based options of the Energy Step Code, involving energy modelling to demonstrate an overall efficiency of a building as a whole.

Provincial targets for mandatory energy efficiency requirements for new buildings were originally set at 20% more energy efficient by 2022, 40% by 2027 and 80% by 2032. The 2032 goal of 80% would result in net-zero energy ready buildings.

In recent discussions with the Building and Safety Standards Branch, the CRD was advised that the intention is to still introduce changes to the Building Code within 2022 that will increase energy efficiency requirements by 20%. A draft of the revisions is expected to be prepared by the fall of 2021. Industry consultation and review will take place prior to the expected adoption of the revisions in December 2022. Once the increased energy efficiency requirements have been adopted into the BC Building Code, municipalities and districts must apply, at minimum, the requirements appropriate to buildings of new construction. Details and specific timeframes have not been established at this time.

ALTERNATIVES

Alternative 1
The Electoral Areas Committee recommends to the Capital Regional District Board:
That the BC Energy Step Code – Status Update report be received for information.

Alternative 2
That the BC Energy Step Code - Progress Review report be referred back to staff for further information based on Electoral Areas Committee direction.

IMPLICATIONS

Intergovernmental Implications
At present municipalities and districts may voluntarily implement Step Code requirements within their bylaws. Many districts and municipalities throughout BC have begun varying forms of implementation ranging from initial notification and consultation to mandatory steps for buildings of new construction.

CONCLUSION

The original provincial targets for mandatory energy efficiency under the BC Energy Step Code remain the same with an expected implementation of a 20% energy efficiency increase by 2022. Details and exact timeframes are yet to be determined.

RECOMMENDATION

The Electoral Areas Committee recommends to the Capital Regional District Board:
That the BC Energy Step Code – Status Update report be received for information.

Submitted by:	Mike Taylor, RBO, Manager and Chief Building Inspector, Building Inspection
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A - How the BC Energy Step Code works

ENERGY STEPCODE
BUILDING BEYOND THE STANDARD

How the BC Energy Step Code works

The Province of British Columbia first introduced energy efficiency as a BC Building Code objective in 2008. Ever since, designers and builders have had the option to use either “prescriptive” or “performance” approaches to comply with the code’s efficiency requirements.

To date, the vast majority of builders in British Columbia have pursued the prescriptive approach. Following this approach, buildings must meet specific requirements for insulation, windows, furnaces, water heaters, lighting and other equipment and systems. It focuses on individual elements, rather than ensuring the building functions well as a system. The result can be a building that does not perform as well as intended.

Builders have a second option to comply with the energy-efficiency requirements of the BC Building Code: the performance approach. The BC Energy Step Code offers a specific form of this approach.

The performance approach establishes a desired outcome, and leaves it to the design and building team to decide how to achieve it.

To comply with the BC Energy Step Code, builders must use energy software modelling and on-site testing to demonstrate that both their design and the constructed building meet the requirements of the standard. They may use any materials or construction methods to do so.

This approach echoes that taken by many green-building certification programs, including Natural Resources Canada’s Energy Star for New Homes™ and R-2000™ programs, and Passive House Institute (in Darmstadt) certification, as well as the Canadian Home Building Association’s Net Zero Home™ and Net Zero Ready Home™ programs.

A high-performance staircase

As shown below, the regulation sets performance targets for new construction and groups them into “steps” that apply across various building types and regions of the province. The Lower Steps are relatively straightforward to meet; the Upper Steps are more ambitious.

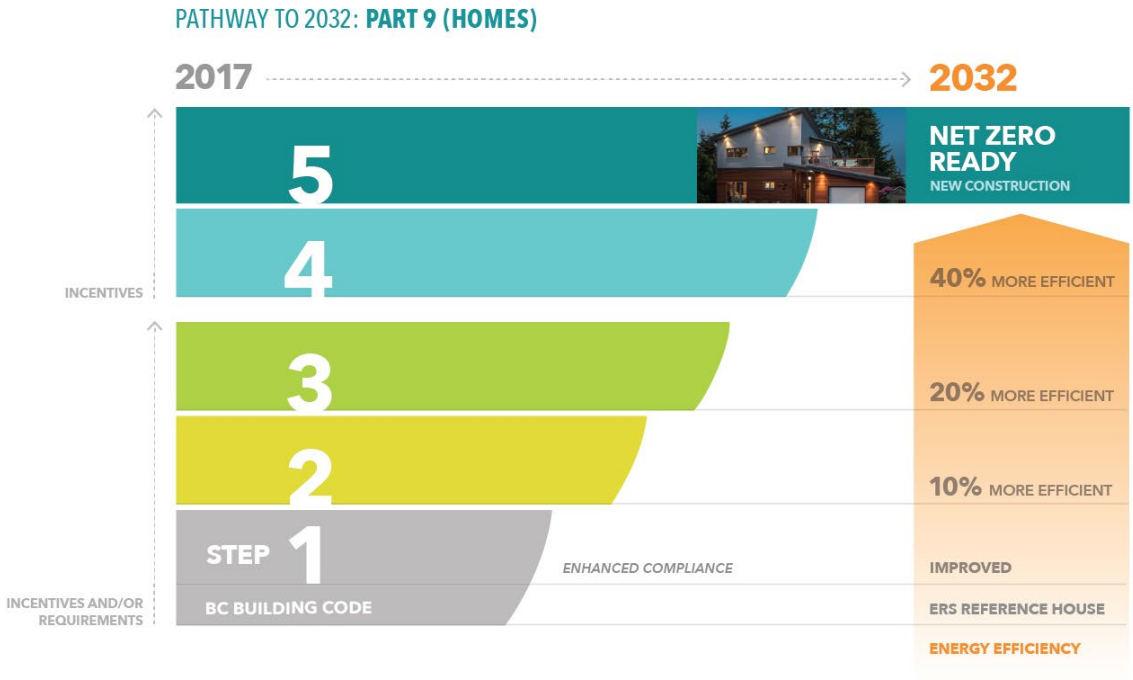
All authorities having jurisdiction over the BC Building Code—including local governments—can choose to require or incentivize builders to meet one or more steps of the BC Energy Step Code as an alternative to the code’s prescriptive requirements.

For governments, the BC Energy Step Code offers assurance that new buildings are performing as billed. Meanwhile, on the other side of the counter, builders have a more flexible option to comply with the energy-efficiency provisions of the provincial legislation. The new standard empowers builders to pursue innovative, creative, cost-effective solutions—and allows them to incorporate leading-edge technologies as they come available.

Local governments can choose to require or incentivize a given step of the BC Energy Step Code in new construction. In addition, beyond the regulatory context, builders and developers can adopt a given step to use across all of their projects, if they wish.

The diagrams below show what the performance improvements look like for simple buildings (those covered under Part 9 of the BC Building Code) and more complex buildings (covered by Part 3 of the code). The first diagram outlines five steps from the current BC Building Code requirements to net-

zero energy ready requirements for Part 9 residential buildings. As shown in the second diagram, the same progression for Part 3, wood-frame residential buildings is four steps.



Over time, as high-performance designs, materials, and systems become increasingly available and cost-effective, the building industry will integrate new techniques into all new buildings. By 2032, the BC Building Code will move toward the higher steps of the BC Energy Step Code as a minimum requirement. The National Building Code of Canada is similarly moving towards this outcome by 2030.

Page Last Updated: December 31, 2018.

Making a difference...together

ERM 21-21

REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, MAY 19, 2021

SUBJECT **Enerkem Facility Update**

ISSUE SUMMARY

To provide an update on Capital Regional District (CRD) staff discussions with Enerkem regarding suitability of its Integrated Resource Management waste-to-energy technology for the capital region.

BACKGROUND

At the October 21, 2020 meeting, staff provided the Environmental Services Committee with information on the Enerkem waste-to-energy technology that is currently operating at the Alberta Biofuels Demonstration Facility in Edmonton. It was identified that the CRD would need to enter into a non-disclosure agreement to obtain further information about the Enerkem technology, process effectiveness and costs, and staff were directed to do so.

Staff have subsequently met with Enerkem to obtain further information about the technology. A non-disclosure agreement was signed in January 2021, and staff met with an Enerkem representative in early 2021 for a high-level business model discussion.

Enerkem evaluated that the feedstock quantities in the region are not enough for its standard system and, combined with the lack of existing industrial infrastructure nearby, the conditions would not allow the bio-refinery project to be viable.

Strategy 15 of the new Solid Waste Management Plan commits the CRD to continuing to conduct research, investigate and report out on emerging waste management technologies, including alternatives to landfilling, such as Integrated Resource Management and gasification. As the Solid Waste Management Plan is implemented, staff will return to the committee with next steps for further investigation into emerging waste management technologies.

CONCLUSION

Staff have met with representatives from Enerkem who have confirmed that the Capital Regional District's feedstock availability, and level of local industrial activity, make the CRD an unsuitable location for Enerkem technology at this time. Staff continue to research and investigate emerging waste management technologies and will return to the committee for direction regarding next steps for further investigation during implementation of the Solid Waste Management Plan.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:

That this report be received for information.

Submitted by:	Russ Smith, Senior Manager, Environmental Resource Management
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

Making a difference...together

REPORT TO FIRST NATIONS RELATIONS COMMITTEE
MEETING OF WEDNESDAY, MAY 26, 2021

SUBJECT **Inclusive Governance & Decision-Making Update**

ISSUE SUMMARY

To provide an update to the First Nations Relations Committee on the CRD Board Priority 3a-1: 'Look to First Nations for leadership in understanding how to create new regional planning & decision-making systems together on their Traditional Territories.'

BACKGROUND

Inclusive Governance

Following the endorsement of the CRD Board to include First Nation Members at Standing Committees in early January 2021, letters were distributed to all nine First Nations (see example at Appendix A).

The W̱SÁNEĆ Leadership Council has nominated Tsartlip First Nation Councillor Joni Olsen and her alternate Phillip Tom to join the CRD committee tables. Staff have provided an initial orientation session and will continue to provide any further assistance they may require to attend meetings. Pauquachin First Nation has indicated they would like a formal presentation at a future Chief and Council meeting which CRD staff will coordinate. The Esquimalt First Nation will be reviewing the proposal at an upcoming Chief and Council meeting and will provide feedback to the CRD.

In the course of reaching out to the Nations to seek appointments, staff have received additional feedback. At a recent Lekwungen Liaison table, the Nations indicated an interest in participating, however shared that elected representatives have limited capacity to attend. The Songhees representative raised the possibility of traditional knowledge keepers attending with observer status. The Nations expressed concern that the current compensation rate for member participation is insufficient in comparison to compensation they would typically receive for similar meetings.

Follow up conversations have taken place with Pacheedaht and Sc'ianew First Nations where there is an interest in participation but their elected officials have limited capacity to attend. The Nations indicated that it may be more feasible for their staff or other representatives to attend. The Board Chair has met with T'Sou-ke First Nation Chief and Council. They indicated they would be discussing the item further at an upcoming Chief and Council meeting and will provide feedback to the CRD. While there are some questions and concerns that have emerged from this process, the response has generally positive towards the effort CRD has made towards inclusion, and CRD staff will continue engaging with local First Nations to share information and assist those that are interested in attending CRD standing committees.

To reinforce that participation in standing committees is intended to support a government-to-government relationship, direct outreach from CRD Directors would assist in inviting participation. Where CRD Directors have existing relationships with local Nations within their jurisdiction, staff

recommend they reach out to discuss the inclusive governance model, answer any questions and hear any feedback that might be brought forward. This would align with the request from First Nations to establish leadership to leadership relationships. Staff are able to support CRD Directors with any of their outreach efforts.

Collaborative Decision-Making across CRD operations

Implementing the CRD's Statement of Reconciliation and related Board Priorities requires increasing communication between CRD staff and First Nations on a wide scope of topics across all CRD service delivery, in order to incorporate First Nations' perspectives into our work. CRD staff regularly request assistance from the First Nations Relation Division staff to facilitate input from the Nations on topics ranging from archaeology, land acquisition, parks planning, ecological restoration, active transportation, water and waste water servicing, parks interpretive programming, food security programming, and emergency management, to name a few. The ability of the First Nations Relations team to facilitate an increasing level of collaboration in CRD service delivery is hindered by the overstretched capacity of the Nations. First Nations are often over extended in their ability to respond to all the agencies working in their territory and do not have dedicated resources to respond to CRD requests.

Where program funding for liaison positions exists, communication is enhanced and CRD staff are more able to incorporate First Nations' perspectives into plans and day-to-day operations.

Under the agreements entered into as part of the Core Area Wastewater Treatment Project, liaison positions were funded with the Esquimalt and Songhees First Nations for 4 years, and the W̱SÁNEĆ Leadership Council for 2 years. The contract with the Esquimalt and Songhees First Nations ended in March of this year and the contract with the W̱SÁNEĆ Leadership Council ends in December of 2021. These positions have been incredibly valuable to the design and construction of the Wastewater Treatment Project, while also supporting other CRD project work and strengthening relationships.

In 2020 alone, CRD staff brought 30 unique items to the Lekwungen liaison table for discussion, supporting those CRD divisions and municipal partners asking for assistance in engaging the Nations on various projects, plans, strategies, grant applications, land acquisitions and decisions. Through the regularly scheduled liaison tables, staff were able to bring these requests in a respectful and coordinated manner, and the liaisons were able to do the work of connecting with people within their Nation (elected leadership, staff, knowledge keepers, subject experts) so as to provide input and feedback to the CRD on these initiatives. The liaison tables provided the space and dedicated resources to properly discuss, review and revisit projects brought forward by the CRD as well as a reciprocal opportunity for the Nations to bring forward requests of the CRD.

Funded liaison tables have been a regular ask by First Nations to assist their ability to meaningfully engage with CRD referrals. Most recently the Pacheedaht have requested resources for a liaison position to facilitate engagement with CRD inclusive governance and the development of a governance MOU which would enhance service delivery in the region.

Staff will connect with other regional districts and other levels of government, including First Nations, to compile options and best practices for facilitating ongoing respectful engagement with local First Nations on CRD projects in a manner that supports the CRD's Statement of

Reconciliation theme of self-determination.

Information Sharing Regarding Land Altering Activities

In December of 2019, the CRD entered into an MOU with the W̱SÁNEĆ Leadership Council (WLC) as part of the Core Area Wastewater Treatment Project which included a commitment to develop an information sharing protocol to ensure the WLC is informed of CRD activities within W̱SÁNEĆ territory. One of the ways staff are demonstrating this commitment is by engaging in more information sharing on planned capital projects within W̱SÁNEĆ traditional territory and working towards more inclusive decision-making on mitigating concerns where a site overlaps with sacred, cultural or archeologically significant areas.

Currently this initiative is a pilot project guided by the principles in the Protection and Conservation of Heritage Sites policy. CRD staff and the WLC have held the first two of what are to be quarterly meetings, and together are addressing on a project-specific basis the level of deployment of Cultural Monitors on CRD projects in W̱SÁNEĆ territory, based on a review of project information and an understanding of the archeological significance of an area. First Nations Relations Division staff are assisting project managers on working to bring capital budgets and planning cycles into alignment with this new policy and model of enhanced mitigation for the protection of cultural heritage resources. Staff anticipate reporting back prior to the end of 2021 with more information on how this initiative is progressing.

ALTERNATIVES

Alternative 1
The First Nations Relations Committee recommends to the Capital Regional District Board:
That this report be received for information.

Alternative 2
That this report be referred back to staff for additional information.

IMPLICATIONS

Intergovernmental Implications (e.g. First Nations)
Through the CRD's statement of reconciliation, the CRD Board has committed to working with First Nations through the governance systems they choose and to support First Nations when there's an interest in working with CRD's governance system. This commitment requires ongoing work to continue to build familiarity, trust and to respond to queries and suggestions from local First Nations. First Nations continue to have an expectation that their rights and authority is respected and addressed in their territory and while the CRD's inclusive governance model does not fully address that request it has been noted that it is a step in the right direction.

Service Delivery Implications
Our collective ability to build strong relationships with First Nations based on trust and mutual respect, partnerships and working together on shared goals will be significantly aided by having First Nations representatives actively participating in Standing Committee discussions and engaging with CRD staff. This level of engagement at both the governance and staff level will support and enable service delivery that is informed by Indigenous perspectives as a result of

deepening relationships with First Nations.

Alignment with Board & Corporate Priorities
The 2019 – 2022 CRD Board Priorities include Reconciliation with First Nations, specifically:

3a Look to First Nations for leadership in understanding how to create new regional planning and decision-making systems together on their Traditional Territories.
3b Seek partnerships, share information and deliver fair and equitable services in working with First Nations on achieving their economic goals.
3c Work with First Nations on taking care of the land and water while providing space for cultural and ceremonial use, food and medicine harvesting, traditional management practices and reclaiming Indigenous place names.

Alignment with Existing Plans & Strategies
The following strategies have been identified as related to the Reconciliation with First Nations Board Priority:

- Special Task Force on First Nations Relations Final Report and the Statement of Reconciliation
- Regional Climate Action Strategy
- Regional Food and Agricultural Strategy
- Regional Growth Strategy
- Regional Housing Affordability Strategy
- Regional Parks Strategic Plan
- Regional Water Supply Strategic Plan
- Organizational Development Plan
- Corporate Asset Management Strategy

CONCLUSION

The CRD is continuing to explore ways to look to First Nations for leadership in creating new regional planning and decision-making systems together on their Traditional Territories. One opportunity is through the CRD's inclusive governance model. Outreach is taking place with local First Nations however the government-to-government nature of this opportunity could be elevated through targeted outreach from CRD elected leadership. Liaison tables have been another method to support First Nations inclusion in CRD projects. These liaison tables, funded by time-limited projects, have been very valuable and effective for their duration. CRD staff are working towards more inclusive decision-making with the W̱SÁNEĆ Leadership Council regarding land altering activities and mitigating any potential impacts on W̱SÁNEĆ cultural heritage resources. CRD staff will be continuing to explore options for supporting strategic engagement of First Nations in CRD operations and decision-making.

RECOMMENDATION

The First Nations Relations Committee recommends to the Capital Regional District Board:
That this report be received for information.

Alternative 2

Submitted by:	Caitlyn Vernon, MES, Manager, First Nations Relations

Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Letter to Esquimalt First Nation on Inclusive Governance

Making a difference...together

Executive Office
625 Fisgard Street, PO Box 1000
Victoria, BC V8W 2S6

P: 250.360.3125
F: 250.360.3130
www.crd.bc.ca

January 29, 2021

File: 0400-60

Chief Rob Thomas
Esquimalt Nation
1189 Kosapsum Crescent
Victoria, BC V9A 7K7
Via email: rob@esquimaltnation.ca ; Katie@esquimaltnation.ca

Dear Chief and Council:

RE: FIRST NATION INCLUSION IN REGIONAL GOVERNANCE

Following up from our presentation to your Nation, the Capital Regional District (CRD) Board has approved a number of bylaw changes to provide for the inclusion of First Nations elected representatives on CRD standing committees. First Nations have expressed a desire for an increased role in regional decision-making and this opportunity creates space for more inclusive discussions and First Nations involvement in CRD governance.

The approved bylaw changes create a flexible model of inclusion where First Nations elected representatives can formally participate and vote on items of interest at CRD standing committees. This is not meant to replace the need for ongoing government to government discussions but to offer another means to include First Nations at decision-making tables.

If you are interested in being involved, we request that your Nation designate an elected representative, and an alternate to sit on CRD Committees. Attached is a form to fill out with this information and a list of CRD standing committees currently proposed to include First Nations participation. Once we gather a list of names and contact information, we will be providing an orientation session outlining our regional governance structure which will also provide the opportunity to receive feedback and any additional questions or concerns you may have.

Please feel free to reach out to Erich Kelch at ekelch@crd.bc.ca or by phone at 250-893-7848 should you have any questions about this inclusive governance work. Staff could also offer a presentation to Chief and Council if that would be of further benefit. Thank you for your time and we look forward to continuing to build a respectful working relationship that serves the region.

Sincerely,

Colin Plant
Chair, Capital Regional District Board

Attachment: First Nations Member CRD Committee Appointment Form

cc: Katie Hooper, Administrator, Esquimalt Nation
Robert Lapham, CAO, Capital Regional District
Kristen Morley, GM Corporate Services, Capital Regional District

First Nations Relations
a division of the Capital Regional District

CRD standing committees

*meetings are on Wednesdays during the day

The CRD Board has amended its bylaws to create spaces for each Nation to appoint an elected representatives to sit as a First Nation Member on CRD standing committees. It is a flexible model where First Nations can choose to attend only for items that may be of particular interest to them.

Please use this form to designate an elected First Nations member who could be the point of contact for the CRD to send committee agendas and details to in order to seek participation. The CRD would also like to host an orientation for those representatives who will be attending to share information about the process and to answer any questions that may come up.

If you could please list a contact and an alternate and send back to Erich at ekelch@crd.bc.ca

First Nation:

Name of appointed First Nation Member:

Contact email:

Contact phone:

Preferred method of communication: Email

Name of Alternate First Nation Member*:

Contact email:

Contact phone:

Preferred method of communication: Email

The Board remuneration policy recognizes the time commitment of First Nations representatives while serving on these committees and offers the following compensation in line with what is paid to CRD alternate directors, at $110 per committee meeting attended, including expenses. Reimbursement for mileage at $0.50/ kilometre is available for any travel required to attend meetings.

Once appointment is confirmed, and prior to attending the first meeting, Members and Alternates will be provided with forms required by CRD Payroll department to confirm direct deposit information for remuneration.

**Alternate First Nation Members may attend in the absence of the appointed member.*

First Nations Relations
a division of the Capital Regional District

CRD standing committees

*meetings are on Wednesdays during the day

Environmental Service Committee

***meets at 1:30pm on the 3rd Wednesday of each month (monthly)**

- Regional solid waste function
- Environmental Protection, monitoring and compliance
- Community Climate Action and Resource recovery opportunities

First Nations Relations Committee

***meets at 1:30pm on the 4th Wednesday every 3 months (quarterly)**

- Initiate and engage in programs and activities that strengthen relationships between the CRD and First Nations within the region;
- Make recommendations to the Board on CRD's initiatives relating to Reconciliation

Planning and Protective Services Committee

*** meets at 10:00am on the 3rd Wednesday of each month (monthly)**

- Fire Dispatch; Community Health Service; Community planning, roundtable environmental monitoring; Regional Emergency Program Support
- Regional Growth Management;

Regional Parks Committee

***meets at 10:00am on the 4th Wednesday of each month (monthly)**

- Regional parks and trails, including land acquisition, management, and operations

Governance Committee –

***meets at 10:00am on the 1st Wednesday of every other month (bi-monthly)**

- Board, committee and commission governance and meeting procedures
- Corporate administration and intergovernmental relations
- Recommendations to the Board for advocacy to provincial and federal governments

Finance Committee

***meets at 10:00am on the 1st Wednesday of every other month (bi-monthly)**

- Corporate budget, financial monitoring, reporting and forecasting.
- Financial impacts related to strategic Board priorities and initiatives

Transportation Committee

***meets at 10:00am on the 3rd Wednesday of every other month (bi-monthly)**

- Regional transportation matters, receives reports from Traffic Safety Commission
- Advocacy to other levels of government on regional transportation issues
- Advocacy to Victoria Regional Transit Commission

First Nations Relations
a division of the Capital Regional District

CRD standing committees

*meetings are on Wednesdays during the day

Hospitals and Housing Committee

***meets at 1:30pm on the 1st Wednesday of each month (monthly)**

- Makes recommendations to CRD Board, Capital Regional Hospital District and Capital Regional Housing Corporation regarding:
    - Land Banking and Housing; community health planning; implementation of housing affordability models; options for procurement of health care facilities; Real estate matters relating to health care facilities and housing

Electoral Areas Committee

***meets at 11:00am on the 2nd Wednesday each month (monthly)**

- Oversees services in the Electoral areas Juan De Fuca, Salt Spring and Southern Gulf Islands including:
    - Building inspection, Bylaw enforcement, Animal Control, Grants-in-aid, soil deposit and removal, storm water quality, Fire protection, Local emergency management and Local economic development

Making a difference...together

REPORT TO FIRST NATIONS RELATIONS COMMITTEE
MEETING OF WEDNESDAY, MAY 26, 2021

SUBJECT **Intercultural Skills Training for Board Directors**

ISSUE SUMMARY

To support CRD Directors in building positive, respectful and reciprocal working relationships with First Nations participating in CRD Board standing, advisory, select committees and commissions.

BACKGROUND

Number 6 in the First Nations Task Force Report's recommendations directs staff to draft a program of future concrete actions to support the CRD's commitment to Reconciliation. While some of these efforts are coordinated by the First Nations Relations Division, the work of Reconciliation falls to all staff and Directors at the CRD.

In order to move forward in a good way, a common level of understanding regarding Indigenous-settler relations and responsibilities is needed amongst CRD staff and Directors. This is in keeping with the Truth and Reconciliation Commission's calls to Actions which directs municipal governments to provide education "on the history of Aboriginal peoples, including the history and legacy of residential schools, the United Nations Declaration on the Rights of Indigenous Peoples, Treaties and Aboriginal rights, Indigenous law, and Aboriginal–Crown relations. This will require skills-based training in intercultural competency, conflict resolution, human rights, and anti-racism."

The CRD's Statement of Reconciliation recognizes that commitment to reconciliation alone is not enough and that action is needed to show that the CRD is taking measurable steps towards a better relationship with Indigenous peoples. To this end, through the CRD's inclusive governance commitment, First Nations elected representatives have been invited to participate at CRD standing committees, and some advisory committees and commissions.

As has been shown at other local governments and public institutions in recent years, there is a political and reputational risk to elected officials and staff when Indigenous participation is invited into spaces that do not feel welcoming or safe. Specifically, where there has not been a proactive effort to build cultural competency skills or where steps have not been taken to examine and shift institutional practices that perpetuate systemic racism.

The CRD Board's Diversity and Inclusion statement reads: "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."

The First Nations Relations Division has organized some cultural training for the previous Board and will be developing cultural competency training for all CRD staff. Offering intercultural skills training for the CRD Board is one component of supporting and operationalizing the Board's Diversity and Inclusion commitment as well as the commitment to inclusive governance.

Rather than focusing on understanding the history and legacy of Indigenous-Crown relations,

which many Board members may have already received trainings on, the intention will be to focus on intercultural skills training such as understanding cultural protocols, recognizing unconscious biases, how to respectfully approach building reciprocal relationships, what to do when mistakes are made, and how to resolve conflicts. By way of a survey, Board members will be canvassed for input on what skills training would be most helpful.

ALTERNATIVES

Alternative 1
The First Nations Relations Committee recommends to the Capital Regional District Board:
That staff be directed to work with the Board and First Nations representatives to develop and offer Intercultural Skills Training for CRD Directors.

Alternative 2
That this report be referred back to staff for additional information.

IMPLICATIONS

Intergovernmental Implications
Intercultural skills competency of CRD Board Directors will support implementation of inclusive governance commitments. Building understanding of cultural protocols, unconscious biases and approaches to building reciprocal relationships and conflict resolution will help support committee meetings to be welcoming, inclusive spaces for all participants – a necessary precursor to respectful dialogue and decision-making.

Social Implications
Recent high-profile examples where leadership did not fully embrace the need for intercultural awareness training have led to resignations and negative media. For example earlier this year an Indigenous elected councilor in Terrace resigned after twice unsuccessfully trying to persuade Terrace council to participate in cultural awareness training. She claimed systemic and internalized racism as the reason why her colleagues were not able to respect and understand her diverse perspectives.

At the Royal BC Museum, the Indigenous head of the First Nations Department and Repatriation Program resigned in 2020, claiming the institution was home to discrimination, bullying and white privilege. Since then the CEO has stepped down, and both staff and board are receiving unconscious bias training.

In May 2021, an Indigenous member of School District 61's Indigenous Ad Hoc committee stepped down, citing a pattern of systemic racism and calling for public apologies for the 'cynical and flagrant' use of the word reconciliation by the Board and Administration, and asking for a transparent plan to raise the competency of the Board and Administration regarding ongoing colonialism, patriarchy and systemic racism.

There is vulnerability for CRD directors and staff if all levels of the organization are not actively engaged in deepening their intercultural awareness and taking actions towards better incorporating equity, diversity and inclusion across the organization. This training is one small step that helps demonstrate a commitment to ongoing learning and transformation.

Financial Implications
It is estimated that intercultural skills training for Board Directors will cost $10,000 in 2021. Funding is available through the First Nations Relations existing 2021 budget; specifically by redirecting surplus funds from the budget allocated for the First Nations Relations Standing Committee as well as the Forum of All Councils.

Alignment with Board & Corporate Priorities

This training supports the CRD's Statement of Reconciliation, specifically the acknowledgement of the fundamental right of self-determination to Indigenous peoples and the recognition that beyond commitments, action is needed to show that the CRD is taking measurable steps towards a better relationship with Indigenous peoples.

This training also supports Board Priority 3a-1 regarding looking to First Nations for leadership in understanding how to create new regional planning and decision-making systems together on their Traditional Territories. Increased skill in intercultural awareness will facilitate and enhance how we are able to work together.

This training is also in line with the CRD Board's diversity and inclusion statement.

CONCLUSION

Intercultural skills training will support CRD Directors in building positive, respectful and reciprocal working relationships with First Nations participating in CRD Board committees and commissions. This training will help operationalize the Board's Statement of Reconciliation, commitment to inclusive governance with First Nations, and Diversity and Inclusion statement. Deepening understanding of cultural protocols, unconscious biases and approaches to building reciprocal relationships and conflict resolution will support committee meetings to be welcoming, inclusive spaces for all participants – a necessary precursor to respectful dialogue and decision-making with First Nations.

RECOMMENDATION

The First Nations Relations Committee recommends to the Capital Regional District Board:
That staff be directed to work with the Board and First Nations representatives to develop and offer Intercultural Skills Training for CRD Directors.

Submitted by:	Caitlyn Vernon, MES, Manager, First Nations Relations
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

Making a difference...together

REPORT TO FIRST NATIONS RELATIONS COMMITTEE
MEETING OF WEDNESDAY, MAY 26, 2021

SUBJECT **First Nations Cultural Honorarium Policy**

ISSUE SUMMARY

To advance, for information, the CRD's First Nations Honorarium Policy (the "Policy") which establishes consistency in how First Nations are recognized for voluntary work such as blessings, welcomes, and cultural ceremonies, in support of CRD projects and activities.

BACKGROUND

Increasingly, the CRD is looking to engage First Nations in support of CRD projects and activities as a way to strengthen relationships, share information, and operate respectfully.

The Policy seeks to standardize the process by which honoraria are issued, and to provide some guidelines for staff on how to proceed in a consistent and respectful way when requesting the involvement of First Nations in events and projects. The First Nation Honorarium Guidelines (Appendix A) include brief descriptions of activities and approximate cost ranges that would be appropriate when First Nations are engaging in voluntary work at CRD's request. The policy approach outlined within the staff report builds on past corporate practice and seeks to standardize the process for staff across the organization when considering providing honorarium for First Nations (Appendix B).

Key background includes:

- *Year End Report on the Activities of the Special Task Force on First Nations Engagement (2016)* – Direct staff to develop options for increased resourcing and financial implications to accommodate greater participation, engagement and reconciliation.
- *Special Task Force on First Nations Relations: Final Report (2018)* – That the Board pursue a proposed First Nations Remuneration Policy, and direct staff to provide recommendations for consideration by the incoming Board.
- CRD Board Motion, March 2020 – That staff bring back a draft First Nations Remuneration Policy that establishes compensation for specific cultural, technical or subject matter expertise on CRD projects and activities.

The information contained within this staff report is specific to CRD providing honoraria when First Nations share their culture or traditional knowledge in support of events or initiatives. Remuneration for First Nation Members for committee participation is included in the Board Remuneration and Travel Expenses Reimbursement Policy. Additionally, the scope of this policy does not include circumstances where CRD engage First Nations under contract on a fee-for-service basis for specific technical or professional cultural services, such as cultural monitoring, or project-specific liaison positions. Honorarium, by definition, is a payment provided in recognition of voluntary work.

ALTERNATIVES

Alternative 1
The First Nations Relations Committee recommends to the Capital Regional District Board:
That this report be received for information.

Alternative 2
The First Nations Relations Committee recommends to the Capital Regional District Board:
That the report be sent back to staff for additional information.

IMPLICATIONS

Intergovernmental Implications
Appropriately compensating First Nations' elders, knowledge keepers or cultural leaders for their contributions in support of CRD activities can be difficult for staff to navigate without appropriate guidance. The goal of this policy is to help build an understanding across the CRD about when, how and why First Nations could be engaged in projects and activities and what an appropriate range of honoraria may be. Further, this type of approach to more effectively support collaboration between the CRD and First Nations demonstrates the CRD understands the importance of creating space for Indigenous forms of knowing and doing. This will be especially important should the CRD continue to move in the direction of more inclusive governance and collaborative decision-making.

Financial Implications
Generally, the resources needed to support cultural honoraria are drawn from available project funds. It is not expected there will be any consequential financial impacts resulting from this policy as events where honoraria are paid are relatively infrequent. In addition, the costs are minor and can be contained within available project funds.

As a part of establishing a baseline to support future project planning and budget development, the First Nations Relations Division will be working to coordinate First Nations involvement in CRD projects so the costs can be tracked. This information though Q3 and Q4 of 2021 will be used to get a better understanding across the CRD of which divisions make most frequent use of First Nations where honoraria is used. This data will help to inform budget planning going forward should minor adjustments be necessary.

Service Delivery Implications
Though the primary function of this policy is to support greater consistency across the CRD when looking to engage First Nations in various projects and initiatives, the policy, along with support provided by the First Nations Relations Division, will also create more opportunity to discuss where, when and how First Nations' culture can be incorporated into CRD activities.

Alignment with Board & Corporate Priorities
This aligns with the Board priority of taking measurable steps toward developing respectful government-to-government relationships and partnerships with First Nations to foster shared prosperity for all.

Alignment with Existing Plans & Strategies
This work aligns with the CRD's Task Force Report on First Nations Relations and complements

the CRD's ability to engage with First Nations on all relevant plans and strategies.

CONCLUSION

The First Nations Honorarium Policy provides guidance to staff on the process for paying honoraria to First Nations when sharing traditional knowledge or participating in cultural activities. It builds on work the First Nations Relations Division has been initiating over the last number of years and rolls it out across the CRD in a consistent and effective way, with a standardized practice that will enhance financial tracking when honoraria are paid. The key outcomes from this type of approach include greater clarity for CRD staff and First Nations as to how First Nations can be recognized for their voluntary contributions to CRD projects and events as well as enhanced CRD staff competency when looking to invite First Nations into ceremonial or cultural work.

RECOMMENDATION

The First Nations Relations Committee recommends to the Capital Regional District Board:
That this report be received for information.

Submitted by:	Caitlyn Vernon, MES, Manager, First Nations Relations
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: First Nations Honoraria Guidelines
Appendix B: First Nations Honorarium Policy

Appendix A
FIRST NATIONS HONORARIA GUIDELINES

This chart includes definitions of various activities and typical remuneration ranges for First Nations engagement. Please note, the presented ranges are based on previous engagements and feedback from First Nation community liaisons. First Nations may request specific amounts that are outside of the presented ranges.

Title / Term / Role	Description	Amount
sə̓lxʷeyn/ SELWAN (*sull-whane*), In Lekwungen and SENĆOŦEN means "Elders."	The title of sə̓lxʷeyn/SELWAN is bestowed upon individuals who demonstrate character, knowledge of traditional ways, generosity of spirit and connection to community. For non-ceremonial work, but nonetheless important roles, it is customary that First Nations honour the Elders and knowledge keepers who attend and participate in a meeting, and receive an honorarium out of respect for the extensive knowledge they bring to the table.	$150-$250 per attendance or as agreed in advance.
Knowledge Keepers	Term used to refer to someone in the community who has Traditional knowledge in a range of areas such as native plants, spiritual matters, protocol or language speakers. They are often asked to provide feedback for a Nation on a number of projects.	$150-$250 per attendance or $50/hr up to a maximum of 6 hours
Spiritual Ceremony	The participants in a ceremony for the ancestors varies according to the activity. It is tradition in First Nations communities, to provide members who offer an important spiritual service be given a 'handshake' for their work. The contribution varies and is typically discussed prior to the event with the spiritual elder with whom we are working. The amount typically reflects the person's ability to pay, and the time contribution of the service provider. It is less about the amount of money, and more about respecting their knowledge, their commitment, and their role in the community. In addition to a handshake, a blanket is typically offered in these ceremonies. The blanket is a symbolic gesture with no expectation that it be expensive. The giving of a blanket conveys the message of wrapping our friend in warmth.	Range of Contribution: $100 - $250 Blanket: $10-$50
Territorial Welcome, Acknowledgement or Blessing	These terms are often used to refer to how a meeting or event is opened by First Nations. Each term can mean different things to different people. When we are asking for First Nations involvement in the opening of an event or meeting we ask for a territorial acknowledgment as it should be up to the Nation whether they want to do a welcome or a blessing. It may also be appropriate to	$150-$250

	provide a small token gift if we are asking Chief or Council to be a part of this work or when working with Elders.	
Burning Ceremonies	For larger Burning Ceremonies, which involve re-interment of ancient remains uncovered during excavation, the event is more elaborate (typically beginning at 5 am with the making of food for the ancestors to be burned in ceremony and ending late in the evening with a community feast for the living). There are several roles involved in a burning ceremony: *The Speaker* – Usually an elder, and someone who speaks the first language in order to communicate between worlds. They will be in service for the duration of the ceremony. *Burners* – These roles are held by spiritual elders. They work the entire day of the ceremony and many days in advance preparing the clothing to be burned and organizing the roles. *Cooks for the Ancestors* - These members are specially trained to cook in the traditional ways, and in a state of reverence as they prepare the meals that will eventually be burned in the ceremony. They begin in the early hours of the morning and finish just before the burning. *Feast Cooks* - prepare the meal for the living, after the ceremony. They do the shopping for the food in advance, prepare, serve during the feast and clean up. *Helpers* –assist the feast cooks. It is typical that the spiritual elder will ask the CRD to provide helpers to participate in the work. Regardless of whether they are paid employees, they must be paid, like everyone else, with a handshake. *Woodcutter* –is a person assigned to the task of chopping the wood, stacking it and building the table (essentially a pyre) on which the food is burned for the ancestors. *Gravedigger* – is brought into the ceremony if there is re-interment. The gravedigger is a role that is handed down within a specific family and is highly honoured. *Honoured Guests* – usually the Chiefs of local Nations are invited to attend and honoured with a contribution for attending.	Range of Contribution $100-$500 per person. Total Cost of the event can range from $8k to $15k depending on the number of people involved. $350 / day has been identified as the amount for a gravedigger's responsibilities
Traditional Welcome from Chief or Council	For events where there are visitors to the region, it is common to invite the Chief of the Traditional Territory on which the event is held, to provide a welcome. Sometimes this is considered as part of the role of the Chief and sometimes this welcome comes with compensation or a thoughtful gift.	$150-$250

Dancers or Drummers	Sometimes to open events a request is made to start with a performance by Dancers or Drummers to start the proceedings off in a good way.	Up to $1,500 depending on the number of dancers.
Speaker	This a role performed by a speaker of the Indigenous language who facilitates the proceedings, usually for spiritual or cultural protocol related to an event.	$150-$400
Witnessing	This is a cultural protocol where people are asked to observe an event to share with others afterwards about what took place. As a symbolic way to thank them, people place quarters (representing the cost of what a blanket used to be) in their hands or pouches. Staff in attendance would be encouraged to have quarters on hand.	Provide quarters (typically two) to those witnessing.

Making a difference...together

CAPITAL REGIONAL DISTRICT

CORPORATE POLICY

Policy Type	Administrative		
Section			
Title	FIRST NATIONS HONORARIUM POLICY		
Adopted Date		Policy Number	ADM84
Last Amended			
Policy Owner	First Nations Relations Division		

1. POLICY:

This policy provides honorarium protocol for CRD staff when engaging First Nation individuals, who are not employees of the CRD, for cultural events and traditional knowledge sharing. For information related to remuneration for committee membership by First Nations, refer to the Board Remuneration and Travel Expense Reimbursement policy.

2. PURPOSE:

This policy supports the CRD's commitment to Reconciliation and its efforts to follow the Truth and Reconciliation Commission's calls to action and the United Nations Declaration on the Rights of Indigenous peoples. In order to build relationships and include Indigenous voices in its process the CRD may ask First Nation members to be a part of activities and events related to CRD operations. It is customary and appropriate to demonstrate respect to those who are asked for their time by offering an honorarium. An organization-wide policy that guides staff is needed to support the CRD's ongoing relationship building efforts with First Nations.

3. SCOPE:

The policy applies to CRD, CRHC and CRHD staff when engaging First Nations or their appointees (who are not employees of the CRD) where an honorarium is appropriate such as blessings, welcomes, presentations, cultural work or CRD engagement. This list is not exhaustive. This policy does not apply to a situation where First Nations are engaged in a contract with the CRD or are representatives on Board Committees or commissions.

4. DEFINITIONS

HONORARIUM: An expression of recognition in the form of remuneration to a member of a First Nation providing a voluntary service to the CRD. It is intended as a gesture of respect and gratitude to show CRD's appreciation for the work. It is typically a nominal payment made on a special or non-routine basis to an individual who is not an employee of the respective First Nation. An honorarium is not a fee for service arrangement.

CULTURAL WORK: Works or activities performed by First Nations that is connected to Indigenous culture or protocol.

NON-CASH GIFTS: An expression of recognition and thanks to an Elder or knowledge keeper. First Nations cultural protocol often includes gift giving as a way to show respect. Example of non-cash gifts would include scarves, coffee, tea, tobacco, glassware, and plant seeds. Please note that gift cards are

considered near-cash gifts and should not be used. Non-cash gifts provided to an individual should not exceed $500 in fair market value in a calendar year. It is the responsibility of First Nations Relations staff to track non-cash gifts provided and notify payroll in the event that non-cash gifts exceed this dollar threshold.

4. PROCEDURE:

1. Connect with First Nations Relations staff regarding outreach activities to local Nations to coordinate outreach efforts across the organization.

2. Receive direction from First Nations contact on who to work with and what is appropriate for honorarium. In some cases, this work has already been done by First Nations Relations Division staff. A guideline for honorarium levels will be maintained by the First Nations Relations Division, however expectations can differ between communities and depending on the work undertaken.

3. It is the responsibility of First Nations Relations staff to track non-employee honoraria paid to First Nations, in accordance with subsections (a) and (b):

> (a) If honorarium is not expected to exceed $500 the payment can be made through the cheque requisition process managed by Accounts Payable;
>
> (b) If the total honoraria to a First Nations individual is expected to exceed $500 in the calendar year, the CRD is required to issue a T4A to that individual. In this case, First Nations Relations Division staff will contact Payroll to ensure that honoraria is paid through payroll and tax implications are reviewed.

4. If the participant is eligible for travel compensation, the CRD will only provide mileage compensation at a rate that is consistent with established CRD mileage reimbursement rates.

5. If this is a new relationship with an Elder, or if the Elder is giving a blessing or a welcome at a public event, it is customary to also give a non-cash gift to honour that person for their time and for the words they had to share. First Nations Relations staff will offer advice on appropriate non-cash gifts.

6. Staff shall submit approved cheque requisition forms to Accounts Payables at least 2 weeks in advance to ensure a cheque is available at the time of the work. This is especially important for cultural work from Elders where it is respectful protocol to give the honorarium at the time of the event.

7. Attendance by Elders or other community leaders can occur unplanned. It is encouraged that CRD staff be prepared to honour their attendance. The First Nations Relations Division is able to offer support in the way of petty cash or non-cash gifts on hand. If petty cash is used, staff must ensure all Corporate Guidelines for petty cash are followed.

6. SCHEDULE:

A. REQUEST FOR HONORARIUM PAYMENT

7. AMENDMENT(S):

Adoption Date	**Description:**
None	*(Brief description of adoption conditions – ELT, Board, CAO)*

8. REVIEW(S)

2022	**Description: To review if amounts and protocols are still appropriate**

9. RELATED POLICY, PROCEDURE OR GUIDELINE:

SCHEDULE A
REQUEST FOR HONORARIUM PAYMENT (*For Finance*)

Event Name: _____

Date of Event: _____

***AP must receive this form completed and approved 2 weeks prior to the event date.**

Describe the event, including rational for Honorarium amount:

_____
_____
_____
_____

Honorarium Recipient Name:
_____

Address: _____

_____

_____

Honorarium amount: _____ **GL:**_____ **Cost Center:**_____

Mileage amount: _____ **GL:**_____ **Cost Center:**_____

Total: _____

***If total amount is $500 or greater in a calendar year, the recipient must complete both a Provincial and Federal TD1 form. Please attach and forward the completed TD1 forms with this form to the Payroll Department for processing. Off-cycle pay runs will not be made for these requests – see Payroll Calendar on CRD Central for payroll pay dates.**

SIN: _____ **(only complete SIN if total honorarium is $500 or greater)**

Prepared by (staff): _____

Approved by (Manager): _____

Making a difference...together

REPORT TO HOSPITALS AND HOUSING COMMITTEE
MEETING OF WEDNESDAY, JUNE 02, 2021

SUBJECT **Union of BC Municipalities Strengthening Communities' Services Grant Application**

ISSUE SUMMARY

A Capital Regional District (CRD) Board resolution is required to support a CRD grant application to the Union of BC Municipalities (UBCM) *Strengthening Communities' Services Program*.

BACKGROUND

On February 24, 2021, the Union of British Columbia Municipalities introduced the Strengthening Communities' Services Program, a component of the Canada-BC Safe Restart Agreement. The program aims to address unsheltered homelessness that has been exacerbated by COVID-19 and related community impacts.

Eligible applicants include local governments (municipalities, regional districts and the Islands Trust) and Treaty First Nations in BC.

The intent of the Strengthening Communities' Services Program is to assist eligible applicants with:

- Improved health and safety of unsheltered homeless people living in public or private spaces, including reduced risk of COVID-19 or other disease transmission.
- Reduced community concerns about public health and safety in neighbourhoods where unsheltered homeless populations are seeking temporary shelter and services.
- Improved coordination among eligible applicants and health/social service providers, Indigenous organizations and others working on housing, homelessness and service provision.
- Increased capacity of eligible applicants to work with homeless persons and Indigenous organizations towards culturally safe and trauma-informed responses.

In March 2021, CRD staff responsible for Salt Spring Island (SSI) services identified the need for additional bylaw and public information services to help address ongoing issues related to unlawful activities in community parks in Ganges Village, specifically Centennial Park, most of which are related to the ongoing impacts of COVID-19 pandemic restrictions and the lack of options to address the needs of people experiencing homelessness on Salt Spring Island.

At the same time, staff at Salt Spring Island Community Services (SSICS) approached CRD Housing Division staff requesting the CRD consider applying for a grant from the UBCM program to help support additional services for people experiencing homelessness and contributing to some of the issues in the Ganges Village area and Centennial Park. CRD staff proposed and SSICS staff have agreed to enter into a contract to deliver services that align with the grant program requirements.

Consultations between Regional Housing and SSI Administration staff have identified the opportunity to apply to the UBCM grant program to potentially support both the CRD and SSICS proposed services and an application for funding, presented in Appendix A, was submitted to UBCM in April 2021. One of the requirements of UBCM is for regional councils to approve resolutions to receive funding from the grant program.

ALTERNATIVES

Alternative 1
The Hospitals and Housing Committee recommends to the Capital Regional District (CRD) Board: That the CRD Board authorize staff to prepare and submit an application, negotiate and accept the terms, and receive funds through the Union of BC Municipalities *Strengthening Communities' Services Program* to support the activities outlined in the proposal presented in Appendix A.

Alternative 2
That the UBCM Strengthening Communities' Services Grant Application report be referred back to staff for additional information based on Hospitals and Housing Committee direction.

IMPLICATIONS

Social Implications
The social and employment development services proposed by SSICS will help address the need people experiencing homelessness have for shelter, material support and meaningful occupation in the community. The additional bylaw services and the public information campaign will target interventions that will create a more peaceful and orderly environment in public spaces, especially in the Ganges Village and Centennial Park areas of SSI. This will reduce conflict of use issues among different park users and contribute to increased use of these spaces by all people living on the island.

Financial Implications
CRD costs related to providing additional time-limited bylaw services, conducting a public information campaign and administering the contract with SSICS are eligible for funding under the UBCM Program, hence these costs will be covered on a cost recovery basis through the grant funding.

Service Delivery Implications
The Regional Housing Division has a mandate as well as the capacity to provide overall management of the grant.

Alignment with Existing Plans & Strategies
The Regional Housing Affordability Strategy supports the CRD engaging with community partners in efforts to address issues related to the impacts of homelessness in the region.

CONCLUSION

There is a need to take action to address the social and economic needs of vulnerable populations who are unsheltered on SSI while also providing short-term increases in bylaw services in order to ensure public spaces, especially those in the Ganges Village area, remain safe and inclusive spaces for all those wishing to use these spaces during high-use months of the year. The introduction of the UBCM Strengthening Communities' Services Grant Program provides a unique

opportunity for the CRD to access funding to support augmented service levels, but also social and employment support services to be provided by the SSICS. Applying for and receiving funding through this grant program to meet short-term needs associated with the persistence of the COVID-19 pandemic will not create any expectation or requirement that the CRD sustain these services or its contract with SSICS beyond March 2022.

RECOMMENDATION

The Hospitals and Housing Committee recommends to the Capital Regional District (CRD) Board:
That the CRD Board authorize staff to prepare and submit an application, negotiate and accept the terms, and receive funds through the Union of BC Municipalities *Strengthening Communities' Services Program* to support the activities outlined in the proposal presented in Appendix A.

Submitted by:	Don Elliott, MUP, Senior Manager, Regional Housing
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: UBCM Strengthening Communities Grant Application

Strengthening Communities' Services

2021 Application Form

Please complete and return the application form and all required attachments. All questions are required to be answered by typing directly in this form. If you have any questions, contact lgps@ubcm.ca or (250) 356-0930.

SECTION 1: Applicant Information	**AP-** *(for administrative use only)*
Local Government or Treaty First Nation: Capital Regional District	Complete Mailing Address: 625 Fisgard St., PO Box 1000, Victoria, BC V8W 2S6
Contact Person: John Reilly	Position: Manager, Housing Initiatives and Programs
Phone: 250 360 3081	E-mail: jreilly@crd.bc.ca

*Contact person must be an authorized representative of the applicant.

SECTION 2: For Regional Projects Only

1. **Identification of Partnering Applicants.** For all regional projects, please list all of the partnering eligible applicants included in this application. Refer to Section 4 in the Program & Application Guide for eligibility.

   n/a

2. **Rationale for Regional Projects.** Please provide a rationale for submitting a regional application and describe how this approach will support cost-efficiencies in the total grant request.

The Salt Spring Island Electoral Area does not have a municipal government body and relies on the CRD for municipal service delivery within this jurisdiction. Currently the CRD provides building inspection and bylaw services as well as parks, recreation and other services appropriate within an electoral area. Local community services often provide services that complement municipal sevices, and in the Capital Regional District such services can augment the efficacy of its own services. In this way, the CRD frequently works in partnership with local service providers in assuring the health and well being of the residents of the communities on Salt Spring Island. The CRD has established, through the Regional Housing Affordability Strategy, a legitimate role in supporting efforts to address issues related to homelessness in communites thorughout the region. This project proposes incremental, short-term additions to CRD services as well as a partnership between Salt Spring Island Community Services and the CRD to strengthen the capacity of services unique to Salt Spring Island in their efforts to address the needs of vulnerable populations during the COVID pandemic.

SECTION 3: Project Information

3. Project Information

A. Project Title: Salt Spring Island Homelessness COVID Response

B. Proposed start and end dates. Start: April 1, 2021 End: March 31, 2022

4. Funding Request. Please refer to Section 3 in the Program & Application Guide for the Funding Guidelines.

A. Total proposed project budget: $325,570.00

B. Total proposed grant request: $308,520.00

C. If the proposed grant request exceeds the Funding Guideline, please provide a rationale for the increased request: n/a

D. Have you applied for, or received, funding for this project from any other sources? No.

5. Project Summary. Provide a summary of your project in 150 words or less.

The Salt Spring Island Homelessness COVID Response project will augment social, recreational and bylaw services capacities in order to address the health and social wellbeing of unsheltered people to address public safety and order maintenance issues in the community related to the COVID pandemic. Overall project management and administration will be carried out by the CRD through its SSI Administration and Regional Housing Divisions and social service and outreach to people experiencing homelessness will be carried out through a contract between the CRD and Salt Spring Island Community Services. The CRD will facilitate a term limited increase in bylaw services and will coordinate information and public education within the community. Sheltering services, outreach support including case management, connections with health supports, liaison with business and RCMP, and basic needs such as food and hygiene as well as liaison among key partners will be carried out by SSICS staff.

SECTION 4: Detailed Project Information

6. Local Context & Evidence:

A. Describe the extent of unsheltered homeless populations in your community and existing responses (including local or regional strategies, plans or projects):

Recent homeless counts have identified Salt Spring Island as having the highest rate of homeless per population in BC. The homeless count on Salt Spring is in the same range as much larger communities (eg. Campbell River, Port Alberni, Nelson, Terrace, Penticton) This is a signifigant challenge and burden for a small community with limited shelter and affordable housing options, health services, public safety and supports for marginalized populations. The geographic nature of this island community means that it is "remote" in many contexts, in that there are few efficient ways to benefit from regionalized or nearby resources.

Salt Spring Island has historically had a regular homeless population of local and transient people. The community culture has been accepting and supportive of homeless camps and people. As numbers increased and community tolerance of camps declined a cold weather shelter was developed by the United Church in 2004. By 2007 the shelter was being used by 10+ individuals per night and mental health and substance use-related incidents were commonplace. SSI Community Services took on the shelter service and initiated the first focussed homelessness assessment and plan.

In November 2016 the Salt Spring Plan to End Homelessness was developed along with the establishment of the Salt Spring Housing First Coalition. The plan included an assessment of shelter, housing and support needs. The Coalition was formed to strengthen the coordination of planning and service delivery, and included the formation of a Housing Supports Committee to provide a coordinated access process for the Health Authority and two main local saffordable housing providers. Funding has been securing from the BC Rural and Remote division of the federal Reaching Home (formerly Homeless Partnering Strategy) annually since 2015 to provide the foundation of the SSI Community Services Housing First team. The housing first team currently has an active caseload of approximately 100 people who are homeless, in extremely sub-standard housing, or are at risk of homelessnees.

B. Provide a summary of evidence of unsheltered homeless populations in your community. This may be derived from existing strategies, plans or projects or from recent homeless population counts or housing needs reports. *Copies of documents should not be submitted with the application.*

The 2007 Salt Spring Homeless Count, coordinated by SSI Community Services, identified "at least 32 homeless individuals and an additional 25-50 individuals at imminent risk of homelessness, or living in substantially sub-standard shelter".

The 2008 three-part comprehensive Salt Spring Housing Study funded by Islands Trust, CRD, and the Real Estate Foundation of BC consistently identified people who lack a home, or are marginally housed, as the most vulnerable and the highest priority. Stage One of the report, the Housing Needs Assessment, was completed in 2009. This broadly consultative assessment identified a number of affordable housing gaps and key issues and concluded that "the most urgent needs are for the homeless and those at risk of homelessness".

In 2011 a study by City Spaces Consulting recommended that a 15-bed year round shelter be established to address the chronic and persistent emergency housing needs on Salt Spring Island.

Between the years of 2007 and 2021 there was a steady evolution of the In From the Cold Emergency Shelter from a 15-bed Extreme Weather Response facility to a 30-bed Year Round 24/7 facility that has operated at full capacity (90%+) every step of the way.

In 2016 Salt Spring joined the national Point in Time Count process and conducted a count with surveys following standard PIT Count protocols. The total 2016 count was 83 homeless individuals, of which 55 were unsheltered.

In 2018 Salt Spring joined the national process again, with an added step of confirming the process followed the BC Housing PIT Count protocols as well. The total 2018 count was 115 homeless individuals, of which 82 were unsheltered. It was commonly thought that a factor in the 38 % increase from 2016 to 2018 was the deactivation of Victoria's 'tent city" t in 2017 that directed some homeless to supported housing while others elected to move to neighboring communities.

In 2020 the proposed Point in Time count on Salt Spring Island was cancelled due to the COVID pandemic. The best estimates of service providers based on shelter, food bank and housing outreach activity are that numbers are at least as high a 2018, and mostly likely a bit higher. The SSICS Housing First program has an average active case count in 2020 of approximately 100 people.

The 2018 Salt Spring homeless count compares in the following way with the greater regional and provincial context: The homeless rate of 11 per 1,000 is the highest known rate of any community in the province, with Nelson being second at 6 per 1,000. The BC rate is 2 per 1,000 province-wide. The percentage of Salt Spring homeless that are

unsheltered at 71% is considerably higher than the BC average of 37%, as well as being higher than urban centres with more shelter resources (Victoria 35% and Vancouver 29%).

C. Provide a summary of concerns about public health and safety in relation to unsheltered homeless populations that have been identified in your community:

Community parks and outdoor areas around local businesses are intended to be used for community recreation, public gatherings and social interaction. With the emergence of the pandemic and the associated restrictions, the CRD has have seen an increase in disorderly conduct, assaults, open liquor consumption, drug use, garbage, graffiti, vandalism and the illegal sale of drugs and alcohol in community parks and in public areas around local businesses. These illegal activities can be intimidating and discourage people from visiting the park and shopping at surrounding businesses; and parks staff have reported workplace incidents related to threats and aggressive behaviour by park users. The CRD has a legal duty to conduct incident investigation in accordance Workers Compensation Act, Occupational Health and Safety and related policies.

Meetings have been held with local businesses, Harbour Authority, United Church, the RCMP, Bylaw enforcement and CRD parks staff expressing concerns with the conduct in our community parks. Despite consultation and increased enforcement to address concerns reported by park visitors, complaints from surrounding businesses and neighbours continue to increase.

The CRD Salt Spring Island Administrative office has been vandalized on a number of occasions with windows being smashed, spitting on the windows and door entrance, carving hate symbols into the windows and putting dog feces through the mail slot. The vandalism stopped once cameras were installed and video surveillance signs were posted.

In December 2019 an alternative approval process to fund a community safety service which could have provided additional funding for RCMP, neighbourhood watch, security patrols and other safety supports was proposed to the community. The proposal was voted down by residents despite increasing safety concerns in the down town core.

The Downtown community parks have become a place that attracts or enables offending behavior due to informal management practices and little surveillance. Public trust and perception in the parks being a safe place is being undermined by the lack of control and not addressing the antisocial behavior. This has been a very active topic for community discussion and commentary, including planning meetings, social media discussion, complaints to RCMP and others, and general community discussion.

Other concerns have been raised about the health and safety of the unsheltered people themselves, with a particular focus on the public park and residential areas in the main community village of Ganges. The most commonly expressed concerns include:

1. Lack of access to potable water and hygiene

2. Lack of access to washroom and indoor facilities (COVID pandemic has prompted the closure of washroom access at restaurants, indoor dining, library etc.)

3. General feeling of lack of safety (expressed both by general community, local businesses and unsheltered populations)

4. Increasing negative interactions between residents and unsheltered persons

5. Lack of overnight shelter spaces and space for homeless to spend time during the day

6. Lack of positive activities in which unsheltered people cann engage

7. Untreated individuals with mental health or substance use issues displaying aggressive and antisocial behaviors in public

8. An emerging need for harm reduction and overdose prevention resources

9. Limitations of RCMP and bylaw services staff, both in number of staff available and limit to actions taken in response to acting out behavior

10. Public use of alcohol and drugs, including drug sales in public areas

11. Garbage accumulation including general litter and human feces left in public areas, beaches, homeless camp areas

12. Noise in residential areas created by unsheltered people using parks for sheltering purposes

13. Lack of control of pets by unsheltered individuals (primarily unleashed large dogs)

14. Damage to private vehicles due to unauthorized use for sheltering purposes by

15. Limited park and public spaces being monopolized or dominated by unsheltered individuals

16. Insufficient Bylaw services to support order maintenance in public areas

17. Assaults on, and aggression towards By Law officers by park users

18. Safety concerns during stormy weather for people sheltering on derelict boats

7. Impact of COVID-19. Based on the local context identified in Question 6, provide a description of how these issues have been exacerbated by COVID-19.

The Covid pandemic has impacted the homeless population in many ways including:

1. Shelter capacity has decreased from 30 to a maximum of 17 people

2. Indoor spaces in the community of all sorts have been limited from public to service organizations to restaurants and gathering places. This has includes an abrupt decrease in access to washrooms and potable water.

3. There has been an increase in the presence and visibility of unsheltered people in public places as their options of where to gather have narrowed, and the general public are not as frequent in these areas.

4. In addition to shelter challenges, other affordable permanent and transitional housing options have become more limited. Salt Spring is losing affordable market rent units due to the sale of dwellings that have provided secondary or garden suites as affordable rental units

5. Covid pandemic protocols and shifted priorities have left the local health system with far less capacity to provide timely supports and service to marginalized and homeless people. this includes emergency response, public health, and mental health and addictions services. Some services which were provided from off-island have been restricted by travel and social distancing protocols.

6. Many homeless people have challenges in following Covid-related health directives, due to living conditions, mental health disabilities, and/or poverty. This includes social distancing, hygiene, and reducing risk of disease transmission.

7. The Covid pandemic, and its effect on tourism, has resulted in a depressed labour market where there is far less casual and seasonal work, and marginalized people with employment barriers are effectively shut out of employment opportunities.

8. The Covid pandemic has had a profound effect on the levels of stress, mental wellness and resiliency of the entire population. This heightened tension and lowered capacity has contributed to added volatility to the typically challenging relationship bewtween homeless

people and the community at large. Problematic substance use is noticeably higher across most populations, which is always hard on community harmony.

8. Proposed Activities. Refer to Sections 4 to 6 of the Program & Application Guide for funding requirements and eligibility and provide the following information:

A. Describe the specific activities you plan to undertake:

A full accounting of projected costs requiring UBCM funding can be found in the attached budget document. Additional cost detail and other funding received and in-kind services to support project operations are summarized in Appendix 2.

CONTRACTED SERVICES

1. Improve health and safety of unsheltered homeless people living in public or private spaces, including reducing the risk of COVID-19 or other disease transmission

Actions: Temporarily increase emergency shelter space. New shelter spaces will be created by renting 3 additional rooms at the Seabreeze Inne. This will be in addition to the 8 rooms funded by BC Housing and supported by the SSICS Housing First team. This will bring the number of emergency shelter beds in the community to 29. This is only one less than the 30 that were in place prior to the Covid pandemic and will be in place once pandemic protocols regarding social distancing are relaxed. Along with the additional beds will be temporary incremental increases in support to the people sheltering in Seabreeze Inn rooms including case management, food services, life skills support and connections to other support services through SSICS housing First and community organizations (eg. Public Health). The SSICS Housing First team currently has one primary staff person assigned to support the Seabreeze rooms, and this will be increased as much as 50% to cover the increased people and needs. Additional detail related to planned shelter operations are provided in Appendix 1.

2. Improve communication, coordination and relationships between unsheltered people, service providers, and community at large to maximize the range and effectiveness of support services and health services

Actions: The Housing First Worker as well as two Peer Support Workers will provide immediate outreach to people sheltering out of doors. These individuals will assess the needs of unsheltered people and help facilitate their access to food services, hygiene services as well as other health and social supports. In order to provide a base for these additional operations and to provide a place for unshltered people to make contact with other services, SSICS will establish an outreach office and increase the presence of the SSICS Housing First team in Ganges Village. A site will be established in the SSICS Hereford Avenue offices for the period of the emergency order and following its removal to make all of the SSICS Housing First activities more accessible to the population of unsheltered people. This short term increase in accessibility will provide more timely and responsive service that will address some of the immediate needs of unsheltered people seeking help in a location where they have been congreating during the pandemic. The Hereford outreach site will also provide space and opportunity for unsheltered people to connect including SSICS services, Public Health (basic health and harm reduction), Mental Health and Substance Use, RCMP, faith groups, Copper Kettle, IWAV, business owners etc.

CRD SERVICES

3. Strengthen the capacity to provide services that better maintain order within the community, particularly during the summer months.

Actions: An incremental, short-term increase in bylaw services staff will provide for additional order mainentance and ability to provide bylaw reponse during hours outside of normal daytime office hours. A recreation technician will work with bylaw and policing services as well as local business and community groups to develop and facilitate an information and public education campaign to provide businesses and residents with information to support them in contacting the proper authorities when facing issues of conflict between business owners, residents and unsheltered populations. This will help direct concerns to authorities with the mandate and jurisdication to appropriately respond to community issues.

B. How will activities provide temporary solutions that address increased urgent and immediate needs related to unsheltered homelessness and not create ongoing long-term financial obligations:

1. Shelter capacity will be increased until COVID pandemic restrictions relax and previous shelter capacity is returned.

2. The increased outreach activity will need to be reviewed and scaled back, as it is activity which is not exclusively linked to Covid-19 pandemic pressures.

3. The public order issues are likely to diminish with colder weather in the fall of 2021 and as restrictions related to the COVID pandemic are lifted later this year. This is expected to reduce the need for additional bylaw services and public information measures.

C. How will the proposed activities meet the intent of the funding program. Refer to Section 1 of the Program & Application Guide:

The project addresses the following Strengthening Communities' Services program priorities:

1. Improved health and safety of unsheltered homeless people living in public or private spaces: Increasing shelter capacity is a primary project activity, and will directly create more safe spaces for people and provide an instant connection with health care supports.

2. Reduced community concerns and providing appropriate service responses related to public health and safety in neighborhoods: The project will reduce the number of unsheltered people, and provide an opportunity to re-direct some of the anti-social behavior and tense public interaction into more positive and pro-social behavior through having more immediate access to Housing First support services. Additional bylaw services and improved information for the public on how to access appropriate bylaw services

3. Improved coordination among service providers: the increased case management staff time, and accessible location in Ganges village will create the opportunity, capacity and incentive for service providers to connect and coordinate their respective functions.

D. How will the proposed activities and costs form part of comprehensive, multi-faceted approach to addressing unsheltered homelessness:

The project activities will contribute to the greater plan for addressing shelter, supports and services for the unsheltered homeless in the following ways:

1. Strengthen the "shelter to housing" continuum by adding shelter beds that are part of the Housing First case management process,

2. Add to, and strengthen the system of supports by adding staff time for coordination, and locating the increased service in an accessible location that will enhance contact and connection among service providers,

3. Increase community engagement by establishing the new accessible location with a focus on connecting unsheltered people with needed health, dental, hygiene and food services.

4. Increase the capacity of bylaw services to respond in a timely way to issues of public disorder and to connect local residents and businesses to services that can appropriately intervene to resolve use conflicts in public areas.

Each of these activities will be well-integrated into the broader community strategy because each component of the project will be led by either Salt Spring Island Community Services (direct services to the homeless) and CRD SSI Administration (bylaw services and public information roles). Throughout the project, SSICS and CRD SSI Administration will work collaboratively to address local community issues as they emerge.

9. Anti-Stigma Lens. Describe how proposed activities will apply an anti-stigma lens and increase public awareness and understanding of causes and responses to homelessness.

1. The use of the Seabreeze Inn will continue to reinforce the positive impact that housing stability has on people's health, self-esteem, motivation and community connection. There is already a marked difference between the greater stability experienced at the Seabreeze site and Emergency Shelter site in terms of problem behaviors, police attendance, and the demeanor of residents. It illustrates that the more stable and "normal" the housing, the more stable and community-minded the residents will be.

2. Having a Housing First team present in Ganges will broaden the scope of interventions available to unsheltered people experiencing homelessness in the heart of the community, and has the potential to reduce the reliance on law enforcement interventions where social support may be better able to address individual needs.

10. Partnerships & Engagement. Please indicate how you intend to engage or collaborate with the following and what specific role they will play in the proposed activities. If possible, please identify the specific agencies or organizations you intend to work with.

A. Indigenous leadership, organizations and communities, including engagement during the development of the application package:

There is no single concentrated indigenous population or community on Salt Spring Island. There is consistent, but low number of indigenous people that are unsheltered and accessing services such as emergency shelter and food. There is specific indigenous organization or group that has been active in homlessess planning or action.

The CRD First Nations Relations office will be informed of this project and, if needed, will help the partners in the initiative engage with local First Nations.

In addition, Salt Spring Island Community Services has a long standing collaborative relationship with the Stqeeye' Learning Society, a local leadership and coordinating group, to provide mutual support when serving indigenous people. This has primarily had a youth focus, with elder connections and land-based healing activities at the Xwaaqw'um traditional village site. Over the past two years there has been a connection with the SSICS Community Counsellor for the same purposes with marginalized adults. The Stqeeye' Learning Society has been informed of this initiative, as is the case with other new programming directions for marginalized populations.

B. Distinct needs-serving organizations, public health, health authorities, non-profit organizations, other local governments, police, bylaw enforcement):

The project will be supported through the CRD's operation of the Salt Spring COVID Task Force, which will act as a communication and advisory hub for the project. The Task Force includes representatives from all the identified organizations listed above.

In addition, the Salt Spring Homelessness Coalition will provide an additional locus for connections among other various needs-serving organizations.

Each organization has been highly supportive of this proposal going forward, and includes: RCMP, Public Health, VIHA Mental Health and Substance Use team, Copper Kettle, Islanders Working against Violence, Harvest Food Programs, In From The Cold Shelter, Inter-ministerial Group, CRD Director, Island Trust Trustees, and the Salt Spring Health Advancement Network. The project and its activities will be highly involved with Public Health and MHSU team. Both the RCMP and Public Health have expressed an interest in working closely with the project to provide better harm reduction and overdose prevention support for the marginalized populations.

C. Other:

11. People with Lived Experience. Indicate how you intend to communicate and engage with unsheltered homeless populations to include perspectives of people with lived experience.

The Peer Support Workers will play an important role in sustaining effective helping relationships with people sheltering outdoors. Salt Spring Island Community Services has a long-standing connection in one way or another with virtually all of the people experiencing homelessness in the community, whether they be long term community residents or transient newcomers. The SSICS main site, and cluster of services (shelter, food bank and meal programs, Housing First services including case management, rent subsidies and emergecy support, counselling, basics needs services including laundry, shower and internet, and mental health peer support drop in) make it a bustling "one-stop" location for the homeless and other marginalized individuals. There has always been a priority placed on maintaining positive relationships, which had included a basic process of listening and responding to the concerns and perspectives of the people served. Many services have been developed on this basis, such as the dental program, shower and laundry service, meal programs, etc. During the Covid pandemic SSICS has hosted numerous outdoor gatherings with unsheltered groups in "the garden" to problem solve pressing issues such as safety, community stigma, encampments, vehicle problems, and shelter pressures. This format has been used to help shape the development of a healthy culture and peer support system at the Seabreeze Inne. We anticipate that this level of engagement will be elevated even more through this project as we are able to engage leaders within the homeless group to take up peer support and/or work experience positions in the casual labour service.

12. Outcomes & Performance Measures. Please describe the proposed outcomes and performance measures.

A. How will the outcomes address the challenges identified in Questions 6 and 7:

The outcomes of this project will result in an increase in the safe sheltering for currently unsheltered individuals, provide immediate supports and connections for these individuals to access health care and disease transmission prevention (including ovedose prevention), provide optional places and spaces and activities for homeless individuals currently having an intimidating presence in community public spaces, and bring a refreshing positive vitality to a small beleagured collection of service providers who have dimishing time and energy to collaborate.

Local residents and businesses will have improved information on how to best respond and who to contact to help with issues of conflict and more effective order maintenance will be possible with additional bylaw services staff. These staff will endeavour to work with people with lived experience to help support a problem solving approach that succeeds in bringing a greater order in key public areas of SSI.

B. What performance measures will be used to assess these outcomes:

1. Number of additional people sheltered and length of stay in shelter beds.

2. Number of additional people engaged with Housing First case management activities and other associated supports, and the level and quality of these cases. This is readily tracked through the case managemnt system use by the Housing First team, which includes measures of individual outcomes and satisfaction.

3. Work is currently being done with the Salt Spring Homelessness Coalition to better identify goals and measures to track succesful collaboration and system effectiveness. This project will be in a good position to be a "guinea pig" to track these performance measures once they are established.

4. Number of requests for service from local bylaw services and a reduction in the incidence of disorderly conduct in the community.

5. Inreased awareness among residents and businesses with respect to how to access services designed to address disorder issues in the community.

C. Demonstrate a plan for winding up and concluding the funded activities (or continuing with alternative sources of funding):

1. Shelter capacity will be increased until COVID pandemic restrictions relax and previous shelter capacity is returned. Once restrictions are relaxed or removed, there will be increased capacity at local emergency shelters and the units at the Seabreeze will no longer be needed for sheltering purposes.

2. The increased outreach activity will need to be reviewed and scaled back, as it is activity which is not exclusively linked to COVID-19 pandemic pressures. SSICS operates a core Housing First program, and the impact of this project may lead to an ongoing presence in the core Ganges village area where outreach and access to services may become more easily available to people in need.

3. The CRD bylaw and public information services are expected to be only needed during spring, summer and early fall and will be scaled back later in 2021.

13. Additional Information. Please share any other information you think may help support your submission.

A resolution from the CRD Board is being sought to support this application and is expected to be presented to the Board at its meeting on June 9, 2021.

SECTION 5: Required Attachments

Please submit the following with the completed Application Form:

- ☒ Detailed project budget
- ☐ Council or Board, Local Trust Committee or Treaty First Nation resolution that indicates support for the proposed project and a willingness to provide overall grant management
- ☐ For regional projects: Council, Board, Local Trust Committee, Treaty First Nation resolution from each partnering applicant that clearly states approval for the primary applicant to apply for, receive, and manage the grant funding on their behalf.
- ☐ Optional: Up to three letters of support as evidence of partnership or collaboration with partners such as community-based organizations, non-profit service providers, health authorities and public health units, local First Nations and/or Indigenous organizations.

Submit the completed Application Form and all required attachments as an e-mail attachment to lgps@ubcm.ca and note "2021 SCS" in the subject line. Submit your application as either a Word or PDF file(s).

SECTION 6: Signature. Applications are required to be signed by an authorized representative of the applicant. Please note all application materials will be shared with the Province of BC.	
I certify that: (1) to the best of my knowledge, all information is accurate, (2) the area covered by the proposed project is within the applicant's jurisdiction (or appropriate approvals are in place) and (3) we understand that this project may be subject to a compliance audit under the program.	
Name: Kevin Lorette	Title: General Manager
Signature: K. Lorette	Date: April 20, 2021

All applications should be submitted to:

Local Government Program Services, Union of BC Municipalities

E-mail: lgps@ubcm.ca

UBCM STRENGTHENING COMMUNITY SERVICES' GRANT PROGRAM
Capital Regional District - SSI Electoral Area

Budget

Project Term April 1, 2021-March 31, 2022

UBCM Grant Request **$ 308,520.00**

Expenses	**Direct Cost**	**In Kind**
Captial Regional District Services		
Project Management		$ 5,500.00
Project Governance (Advisory Group)		$ 12,000.00
Additional Bylaw Services (35hrs/wk for 10 wks at $89/hr.)	$ 31,150.00	
Recreation Technician (35 hrs/wk for 4 weeks at $55/hr.)	$ 7,700.00	
Program Expenses	$ 5,000.00	
Administration	$ 5,720.00	
Sub Total	$ 49,570.00	$ 17,500.00
Contracted Social Services		
Wages and benefits		
Housing First Worker ($25.70/hr X 1,456 hrs + Mercs)	$ 47,700.00	
Project Coordinator ($28.22/hr X 728 hrs + Mercs)	$ 26,200.00	
Program Director ($38.96/hr X 104 hrs + Mercs)	$ 5,250.00	
Staff Development	$ 750.00	
Travel	$ 1,800.00	
Meeting Costs	$ 1,250.00	
Communications	$ 2,500.00	
Food	$ 18,000.00	
Program Supplies	$ 2,400.00	
Telephone	$ 2,500.00	
Equipment (Offce furniture, computer, printer, etc)	$ 2,000.00	
Stipend - Peer Support (2 @ $25/hr X 36 hrs/mo X 10 mos)	$ 18,000.00	
Seabreeze Acoomodations (3 units over 12 months)	$ 83,600.00	
Emergency Supports to Unsheltered Persons (medication, health supports, clothing, household items)	$ 6,000.00	
Office Costs (50% of SSICS Hereford Site Office for 12 mos)	$ 24,000.00	
General Admin-SSICS 7%	$ 17,000.00	
Sub Total	**$ 258,950.00**	$ -
TOTAL PROJECT EXPENSES	$ 308,520.00	$ 17,500.00
DIFF	$ -	

Social Service Staff Summary

Position	class	rate		hrs/wk	weeks	hrs/yr	wages	benefits	total
Housing First Worker	JJEP12	25.70	$	28.00	52	1,456	37,419.20	10,290.28	47,709.48
Program Director		38.96	$	2.00	52	104	4,051.84	1,215.55	5,267.39
	TOTAL		**$**	**30.00**		**1,560**	**41,471.04**	**11,505.83**	**52,976.87**

Seabreeze Inne Costs

Unit Type	Number	Months	Monthly Rate	Total
Queen Room	3	7	$ 1,600.00	$ 33,600.00
Queen Room	4	5	$ 1,000.00	$ 20,000.00
King Room with Kitchenette	3	5	$ 2,000.00	$ 30,000.00
Total				**$ 83,600.00**

Making a difference...together

EEP 21-23

REPORT TO REGIONAL WATER SUPPLY COMMISSION
MEETING OF WEDNESDAY, MAY 19, 2021

SUBJECT **Greater Victoria Drinking Water Quality – 2020 Annual Report**

ISSUE SUMMARY

To present the 2020 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 Commission, along with a comprehensive annual report for each calendar year. The Greater Victoria Drinking Water Quality 2020 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 2020 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. Although operation of the new hypochlorite plant at the Goldstream Water Treatment Plant remained temporarily suspended throughout 2020 to complete work on some of the system's components, the existing treatment using ultraviolet radiation and a sequence of chlorination and chloramination remained effective in managing low risks associated with the unfiltered water supply.

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.

The post-wildfire water quality assessment, in the wake of two wildfires in the Sooke Lake catchment (August 16 and 21, 2020), concluded that this event did not have any measurable short-term impact on the source water quality. While not expected to occur, ongoing regular water quality monitoring in the watershed will detect any potential long-term water quality impacts.

Financial and Regulatory Implications

The reporting function is included within the overall budget for the Water Quality Monitoring Program. This task is essential for ensuring 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 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 to direct customer concerns and questions, and work with CRD operational staff, municipal staff, small system operators and Island Health officials to ensure good communication and support for the overall system.

CONCLUSION

The water quality monitoring program remains an essential component in the delivery of a safe drinking water supply to the region. Monitoring results summarized in the Greater Victoria Drinking Water Quality – 2020 Annual Report indicate good water quality overall with the low risks associated with the unfiltered source water being well managed by the CRD multi-barrier approach. Once the report is received and approved by the Board, it will be submitted to the Island Health Authority, as per 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 2020 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:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Greater Victoria Drinking Water Quality – 2020 Annual Report

Making a difference...together

Greater Victoria Drinking Water Quality
2020 Annual Report

Parks & Environmental Services Department | Environmental Protection

Prepared By
Water Quality Program
Capital Regional District
479 Island Highway, Victoria, BC, V9B 1H7
T: 250.474.9680 F: 250.474.9691
www.crd.bc.ca

May 2021

Greater Victoria Drinking Water Quality
2020 Annual Report

EXECUTIVE SUMMARY

This report provides the annual overview of Capital Regional District (CRD) Water Quality Monitoring program and its results on water quality in 2020 within the Greater Victoria Drinking Water System (GVDWS) and its individual system components (Map 1). The results indicate that Greater Victoria's drinking water continues to be of good quality and is safe to drink.

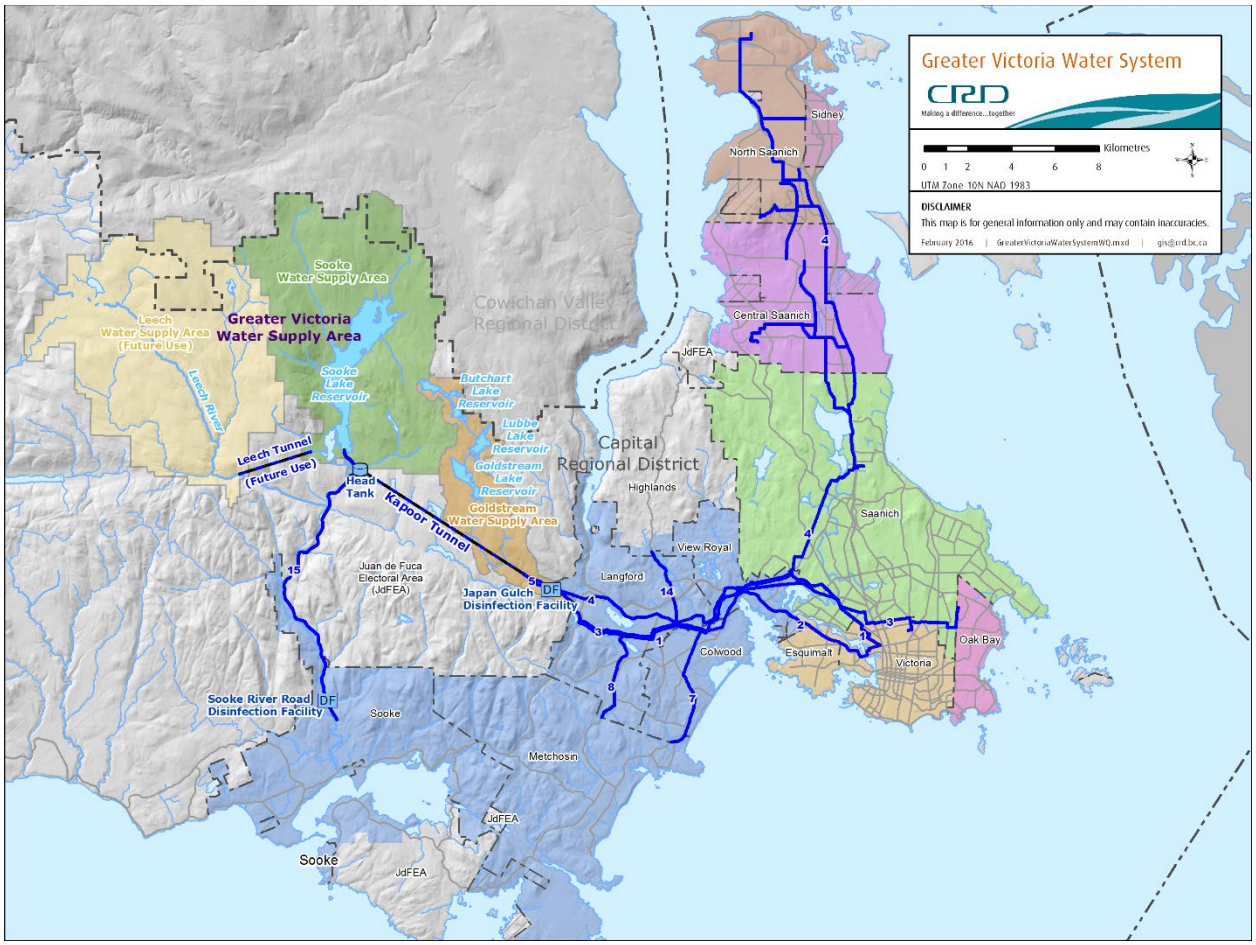
The monitoring program is designed to meet the requirements of the provincial regulatory framework, which is defined by the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*, and follow the federal guidelines for drinking water quality.

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 (formerly called Japan Gulch) 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 five 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 effectivity 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 CRD and municipal water distribution systems in the GVDWS.

MAP 1. Greater Victoria Drinking Water System



Greater Victoria Drinking Water Quality
2020 Annual Report

Table of Contents

EXECUTIVE SUMMARY ..... **I**

1.0 INTRODUCTION **1**

2.0 WATER SYSTEM DESCRIPTION **1**

2.1 Source Water Systems 1
2.2 Water Disinfection 2
2.3 CRD Transmission System 3
2.4 Distribution Systems 5

3.0 MULTIPLE BARRIER APPROACH TO WATER QUALITY **9**

4.0 WATER QUALITY REGULATIONS **11**

5.0 OPERATIONAL CHANGES AND EVENTS – CRD SYSTEMS **13**

5.1 Use of Goldstream Water 13
5.2 Sooke Lake Reservoir 13
5.3 Chlorine Dosage 14
5.4 CRD Reservoir Maintenance 14

6.0 WATER QUALITY MONITORING **16**

6.1 CRD Water Quality Monitoring Program 16
6.2 Sampling Plans 17
6.3 Bacteriological Analyses 20
6.4 Certification and Audits 21

7.0 WATER QUALITY RESULTS **22**

7.1 Source Water Quality Results 22
7.2 Treatment Monitoring Results 60
7.3 CRD Transmission System Results 68
7.4 Distribution System Results 75
7.5 Water Quality Inquiry Program 99
7.6 Cross Connection Control Program 99

8.0 CONCLUSIONS **101**

List of Figures

Figure 1 Water Level Elevation in Sooke Lake Reservoir, 2016-2020 15
Figure 2 Sooke Lake Reservoir Water Sampling Stations 19
Figure 3 Raw Water Entering Goldstream Water Treatment Plant Total Coliforms 2016-2020 24
Figure 4 *E.coli* in Raw Water Entering Goldstream Water Treatment Plant in 2020 25
Figure 5 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, South/Intake Basin, 1 m depth (SOL-00-01) 27
Figure 6 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01) 28
Figure 7 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01) 29
Figure 8 Monthly Abundance Percent of Different Algal Groups, Intake Basin, 1 m depth, SOL-00-01, 2020 30
Figure 9 Monthly Abundance Percent of Different Algal Groups, South Basin, 1 m depth, SOL-01-01, 2020 31
Figure 10 Monthly Abundance Percent of Different Algal Groups, North Basin, 1 m depth, SOL-04-01, 2020 32

Figure 11 Leech River Water Sampling Stations 34
Figure 12 Pictures Illustrating the Difference between Wet and Dry Season at Each Leech Watershed Sampling Site 36
Figure 13 Taxon Composition of Periphyton in Leech Watershed from October 2019 to December 2020 37
Figure 14 Periphyton Densities (NU/cm^2) in Leech Watershed Collected from October 2019 to December 2020 38
Figure 15 Monthly Sample Composition (% of Natural Unit counts - NU) by Major Alga Groups for LWS Site 1 (top) and 2 (bottom) 39
Figure 16 Monthly Sample Composition (% of Natural Unit counts - NU) by Major Alga Groups for Site 3 (top) and 4 (bottom) 40
Figure 17 Density (cells/cm^2) of Cyanobacteria with Toxin Potential, at Four LWS Sites from October 2019 to December 2020 42
Figure 18 Some Periphyton Recorded in Leech Watershed 43
Figure 19 The Total Number of Rotifers over Time, Sooke Lake Reservoir, Intake Basin, 1 m depth (SOL-00-01) 45
Figure 20 The Total Number of Rotifers over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01) 46
Figure 21 The Total Number of Rotifers over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01) 47
Figure 22 The Total Number of Copepods over Time, Sooke Lake Reservoir, Intake Basin, 1 m depth (SOL-00-01) 48
Figure 23 The Total Number of Copepods over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01) 49
Figure 24 The Total Number of Copepods over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01) 50
Figure 25 2020 Turbidity of Raw Water Entering Goldstream Water Treatment Plant 52
Figure 26 2020 Temperature of Raw Water Entering Goldstream Water Treatment Plant (Weekly Average) 54
Figure 27 Total Nitrogen in Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01) 56
Figure 28 Total Nitrogen in Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01) 57
Figure 29 Total Phosphorus in Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01) 58
Figure 30 Total Phosphorus in Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01) 59
Figure 31 2020 UV Treated Water at Goldstream Water Treatment Plant Total Coliforms Before and After UV Treatment 61
Figure 32 Treated Water at First Customer Location below Goldstream Water Treatment Plant; Monthly Total Coliforms and Chlorine Residual in 2020 63
Figure 33 2020 UV Treated Water at Sooke River Road Water Treatment Plant Total Coliforms Before and After UV Treatment 65
Figure 34 Treated Water at First Customer below Sooke Rover Road Water Treatment Plant, Monthly Total Coliforms and Chlorine Residual in 2020 67
Figure 35 Transmission Mains Total Coliforms and Chlorine Residual in 2020 71
Figure 36 Supply Storage Reservoirs Total Coliforms and Chlorine Residual in 2020 74
Figure 37 Juan de Fuca – Westshore Distribution System Total Coliforms and Chlorine Residual in 2020 77
Figure 38 Sooke/East Sooke Distribution System Total Coliforms and Chlorine Residual in 2020 .. 80
Figure 39 Central Saanich Distribution System Total Coliforms and Chlorine Residual in 2020 83
Figure 40 North Saanich Distribution System Total Coliforms and Chlorine Residual in 2020 86
Figure 41 Oak Bay Distribution System Total Coliforms and Chlorine Residual in 2020 89
Figure 42 Saanich Distribution System Total Coliforms and Chlorine Residuals in 2020 92
Figure 43 Sidney Distribution System Total Coliforms and Chlorine Residuals in 2020 95
Figure 44 Victoria/Esquimalt Distribution System Total Coliforms and Chlorine Residuals in 2020 . 98

List of Tables

Table 1 Summaries of Habitat Characteristics at the Four Sampling Sites in Leech Watershed 35
Table 2 2020 Bacteriological Quality of the CRD Transmission Mains 68
Table 3 2020 Bacteriological Quality of Storage Reservoirs 72
Table 4 2020 Bacteriological Quality of the Juan de Fuca Distribution System – Westshore Municipalities (CRD) 75
Table 5 2020 Bacteriological Quality of the Sooke/East Sooke Distribution System (CRD) 78
Table 6 2020 Bacteriological Quality of the Central Saanich Distribution System 81
Table 7 2020 Bacteriological Quality of North Saanich Distribution System 84
Table 8 2020 Bacteriological Quality of Oak Bay Distribution System 87
Table 9 2020 Bacteriological Quality of Saanich Distribution System 90
Table 10 2020 Bacteriological Quality of Sidney Distribution System 93
Table 11 2020 Bacteriological Quality of Victoria Distribution System 96

Appendix A Tables 1, 2, 3, 4 and 5

Greater Victoria Drinking Water Quality
2020 Annual Report

1.0 INTRODUCTION

This report is the annual overview of the results from water quality samples collected in 2020 from the Greater Victoria Drinking Water System (GVDWS) (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 2020, the GVDWS supplied drinking water to approximately 392,000 people and is the third largest drinking water system operating in British Columbia. It comprises two separate service areas:

1. The **Goldstream (Japan Gulch) Service Area** that supplies water to approximately 376,500 people in Victoria, Saanich, Oak Bay, Esquimalt, Central Saanich, North Saanich, Sidney, Highlands, Colwood, Langford and Metchosin via the Goldstream Water Treatment Plant (formerly called Japan Gulch).

2. The **Sooke Service Area** that supplies water to approximately 15,500 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 (Japan Gulch) 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 2020, 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 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. In 2020, the new hypochlorite chlorination plant was out of service with the chlorine gas plant back in service. 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.
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, CRD re-chloraminates 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 four years. It has been deemed unnecessary for maintaining adequate residuals. Currently, there are no provisions to re-chloraminate the water at the far reaches of the distribution system on the Saanich Peninsula; however, emergency re-chlorination stations are provided at the Upper Dawson Reservoir, 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 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 Japan Gulch 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.

The Saanich Peninsula Trunk Water Distribution System is comprised of 46 km of transmission mains, including the 750 mm (30") Bear Hill Main, the 400 mm (16") Keating Main, the 400 mm (16") Dean Park Main and the 250-500 mm (10-20") Saanich Peninsula mains.

At McTavish Reservoir (the terminus of the Regional Transmission System), the Saanich Peninsula Trunk Water Distribution System continues further along the peninsula via a 610 mm-diameter (24") concrete cylinder pipe. In the vicinity of the airport, this main reduces to a 406 mm-diameter (16") asbestos cement pipe that terminates at the Deep Cove pump house. A dedicated 250 mm-diameter (10") perm/PVC pipe connects Deep Cove pump station with Cloake Hill Reservoir. A 457 mm-diameter (18") pipe along Mills Road connects the trunk main to the northwest end of the Sidney Distribution System.

The CRD also operates six major pumping stations located at Hamsterly, Martindale, Lowe Road, Dean Park Lower, Dean Park Middle and Deep Cove, along with two minor pumping stations located at Mt. Newton and 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 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 m^3 (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 m^3 (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 m^3 (1M gallon), located on Bear Hill in Saanich.
- Cloake Hill Reservoir, a one-cell, 4,546 m^3 (1M gallon) reservoir located on Cloake Hill in North Saanich.

- Dawson Upper Reservoir, a one-cell, 455 m^3 (100,000 gallon) reservoir located off Benvenuto Avenue in Central Saanich.
- Dean Park Lower Reservoir, a two-cell concrete above-ground reservoir, 4,546 m^3 (1M gallon), located beside Dean Park Road in North Saanich.
- Dean Park Middle Reservoir, two cylindrical concrete above-ground tanks, 2,730 m^3 (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 m^3 (1M gallon), located near the top end of Dean Park in North Saanich.
- McTavish Reservoir, a two-cell concrete in-ground reservoir, 6,820 m^3 (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 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 2020, water was supplied to the Juan de Fuca Water Distribution System (in this report, not including Sooke – see Sooke/East Sooke Distribution System below) primarily from mains #1 and #3. 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 m^3 (275,000 gallon) reservoir located on the lower slopes of the Bear Mountain development in Langford.
- Deer Park Reservoir, a one-cell, 182 m^3 (40,000 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.
- Fulton Reservoir, a two-cell, 4,580 m^3 (1,007,459 gallon) reservoir located at the end of Fulton Road in Colwood.
- Peacock Reservoir, a two-cell, 583.8 m^3 (128,420 gallon) reservoir located north of the Trans-Canada Highway off of Peacock Place in Langford.
- Rocky Point Reservoir, a three-cell, 546 m^3 (120,000 gallon) reservoir located near the end of Rocky Point Road in Metchosin.
- Skirt Mountain Reservoir, a three-cell, 6,525 m^3 (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 m^3 (53,300 gallon) reservoir located off of Stirrup Place Road in Metchosin.

- Walfred Reservoir, a three-cell, 560 m^3 (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 Sassenos 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 m^3 (100,000 gallon), located off of Coppermine Road in East Sooke.
- Helgesen Reservoir, a four-cell concrete partly in-ground reservoir, 6,973 m^3 (1,533,850 gallon), located at the west end of Helgesen Road in Sooke.
- Henlyn Reservoir, a one-cell steel tank tower, 224 m^3 (49,270 gallon), located off of Henlyn Drive in Sooke.
- Silver Spray Reservoir, a two-cell cylindrical concrete tank, 841 m^3 (185,000 gallon), located off of Silver Spray Drive in East Sooke.
- Sunriver Reservoir, a two-cell concrete above-ground reservoir, 1,800 m^3 (395,944 gallon), located off of Sunriver Way in Sooke.

2.4.3 Central Saanich Distribution System – District of Central Saanich

In 2020, 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 pump station supplied an agricultural area in the southeast corner of the municipality. The Island View Road area was supplied by the Stelly's pump station. The Mount Newton pump 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 CRD transmission system infrastructure to provide this. Several CRD-owned reservoirs in Central Saanich, that are considered part of the transmission system, function as distribution reservoirs for the Central Saanich Distribution System.

2.4.4 North Saanich Distribution System – District of North Saanich

In 2020, 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 2020 and is, therefore, not included in this report.

2.4.5 Oak Bay Distribution System – District of Oak Bay

In 2020, 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 2020, 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 m^3 (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 m^3 (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 m^3 (3.7M gallon) reservoir located at the end of Perez Drive in Broadmead in Saanich.
- Wesley Reservoir, a two-cell, 3,182 m^3 (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 2020, drinking water was supplied to the northern portion of the Sidney Distribution System from the 300 mm-diameter water main on Mills Road via the 460 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 mm 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/Esquimalt 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 2020, drinking water was supplied to the Victoria/Esquimalt 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, Sommerset 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/Esquimalt 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, in order 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 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 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.
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 CRD Bylaw 3516, the Cross Connection Control Bylaw for the GVDWS. This bylaw was reviewed and updated last in 2019.
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 guidelines[1] 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 an 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.

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 CRD's water treatment goals.

[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)

The GVDWS, as an unfiltered surface water system, must also 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, as well as the criteria for filtration exemption by the USEPA Surface Water Treatment Rules for Unfiltered Systems. 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 ≤20 CFU/100 mL

5.0 OPERATIONAL CHANGES AND EVENTS – CRD SYSTEMS

5.1 Use of Goldstream Water

In 2020, 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 2021 and the Goldstream System will only be used for emergency purposes until then.

5.2 Sooke Lake Reservoir

Figure 1 shows the Sooke Lake Reservoir water levels in 2020 compared to previous years. In contrast to previous years, the reservoir did not fill completely until January 23. This was the first time since 2013 that the reservoir was not at 100% capacity by January 1. After filling, Sooke Lake Reservoir remained at 100% capacity until mid-April. In 2019, the reservoir remained full until the end of April. With drier and warmer weather beginning in May, the reservoir levels continuously receded throughout the summer and into the fall. Some productive rain events in mid-September slowed and temporarily halted the reservoir level decrease until the lowest level was finally reached on October 9 with 69.5% of full capacity. The typical rapid reservoir recharge began with the onset of heavy rainfalls at the beginning of November. By December 26, the reservoir reached the full service level, which has been typical in recent history.

A lightning storm passing over the CRD Water Supply Area on the night of Sunday August 16, 2020, ignited two wildfires within the watershed catchment of Sooke Lake Reservoir. The Mt Healey Fire grew to about 6 ha in size, but only a small portion burned inside the Sooke Lake catchment. Most of the area burned by this fire was within the neighbouring Deception Reservoir catchment. The Rithet Fire burned approximately 2 ha within the catchment of Sooke Lake Reservoir. The closest that any of the two fires came to the shore of Sooke Lake Reservoir was approximately 1 km. As a fire suppression response, approximately 11,000 L of 15% PHOS-CHECK LC95A retardant were dropped on the Mt. Healey Fire on August 17, 2020. For several days after August 17, CRD staff assumed that the retardant was also applied on the Rithet Fire but this misinformation was later corrected. The active chemical ingredient of this retardant consists mostly of ammonium phosphate, a potent fertilizer commonly used in agriculture. Its aerial application by the BC Wildfire Service was approved by CRD staff.

Both fires were fully contained and largely extinguished by August 21, 2020. This was partly a result of productive rainfall on August 20 and 21, 2020. This precipitation following the wildfire triggered a post-fire water quality assessment according to the Emergency Response Procedures (Water Quality Wildfire Action Plan). Water quality risks from wildfires in source water catchments generally include soil erosion with effects on turbidity, water chemistry and lake productivity due to nutrient and mineral input. In case of fire suppression chemical use, further risk comes with the direct input of chemicals into the source water. The first phase of the post-fire water quality assessment included sampling at various Sooke Lake sites (sampled by boat), as well as potentially fire-affected Sooke Lake tributary creeks. The parameter tested spanned a large spectrum of organic and inorganic parameters that could potentially be impacted by any soil erosion and chemical application. The results were compared to long-established baseline data from Sooke Lake and regularly sampled tributary creeks.

A second phase of post-fire water quality assessment was initiated following the next period of productive rainfall that occurred from September 23 to 26, 2020. With a total rainfall of 132 mm during this period, CRD staff concluded that if there was any measurable short-term water quality impact from the wildfires, it would certainly be triggered by this large rain event. The sampling sites included again several Sooke Lake sites (sampled by boat), as well an expanded number of tributary creeks. This phase also included two creeks in the Deception Reservoir catchment, of which one was impacted by the Mt Healey Fire (Deception Creek) and one that was not (Muckpile Creek). This was to compare results in an attempt to identify any potential water quality impacts from the fire.

All results were compared to historic baseline data for tributary creeks and the reservoir. None of the results indicated a measurable effect on water quality due to the wildfires from potential soil erosion or the use of fire retardant. It was therefore concluded that the 2020 wildfire event had no short-term impact on the source water quality. While not expected to occur, ongoing regular water quality monitoring in the watershed will detect any potential long-term water quality impacts.

5.3 Chlorine Dosage

In 2020, 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 2020 at both plants. Critical for adequate secondary disinfection is achieving a high ratio of Total Chlorine/Monochloramine. While the new hypochlorite plant at the Goldstream Water Treatment Plant can achieve consistently ratios of 90%, the old chlorine gas plant that was utilized in 2020 achieved ratios of around 85%. The Sooke River Road Water Treatment Plant generally achieved ratios of 85-95%.

On December 26, 2020, the ammonia injection was discontinued at the Goldstream Water Treatment Plant for scheduled repairs on the ammonia system. To compensate for the higher chlorine demand associated with a free chlorine residual across the Goldstream Service Area, the chlorine dosage was increased from 2.3 mg/L to 2.6 mg/L at the Goldstream Water Treatment Plant. This event lasted until January 21, 2021 when the ammonia injection resumed and the chlorine dosage was lowered back to 2.3 mg/L.

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 in 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.

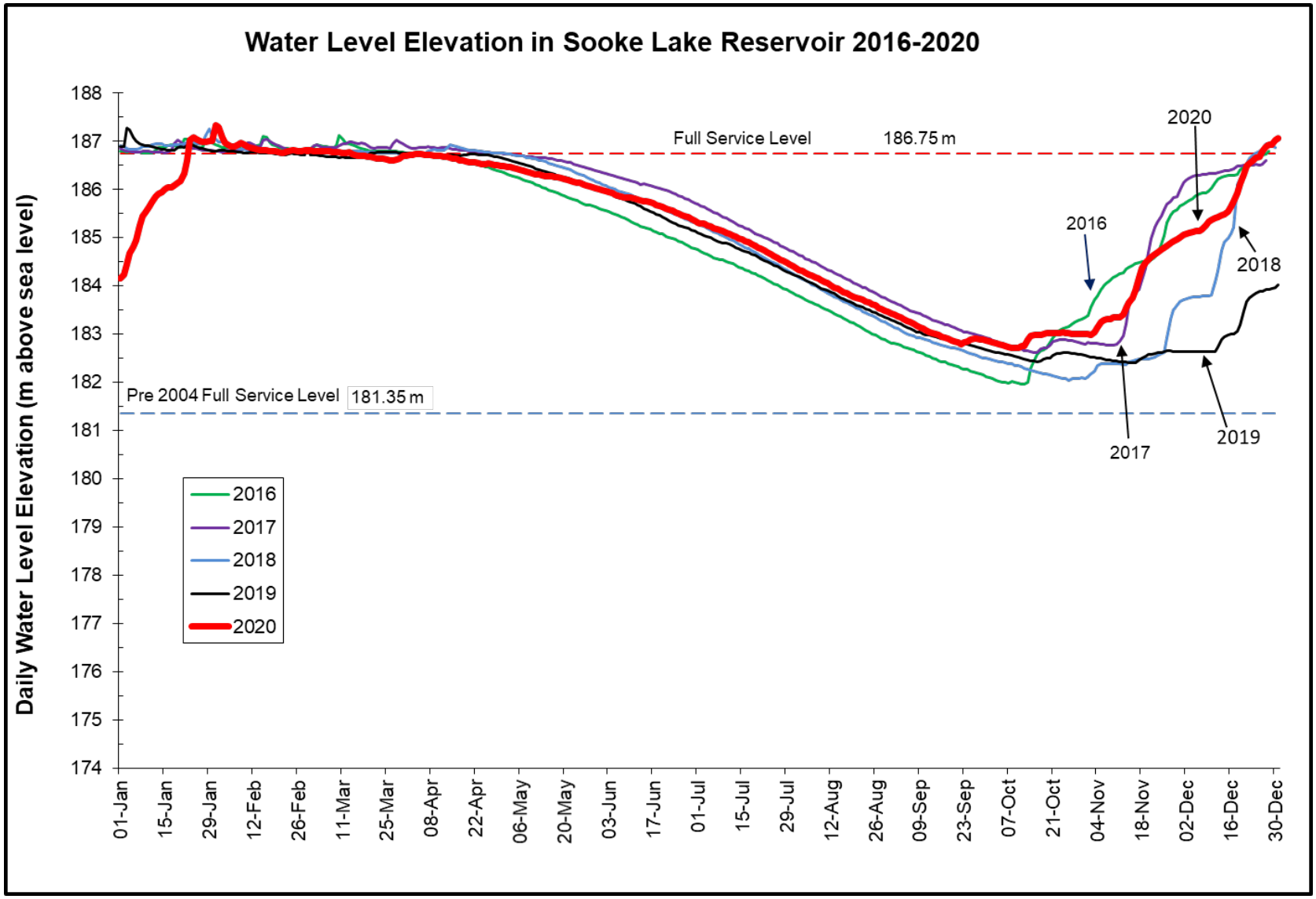


Figure 1 Water Level Elevation in Sooke Lake Reservoir, 2016-2020

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 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 (Japan Gulch) 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 *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 and 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. 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 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 (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 (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 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 2020, the Drinking Water Safety Plan included 24 High Risks and 200 Moderate Risks to water quality.

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. At the end of 2020, the CRD finished a two-year Leech River water quality monitoring project with weekly sampling/testing of multiple parameters in various parts of the Leech watershed. In 2021, this project is going to transform into an ongoing Leech River water quality monitoring program.
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) and 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.

3. 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.

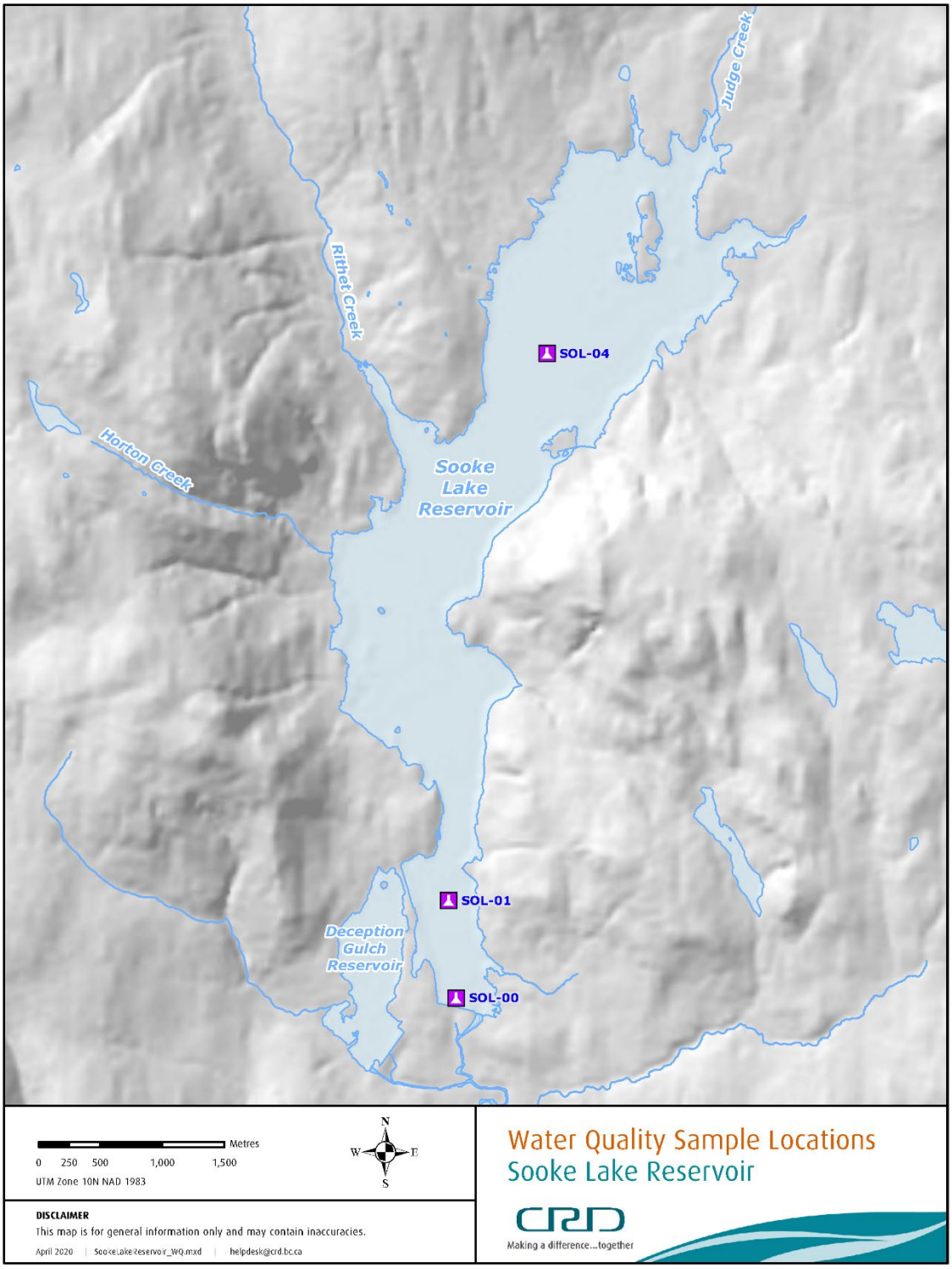


Figure 2 Sooke Lake Reservoir Water Sampling Stations

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 2020 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 2020, total coliform bacteria were analyzed at the CRD Water Quality Laboratory using the membrane filtration method and Chromocult Coliform Agar incubated at 36-38ºC 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 2020, *E. coli* were analyzed by the CRD Water Quality Laboratory using the membrane filtration method and Chromocult Coliform Agar incubated at 36-38ºC 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 (HPC7D) are used as a general measure of the bacterial population present in a drinking water system and in the raw source water. 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. In the CRD Water Quality Monitoring Program, heterotrophic plate count bacteria are used to monitor the disinfection of the water at the disinfection plants and to track the decline in chlorine residuals in the distribution system and storage reservoirs.

Test Method. In 2020, heterotrophic plate count bacteria were analyzed by the CRD Water Quality Laboratory using membrane filtration (R2A media, 21-28ºC, seven-day incubation). As heterotrophic bacteria can be measured in several different ways, this method provides the quantity of heterotrophic bacteria capable of growing on R2A medium within seven days at room temperature. Raw water samples and water leaving the treatment plant were analyzed for HPC7D bacteria. In addition, samples with low chlorine residual levels (below 0.2 mg/L) were also analyzed for HPC7D.

Regulatory Limits. There is no federal or provincial regulatory limit on the quantity of heterotrophic bacteria allowed in drinking water. However, the US EPA Surface Water Treatment Rule considers a 500 CFU/mL HPC7D as an indicator for a "detectable chlorine residual". Therefore, in the absence of a Canadian regulatory limit, the CRD Water Quality Monitoring Program uses the US EPA rule as a monitoring criteria to trigger site-specific operational measures for assessing and mitigating the drinking water quality.

6.4 Certification and Audits

To ensure that the analytical testing is performed to the highest possible standard, the 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

The Province of BC requires that all laboratories analyzing drinking water samples 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.

6.4.2 Accreditation

The CRD Water Quality Laboratory received in 2017 the accreditation to the International Standards Organization 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 (The Canadian Association for Laboratory Accreditation) and satisfactory participation in an external proficiency testing program. The last reassessment of the CRD Water Quality Lab occurred in 2019.

7.0 WATER QUALITY RESULTS

The overview results of the 2020 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 August and October when the Sooke Lake south basin was destratified and, therefore, fully mixed with warm water. There was one total coliform spike in mid-September that was likely caused by wind-induced internal seiche, as experienced in 2017, albeit on a much smaller scale.

With 245 samples analyzed in 2020, the total coliform concentration ranged from 0-470 CFU/100 mL, with a median value of 10 CFU/100 mL (Figure 3). 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 90th percentile of total coliform concentrations in the raw water between January and June 2020 was 11 CFU/100mL, and between July and December 2020 it was 88.6 CFU/100 mL. Therefore the source water was compliant with USEPA filtration exemption criteria in all of 2020.

***E. coli* Bacteria**. During more than two 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 2020, 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 2020, about 9.5% of the 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 low occurrence, as well as the low concentrations of *E.coli* bacteria in Sooke Lake, are in line with long-term historical bacteria concentrations. In 245 samples analyzed for *E. coli*, only some contained this bacteria and the concentration ranged from 0-2 CFU/100 mL, with a median value of 0 CFU/100 mL. 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 between fall and early spring were a typical result of the heavy rainfall and runoff into Sooke Lake, which transported organic matter accumulated in the watershed to the lake. 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 2020, the Goldstream System was not used as a drinking water source.

***Giardia and Cryptosporidium* Parasites**. In 2020, 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 2020, no *Giardia* cysts and no *Cryptosporidium* oocyst 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.

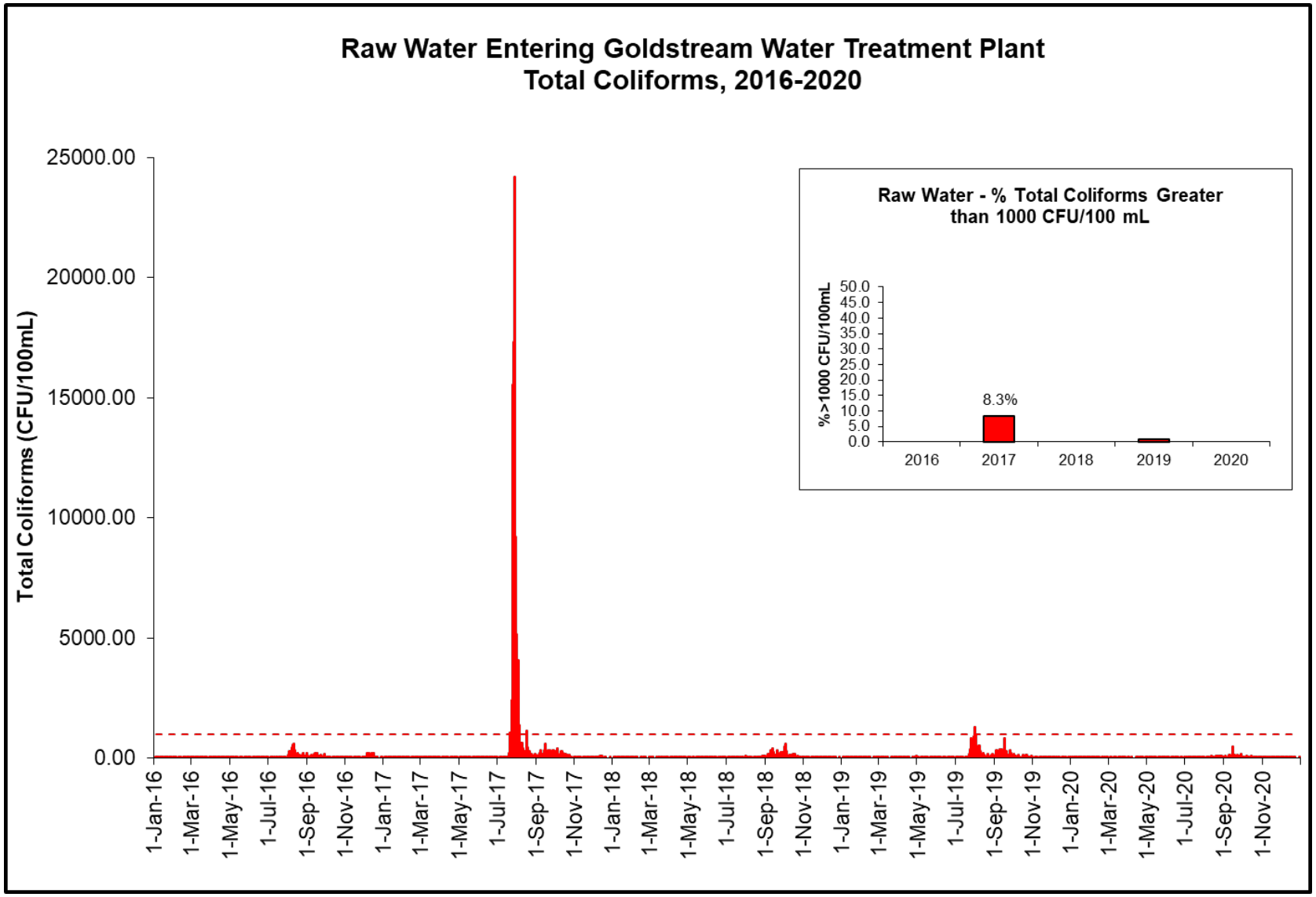


Figure 3 Raw Water Entering Goldstream Water Treatment Plant Total Coliforms 2016-2020

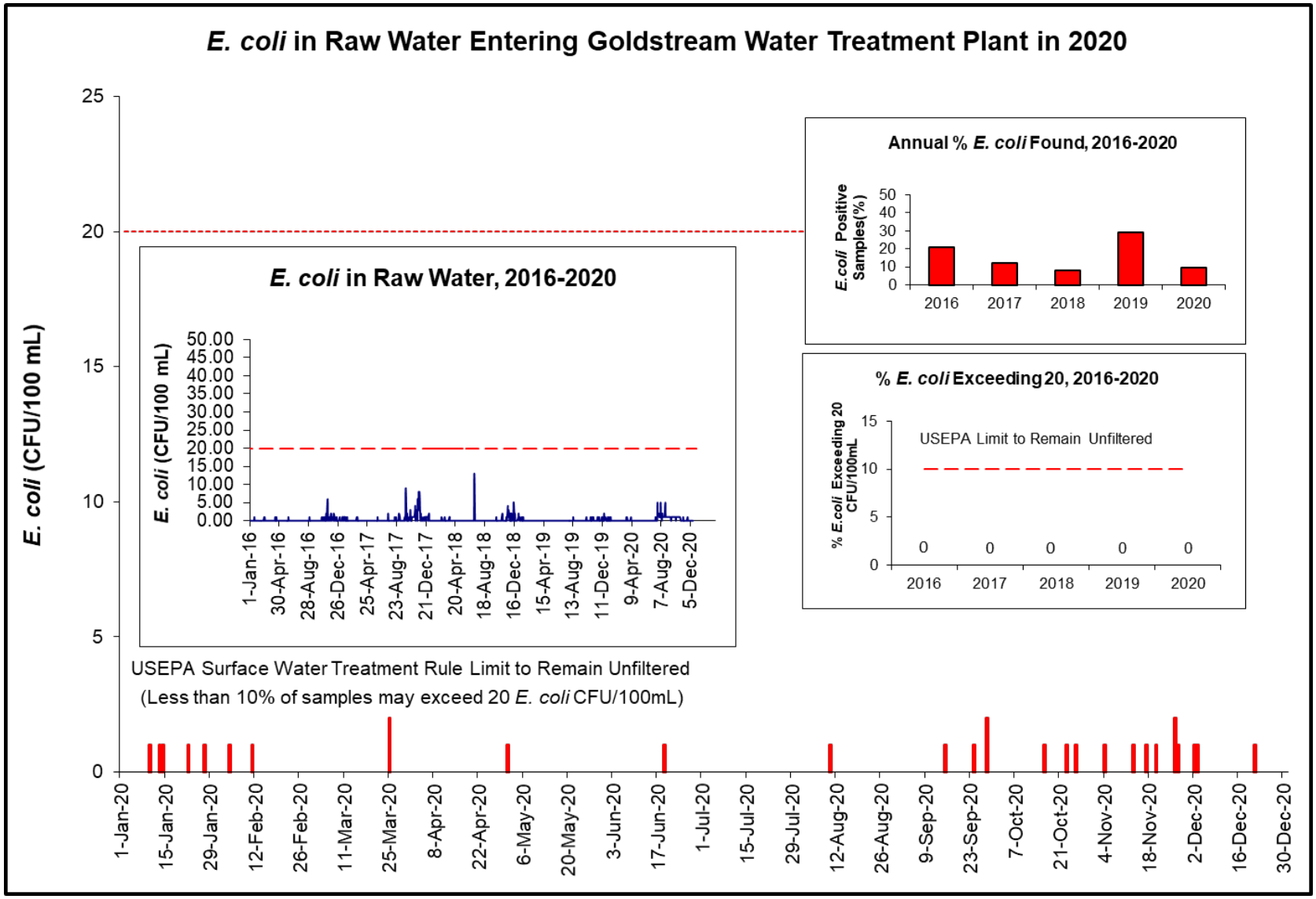


Figure 4 ***E.coli*** **in Raw Water Entering Goldstream Water Treatment Plant in 2020**

Algae – *Sooke Lake Reservoir (SOL)*. In 2020, the algal dynamics were generally in line with the long-term trend. For example, diatoms increased from late winter and peaked in spring before decreasing in summer; golden algae had high density from the late winter to spring, declined in summer, but increased again in the fall. Nevertheless, the algal density was slightly higher than average from the late spring to the end of the year.

Algae are able to grow rapidly and become seasonally abundant under favourable weather conditions. The summer of 2020 featured above average seasonal temperatures with heat records broken in parts of BC, as well as strong and frequent rainfalls in late summer and fall. From early May to late June, a higher than usual abundance of the colonial golden alga, *Uroglena* sp occurred in Sooke Lake Reservoir. This was responsible for some taste and odour complaints from customers (approximately 20 complaints) during that period and a public advisory was issued between June 2 and 9, 2020. When in a bloom state, *Uroglena* sp. can cause a fishy smell or metallic-fishy taste. Taste and odour, however, are aesthetic issues and no health concern. Studies showed that phosphorus is the limiting factor for *Uroglena* sp. growth. However, as it is a mixotrophic alga (i.e., they carry out photosynthesis and/or feed on bacteria and micro-particles), it is able to bloom in water bodies with very low phosphorus concentration, such as Sooke Lake Reservoir. *Uroglena* blooms are not common in Sooke Lake Reservoir. Interestingly, a number of southern BC surface waters experienced *Uroglena* blooms during the summer of 2020, which indicates that favourable environmental conditions, such as frequent rainfalls, well into July were likely the cause for these events.

The source water quality monitoring program recorded small flagellates (~5 microns, possibly the green flagellates, *Pedinomonas* spp.), which were quite abundant from the end of summer until the end of fall in 2020, but these flagellates caused no water quality concerns. Due to their small size, these flagellates did not contribute significantly to the total algal biomass, therefore, they were excluded in the algal graphs to be consistent with previous years.

Overall, algal density fitted well with the long-term trend in Sooke Lake Reservoir, with natural unit counts a little higher compared to the multi-year average during the second half the year. Except for the short-term taste and odour issue, due to the *Uroglena* bloom, there were no other water quality concerns related to algae.

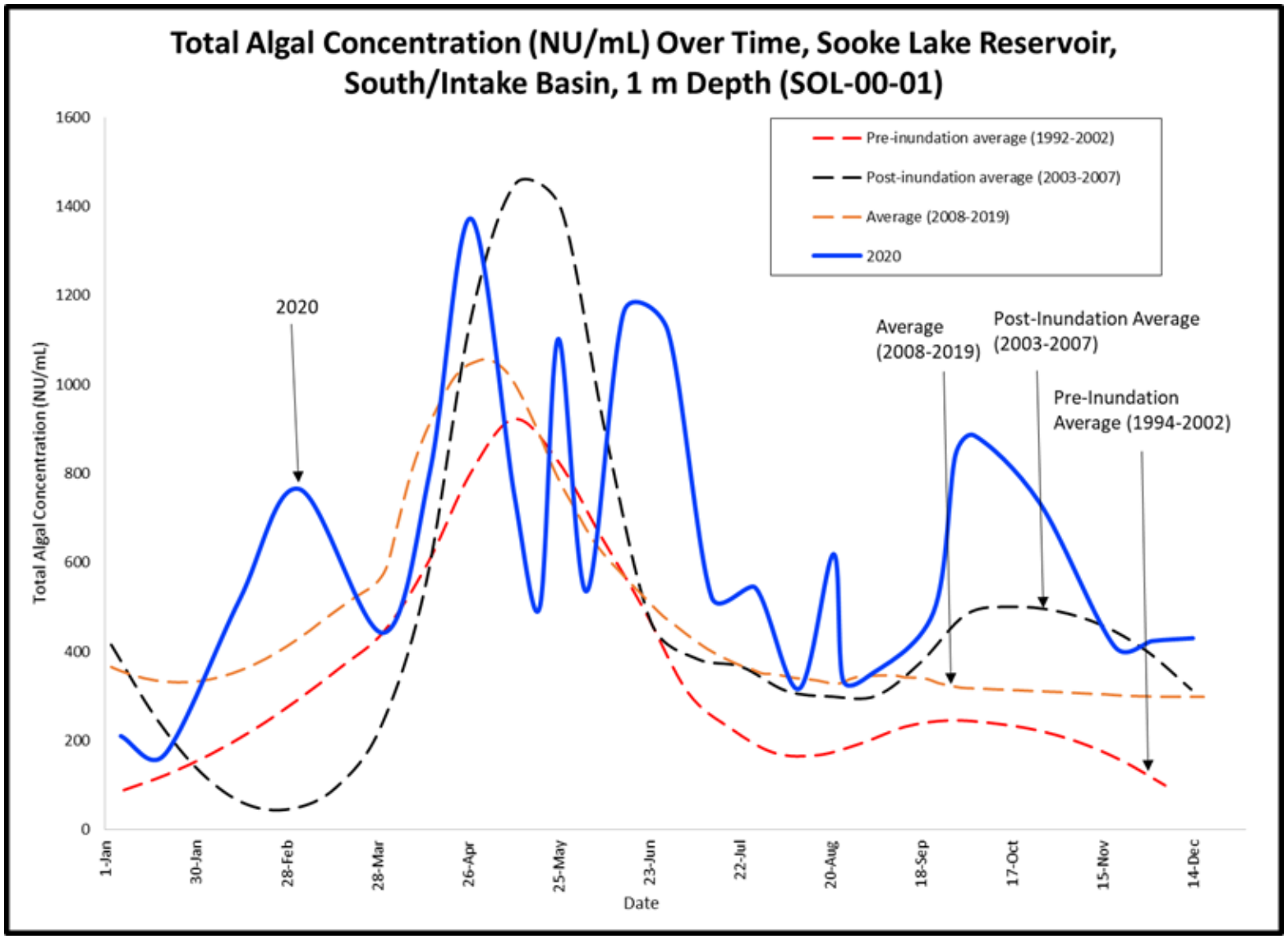


Figure 5 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, South/Intake Basin, 1 m depth (SOL-00-01)

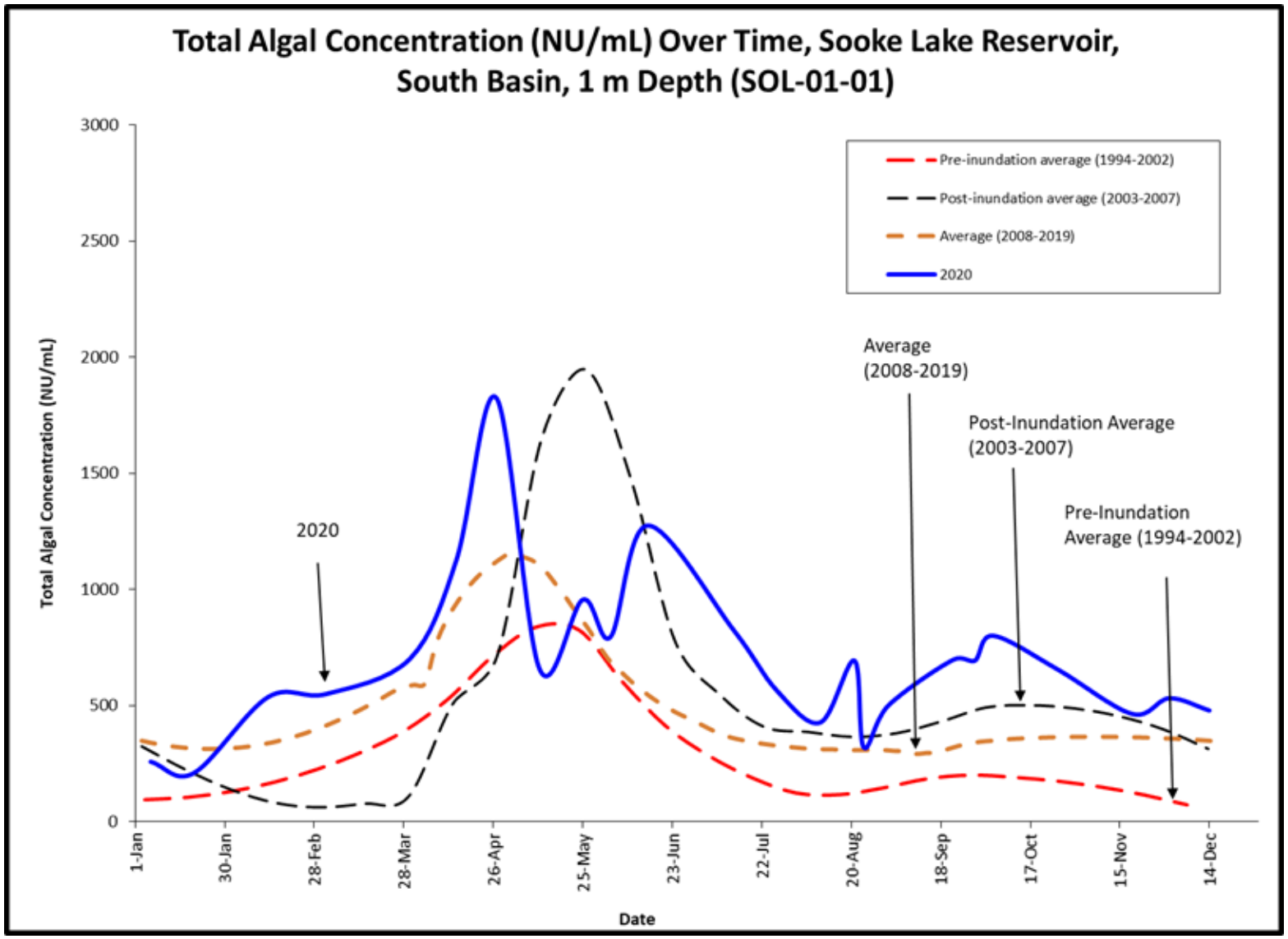


Figure 6 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

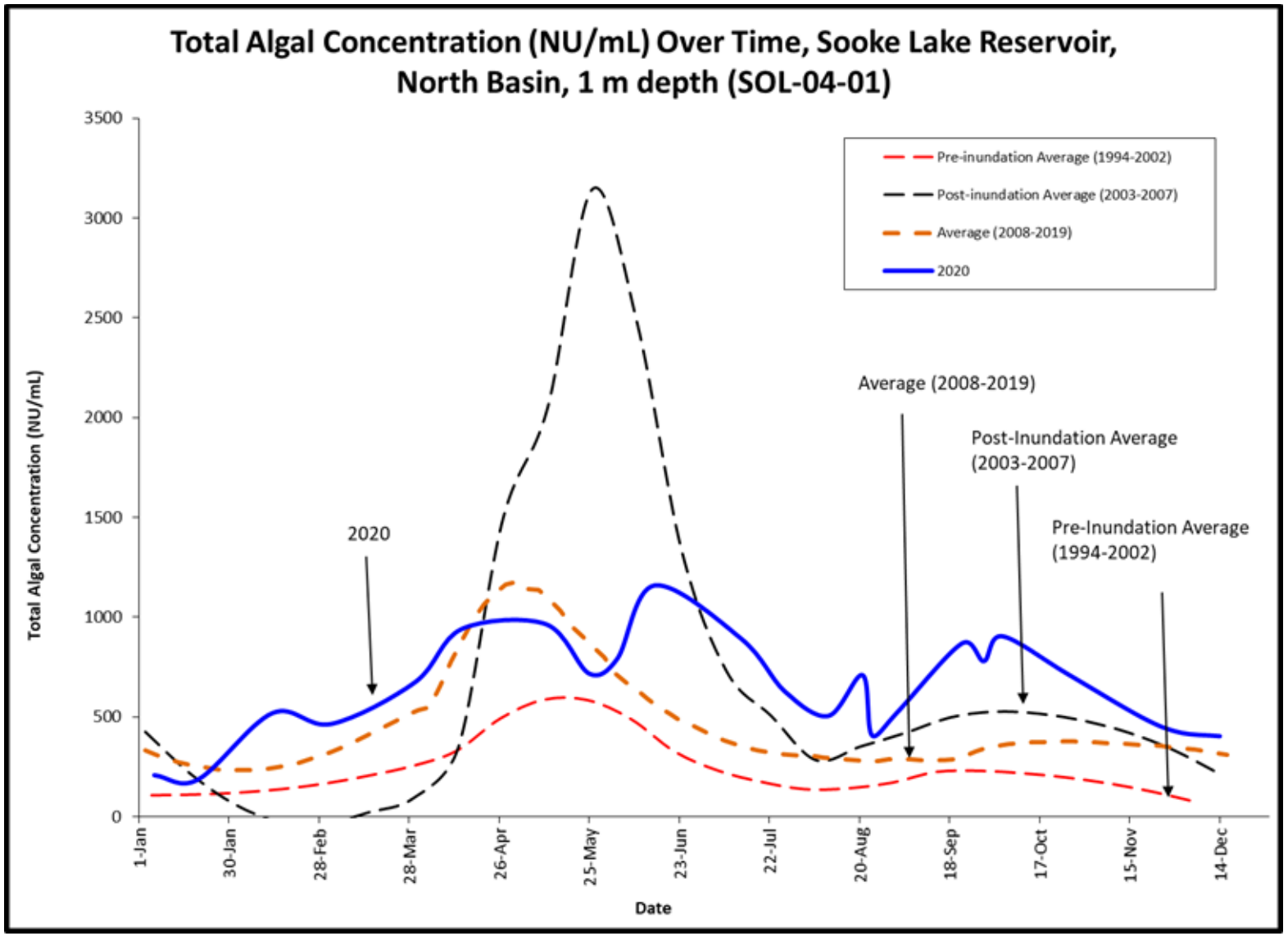


Figure 7 Total Algal Concentration (natural units/mL) Over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

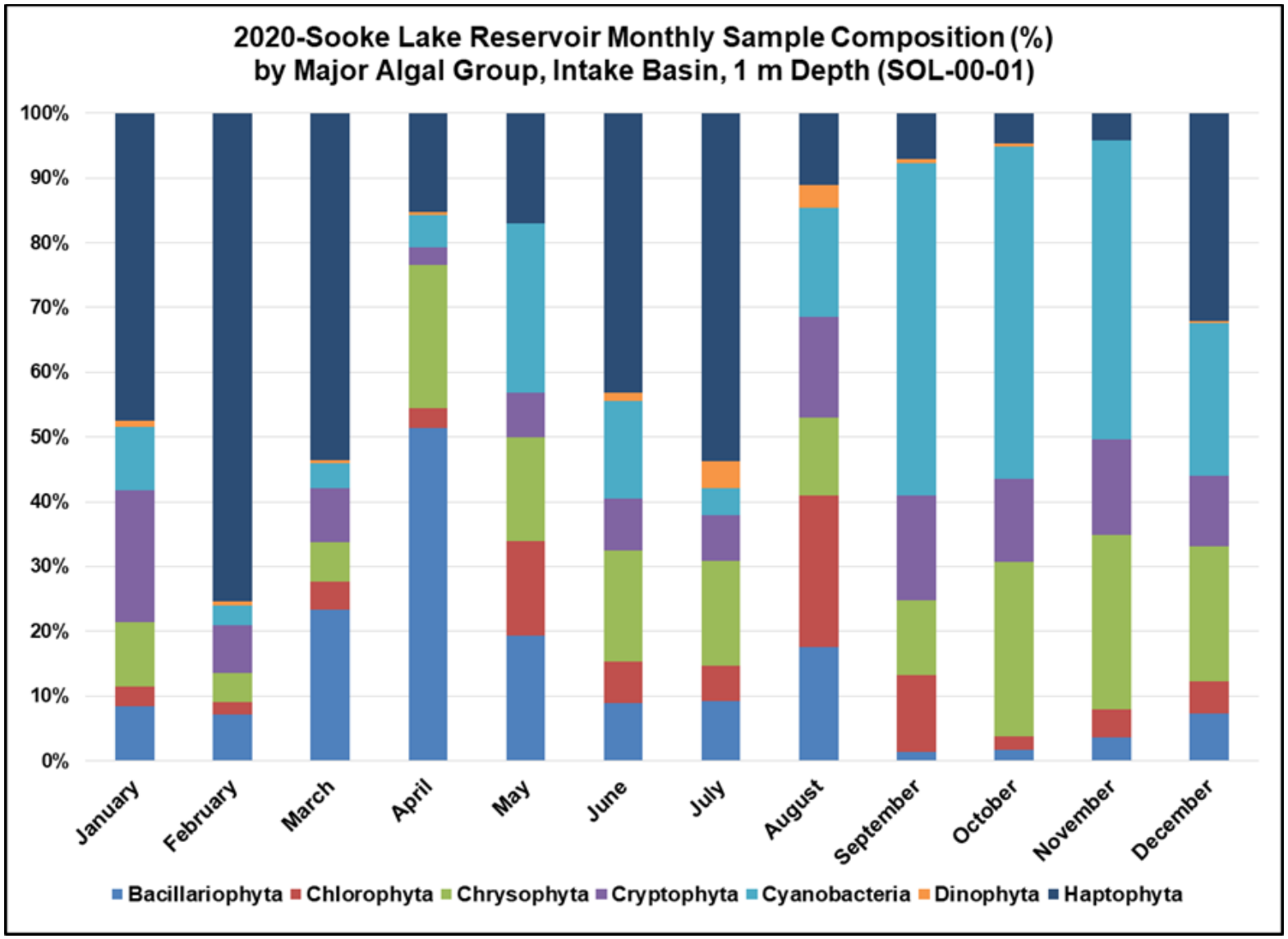


Figure 8 Monthly Abundance Percent of Different Algal Groups, Intake Basin, 1 m depth, SOL-00-01, 2020

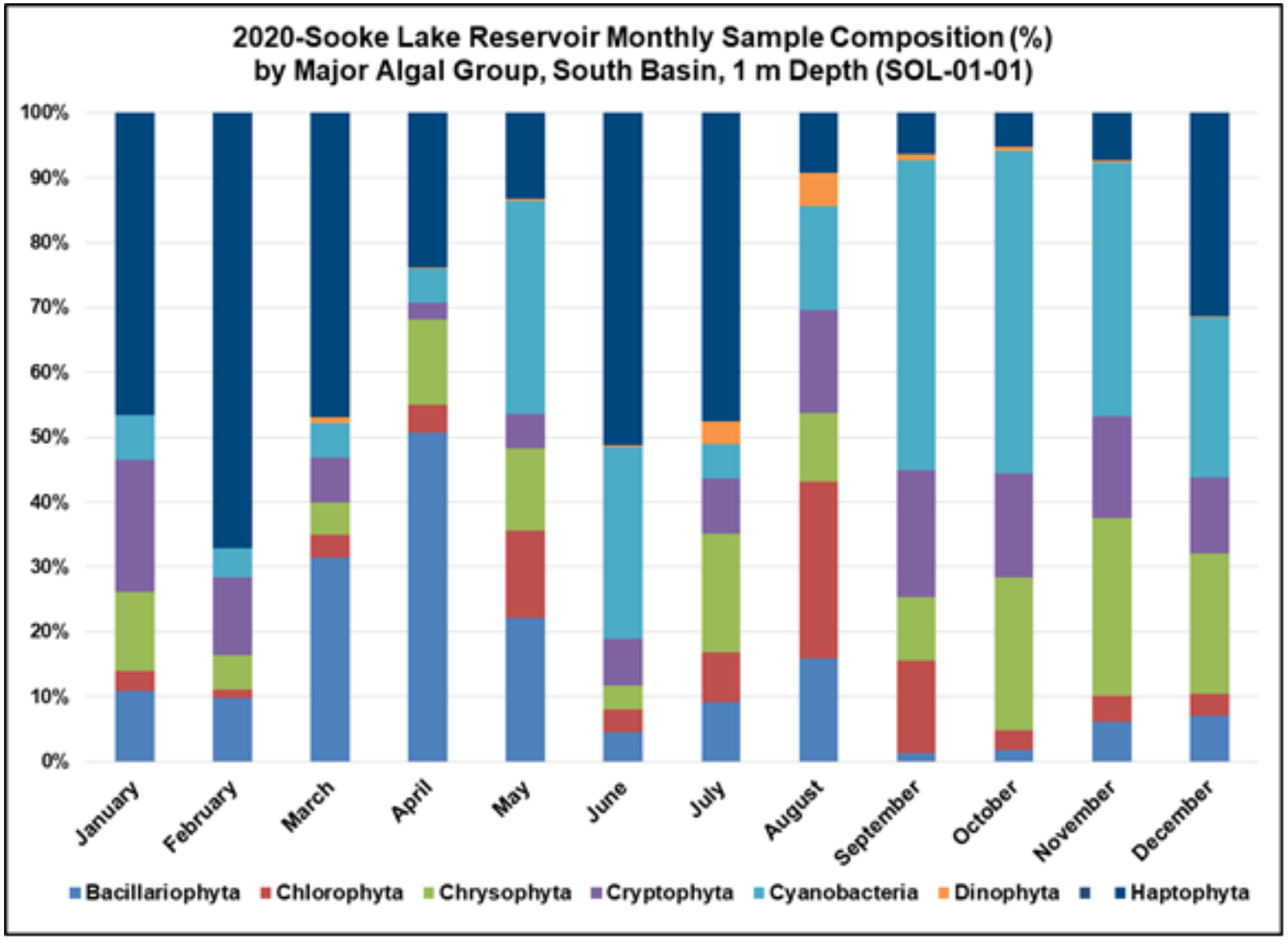


Figure 9 Monthly Abundance Percent of Different Algal Groups, South Basin, 1 m depth, SOL-01-01, 2020

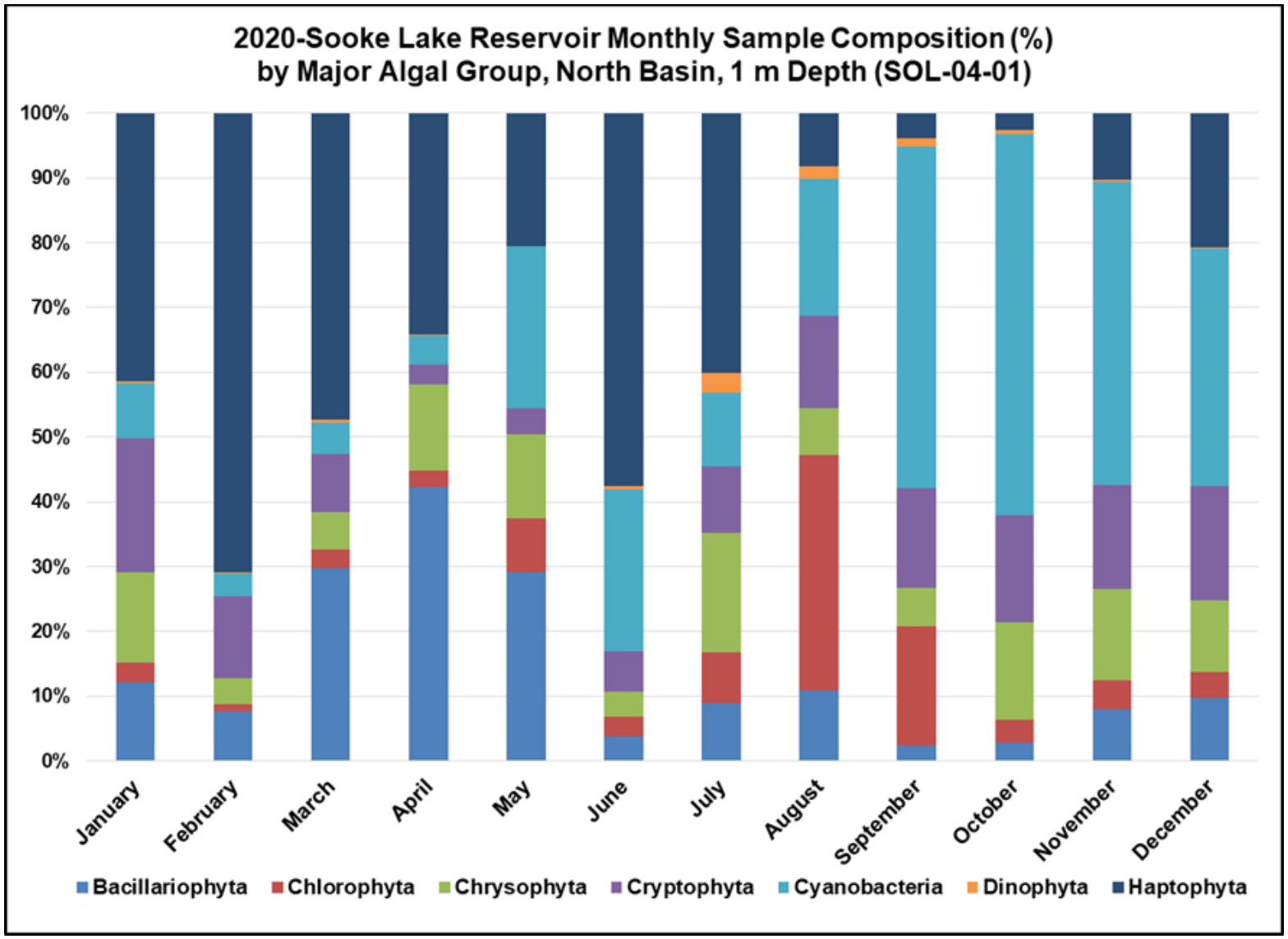


Figure 10 Monthly Abundance Percent of Different Algal Groups, North Basin, 1 m depth, SOL-04-01, 2020

Algae – *Leech River Watershed*. Most current water quality monitoring programs for streams use periphyton as bioindicators rather than potamoplankton (phytoplankton in streams). Periphyton are algae that are attached to the stream substrates and constitute the most dominant form of algae in flowing water. Phytoplankton, which are the most prevailing algal forms in standing water, play an insignificant role in streams. In August 2019, CRD staff started collecting and analyzing water samples from the Leech River watershed. The results revealed that most taxa were periphyton, possibly released from the benthic habitats, rather than typical phytoplankton. Further analyses showed that total chlorophyll concentrations were very low in Leech River water samples in 2019 and 2020. Consequently, CRD staff discontinued analysis for phytoplankton on Leech River samples. Quarterly chlorophyll-a tests have been included in the sampling plan.

Leech River watershed samples collected in 2020 were part of the multi-season baseline monitoring project that CRD staff conducted from August 2019 through December 2020. Within the scope of this project, algae samples were collected monthly from four sites in Leech Watershed (LWS): 1) LR-US, 2) LR-DS, 3) LR-TUN, and 4) LR-CRG (see Figure 11), whereas the LR-TUN is located at the entrance of the Leech River water diversion tunnel that was constructed in the 1980s, but only used very briefly in 1988.

Table 1 provides a habitat characterization of the four chosen sampling sites within the Leech River watershed. This information is important to consider when analyzing the water quality data collected over the period of the project. Figure 12 also showcases the drastic hydrological difference between stream conditions during wet and dry season. This also factors into the water quality data analysis and will play a major role in future evaluations for a potential use of the Leech River watershed for drinking water supply.

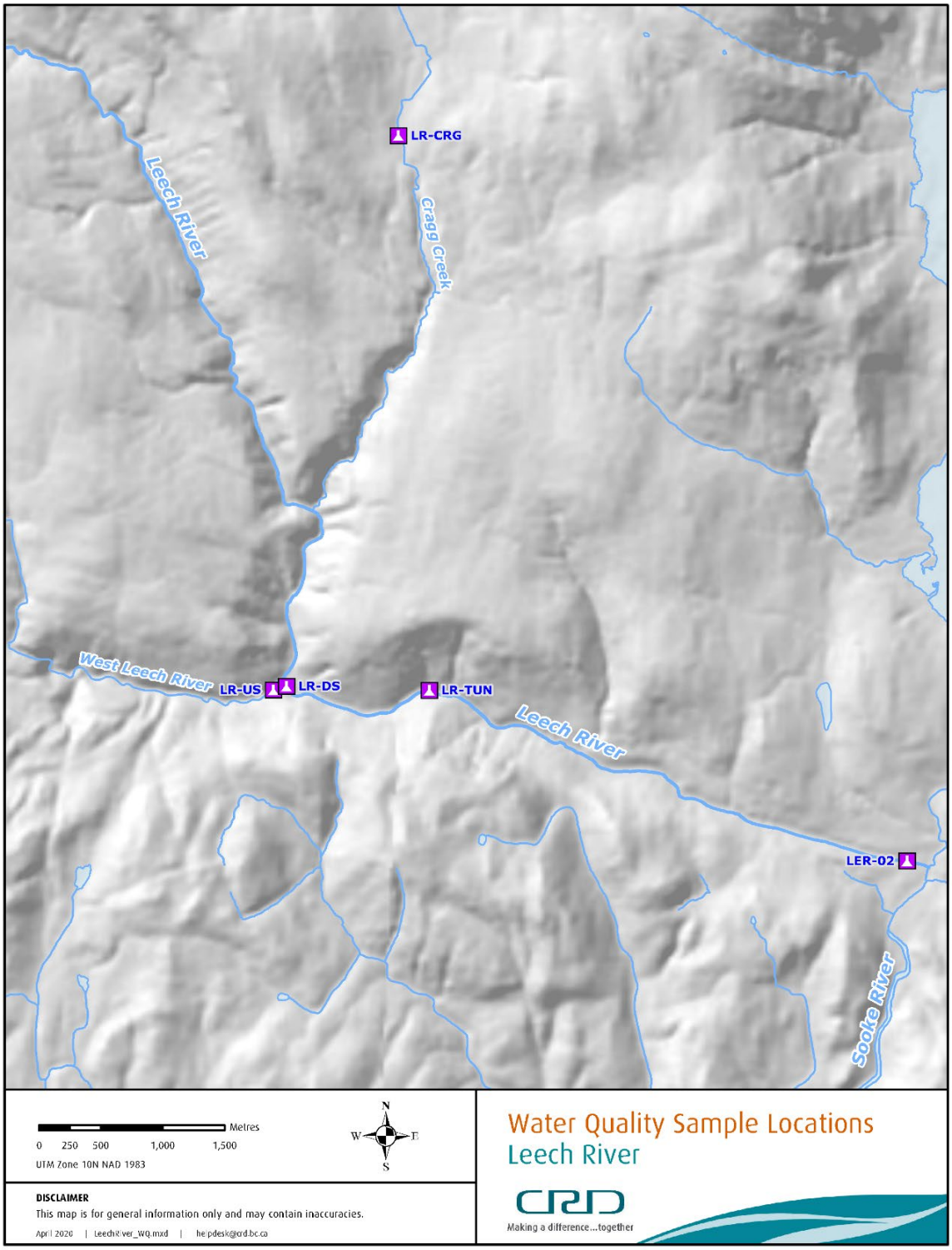


Figure 11 Leech River Water Sampling Stations

Table 1 Summaries of Habitat Characteristics at the Four Sampling Sites in Leech Watershed

Characteristics		Site 1			Site 2			Site 3			Site 4		
		Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.
Stream Anatomy	% Pool	5.0	30.0	15.3	5.0	20.0	10.3	5.0	30.0	19.0	0.0	30.0	10.0
	% Riffle	15.0	60.0	30.3	15.0	40.0	21.7	25.0	60.0	42.3	10.0	50.0	35.0
	% Run	10.0	70.0	54.3	50.0	80.0	68.0	25.0	60.0	38.7	30.0	75.0	55.0
Stream Characters	Bankfull width (m)	10.0	23.0	17.1	13.5	35.0	21.5	19.0	30.0	22.9	8.0	18.0	12.5
	Wetted width (m)	5.0	14.0	9.2	6.0	15.0	10.1	8.0	35.0	16.5	2.5	10.0	6.0
	Depth-Max (m)	0.6	1.8	1.3	0.5	1.8	1.4	1.0	1.8	1.5	0.2	0.9	0.6
Substrate Compositions	% mud/silt (< 0.06 mm)	0.0	3.3	0.7	0.0	1.7	0.2	0.0	1.7	0.3	0.0	1.7	0.1
	% sand (0.06-2 mm)	0.0	10.0	4.4	0.0	6.7	2.6	1.7	8.3	4.3	0.0	5.0	1.5
	% fine gravel (2-16mm)	1.7	16.7	9.1	3.3	16.7	7.2	3.3	15.0	8.7	0.0	13.3	2.2
	% coarse gravel (16-64mm)	10.0	35.0	20.3	8.3	25.0	14.8	6.7	25.0	13.1	0.0	18.3	6.4
	% cobbles (64-256mm)	21.7	46.7	33.7	33.3	76.7	51.1	33.3	53.3	40.7	0.0	73.3	47.0
	% Boulder (>256mm)	8.3	46.7	21.5	6.7	35.0	17.8	13.3	31.7	22.2	3.3	13.3	7.2
	% Bedrock	1.7	25.0	13.2	0.0	15.0	5.9	5.0	20.0	10.3	11.7	66.7	31.6
Riparian Vegetation	% Pasture	5.0	5.0	5.0	10.0	40.0	20.0	5.0	10.0	6.0	5.0	10.0	7.7
	% Scrub (< 2m)	5.0	20.0	11.7	5.0	20.0	6.0	5.0	20.0	12.3	10.0	25.0	12.7
	% trees (2-5m)	5.0	15.0	5.7	5.0	30.0	10.3	10.0	30.0	14.7	10.0	30.0	20.3
	% trees (>5m)	70.0	85.0	77.7	50.0	80.0	67.0	45.0	80.0	67.0	50.0	70.0	56.7
	Total Canopy cover (%)	40.0	95.0	70.3	10.0	30.0	20.3	20.0	70.0	35.3	5.0	40.0	18.3
	Dominant trees	Red Alder, Doug Fir			Red Alder, Maple			Red Alder			Pine, Alder, Cedar		

Notes: (Min.: Minimum, Max.: Maximum, Aver.: Average)

Figure 12 Pictures Illustrating the Difference between Wet and Dry Season at Each Leech Watershed Sampling Site

The analytical results revealed about 74 periphyton taxa, in which Chlorophyta (green algae), Cyanobacteria, and Bacillariophyta (diatoms) were the three main groups with 25, 23 and 21 taxa recorded, respectively; other groups had only 1 or 2 taxa (Figure 13).

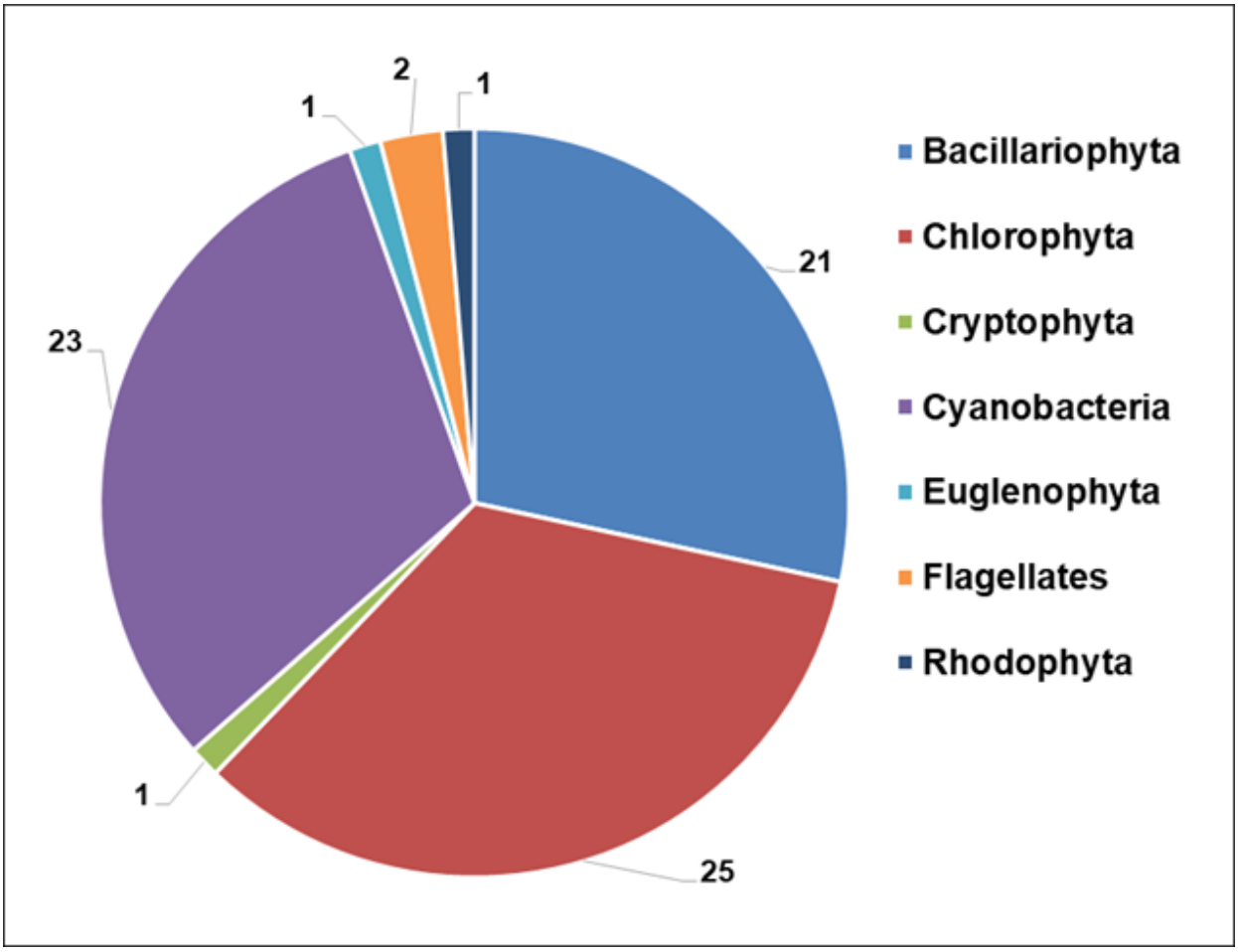


Figure 13 Taxon Composition of Periphyton in Leech Watershed from October 2019 to December 2020

Periphyton are algae that are attached to the stream substrates and unlike limnoplankton (phytoplankton in lakes), periphyton dynamics are mainly regulated by physical parameters. The data showed that the periphyton densities (NU/cm^2) in general decreased in late fall and started to increase in late winter, then peaked during the summer to early-fall period (Figure 14). While diatoms dominated at most sites, cyanobacteria and chlorophytes were the other main contributors to the total periphyton abundance (Figure 15 and Figure 16). In LWS, CRD staff observed a significant difference of periphyton density between winter and summer times, which was mainly attributable to the differing seasonal environmental conditions. For instance, in winter, the low photosynthetically active radiation (PAR), and heavy rains leading to habitat-damaging floods (e.g., strong water currents and erosion of substrates and streambeds), were likely the main factors limiting the periphyton communities. The streams of the LWS are known as very flashy (subject to fast rising levels/flooding), due to the topography and the lack of natural flow detention features. Periphyton densities at Site 4 were more consistent than at other sites, possibly because this site is located at a higher elevation and characterized by higher portions of bedrock, reducing the substrate erosion and periphyton abrasion effects of winter floods. Shallower water, or obtaining higher PAR at this site, can also support faster recovery of periphyton communities after floods.

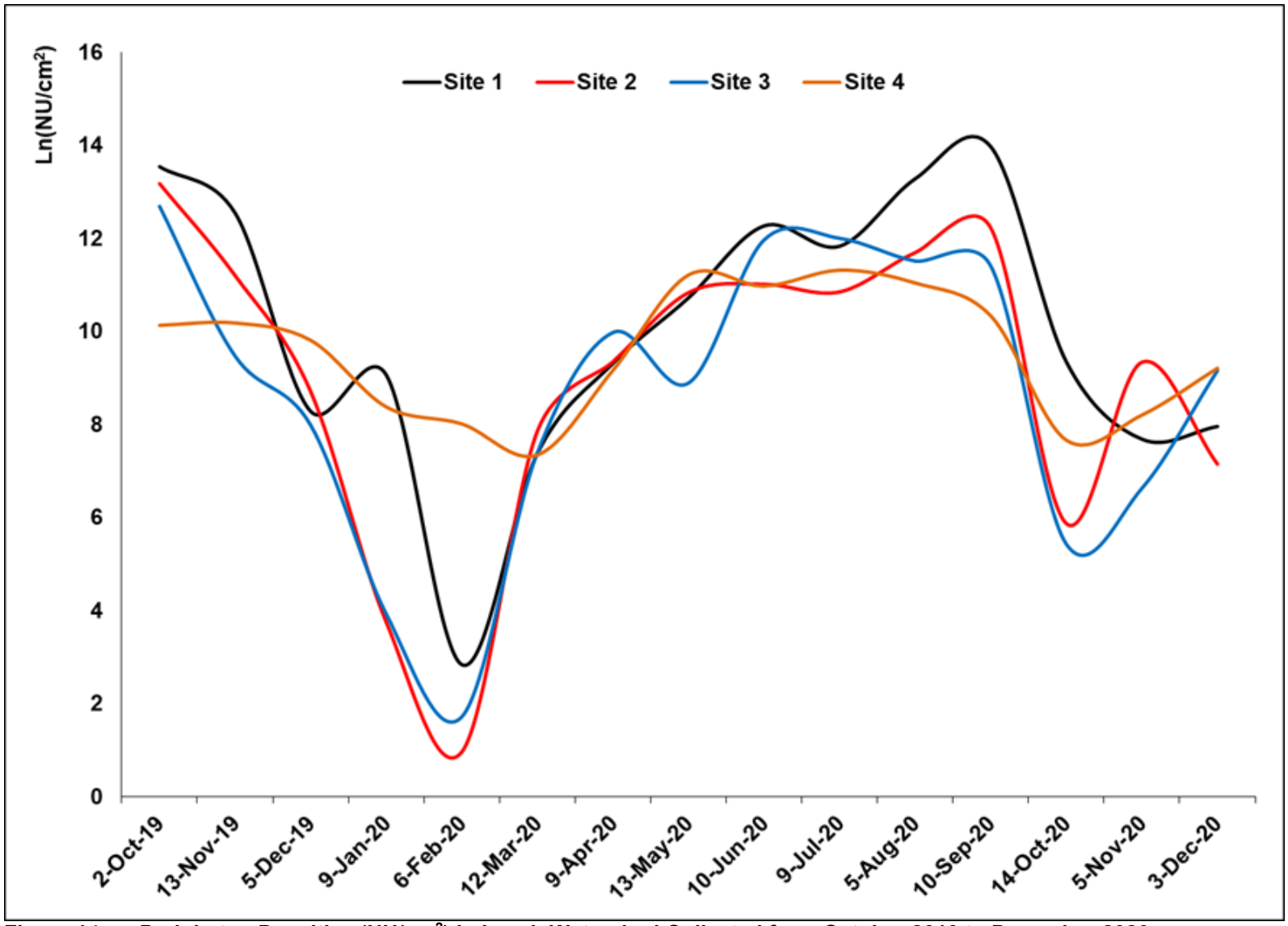
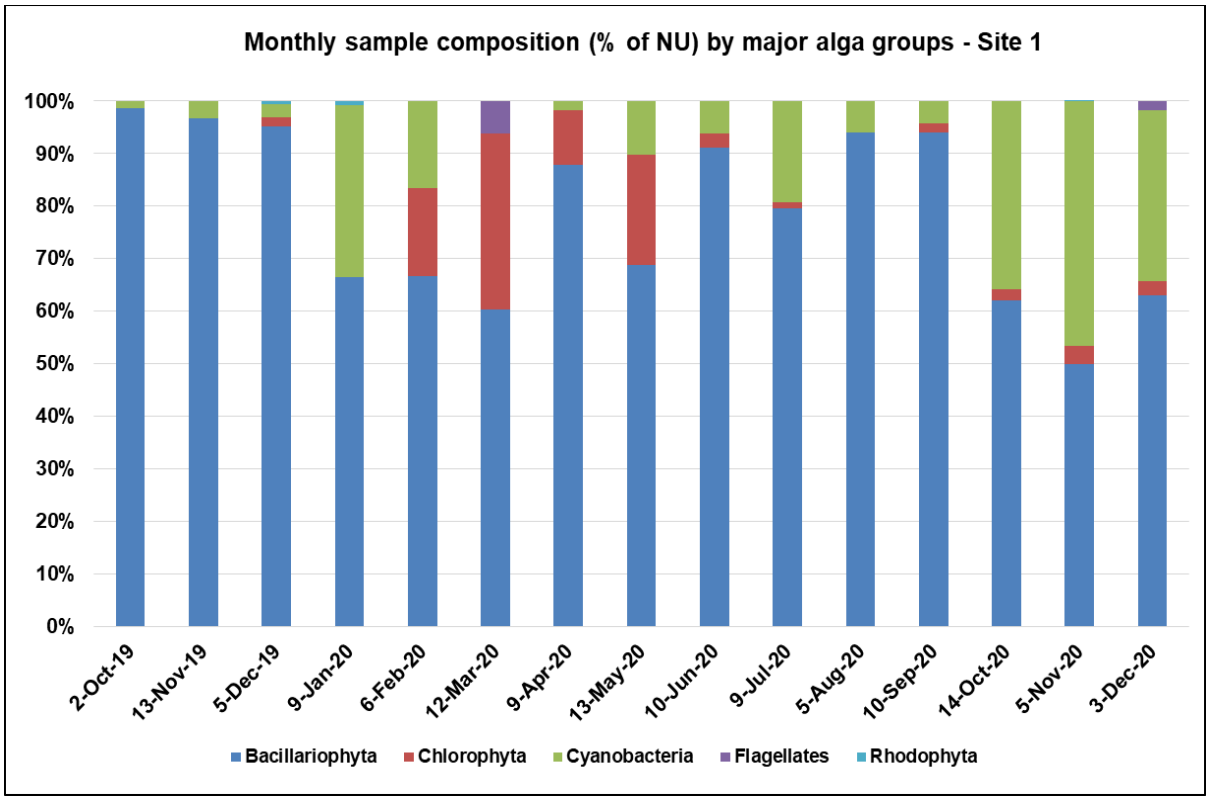


Figure 14 Periphyton Densities (NU/cm^2) in Leech Watershed Collected from October 2019 to December 2020



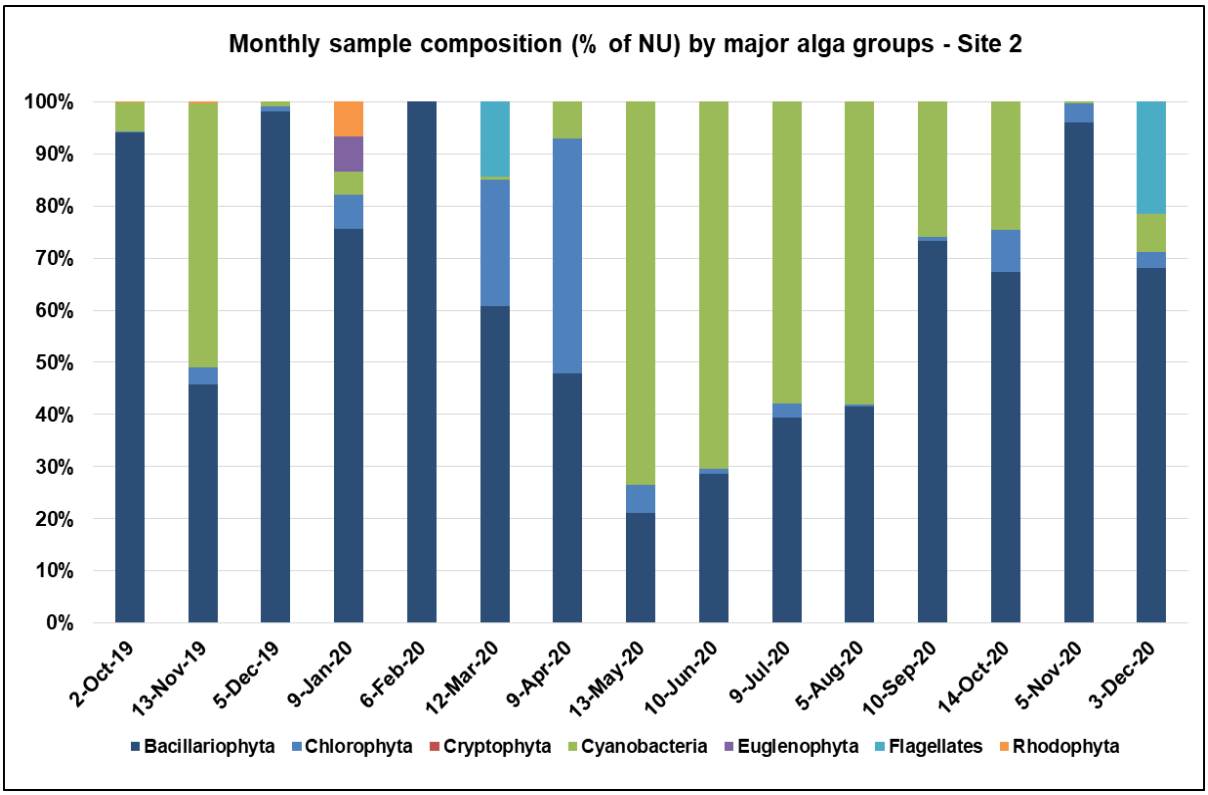
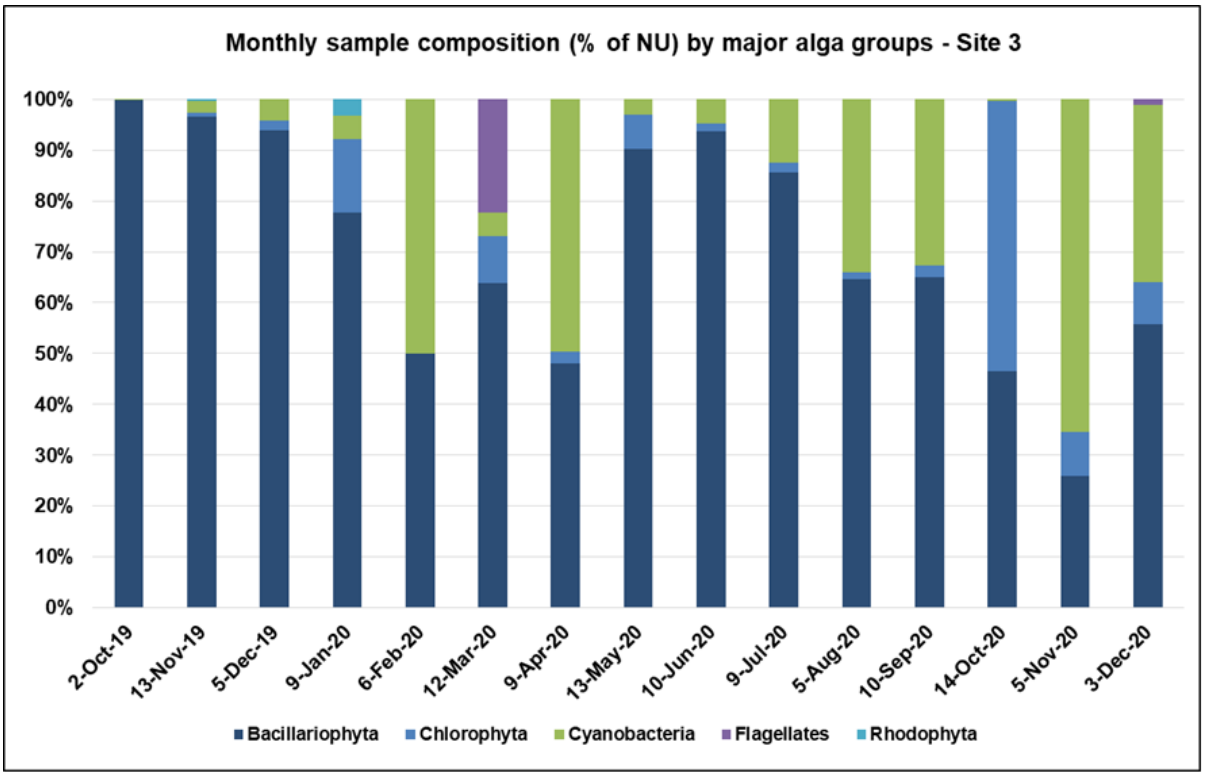


Figure 15 Monthly Sample Composition (% of Natural Unit counts - NU) by Major Alga Groups for LWS Site 1 (top) and 2 (bottom)



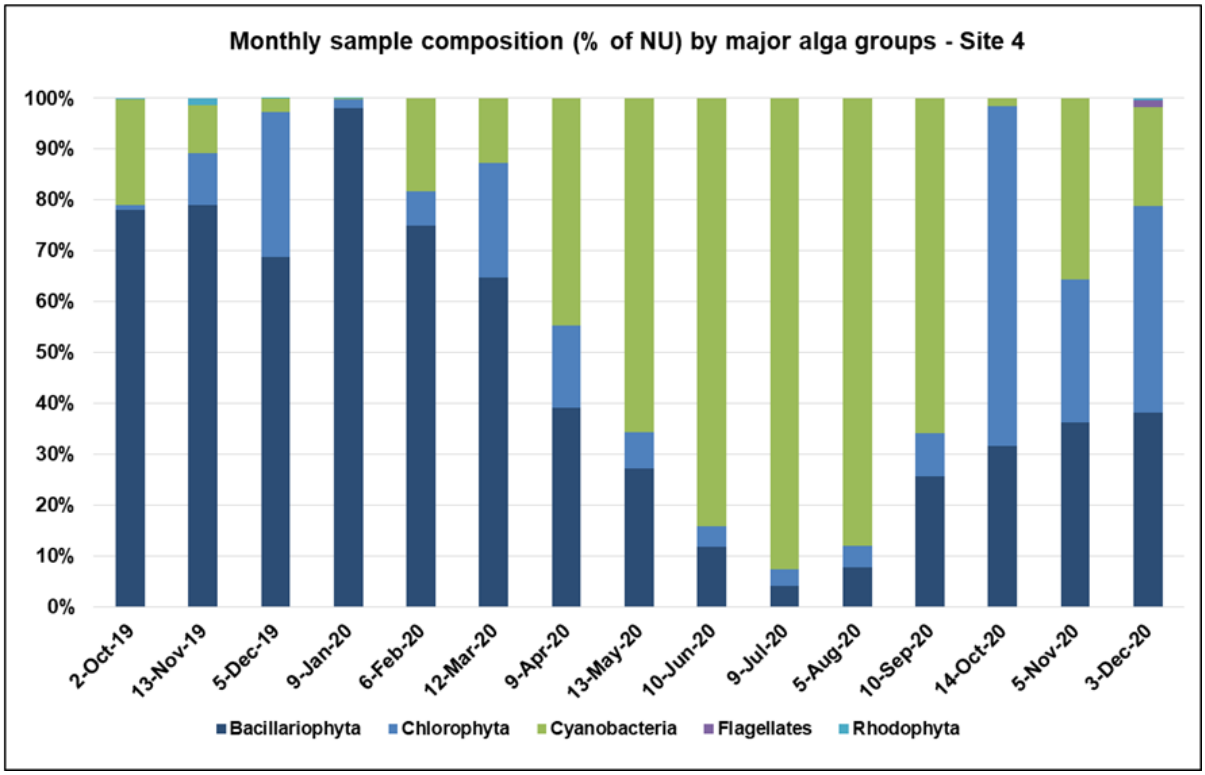


Figure 16 Monthly Sample Composition (% of Natural Unit counts - NU) by Major Alga Groups for Site 3 (top) and 4 (bottom)

In general, the percent of periphyton coverage with thickness of visible algal mats ≥1 mm was very low for most of the sites, except Site 4. The commonly observed algal mats at sites 2, 3 and 4 were mainly created by long-filamentous green algae, e.g., *Draparnaldia* sp., and/or *Klebsormidium* and/or *Zygnema* sp., mixed with cyanobacteria of *Phormidium/Lyngbya*, and diatoms of *Synedra, Cymbella,* and *Tabellaria*. Site 4 had shallow water and thin canopy coverage, which provided more favourable conditions for growth of these green algae than at the other sites. Diatoms, such as *Achnanthidium* spp., dominated over other algae at Site 1 during the year, due to the higher adaptability of diatoms to low light density and dense canopy coverage at this site. In stream systems, Nitrogen or Phosphorus or both can be limiting factors for periphyton growth. It is likely that low nutrients prevented periphyton from blooming in LWS. Other factors, such as heavy floods and grazing pressure of aquatic insects, e.g., chironomids, collectively keep periphyton at a low-growth rate.

The monitoring program also recorded some potentially toxin-producing cyanobacteria, e.g., *Anabaena, Nostoc, Limnothrix, Lyngbya, Phormidium, Oscillatoria* and *Pseudanabaena*, which grew mainly during the summer time. Their cell counts are shown in Figure 17. There was a higher density of these cyanobacteria at Site 3 than at the other sites. Algal mats of the cyanobacteria *Phormidium/Lyngbya* were observed from June to September 2020 at Site 3. A reason for this could be more favourable habitat characteristics at Site 3, such as wide wetted perimeter, moderately thin canopy coverage and more stagnant waters in small pools.

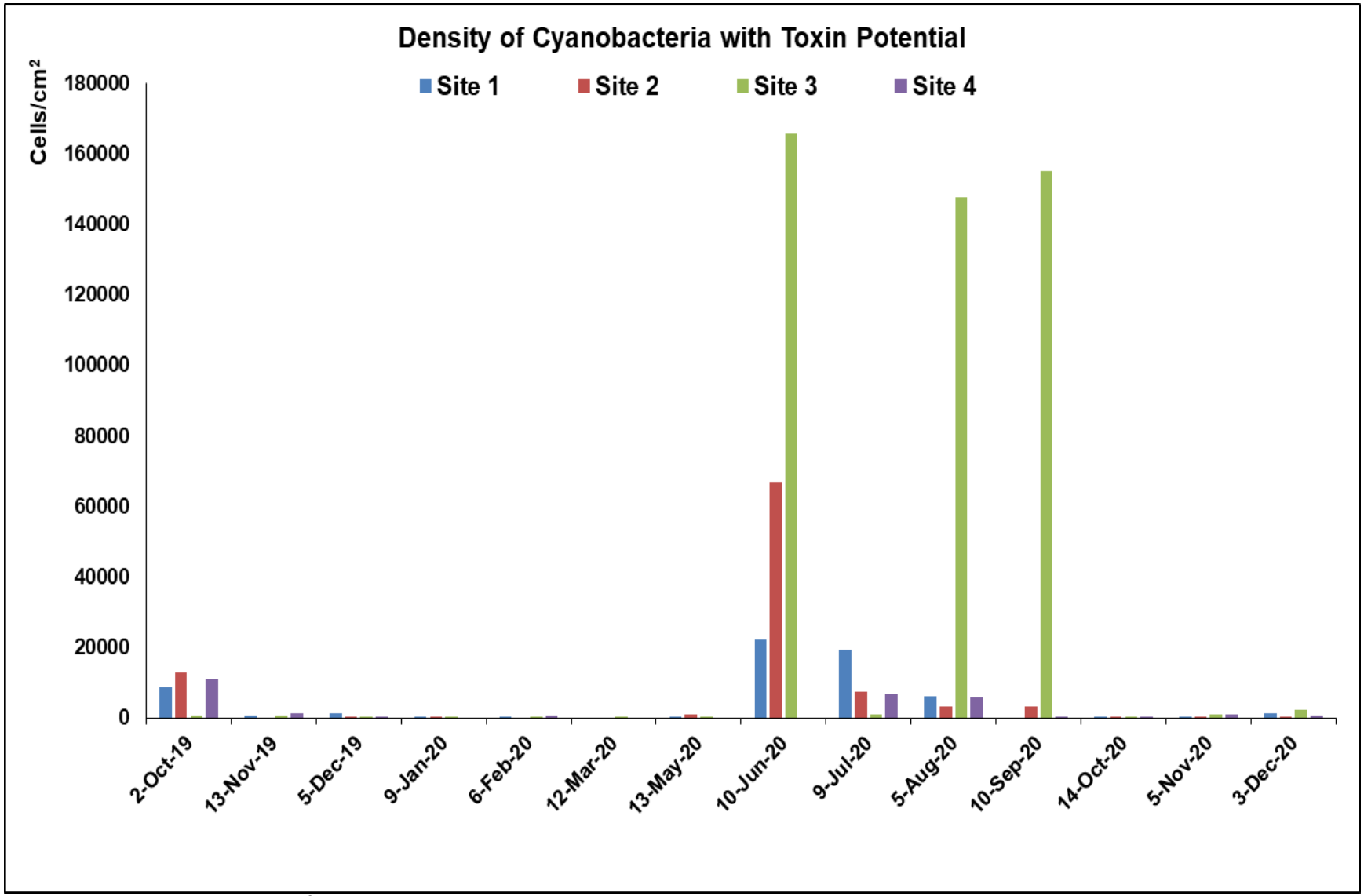


Figure 17 Density (cells/cm^2) of Cyanobacteria with Toxin Potential, at Four LWS Sites from October 2019 to December 2020

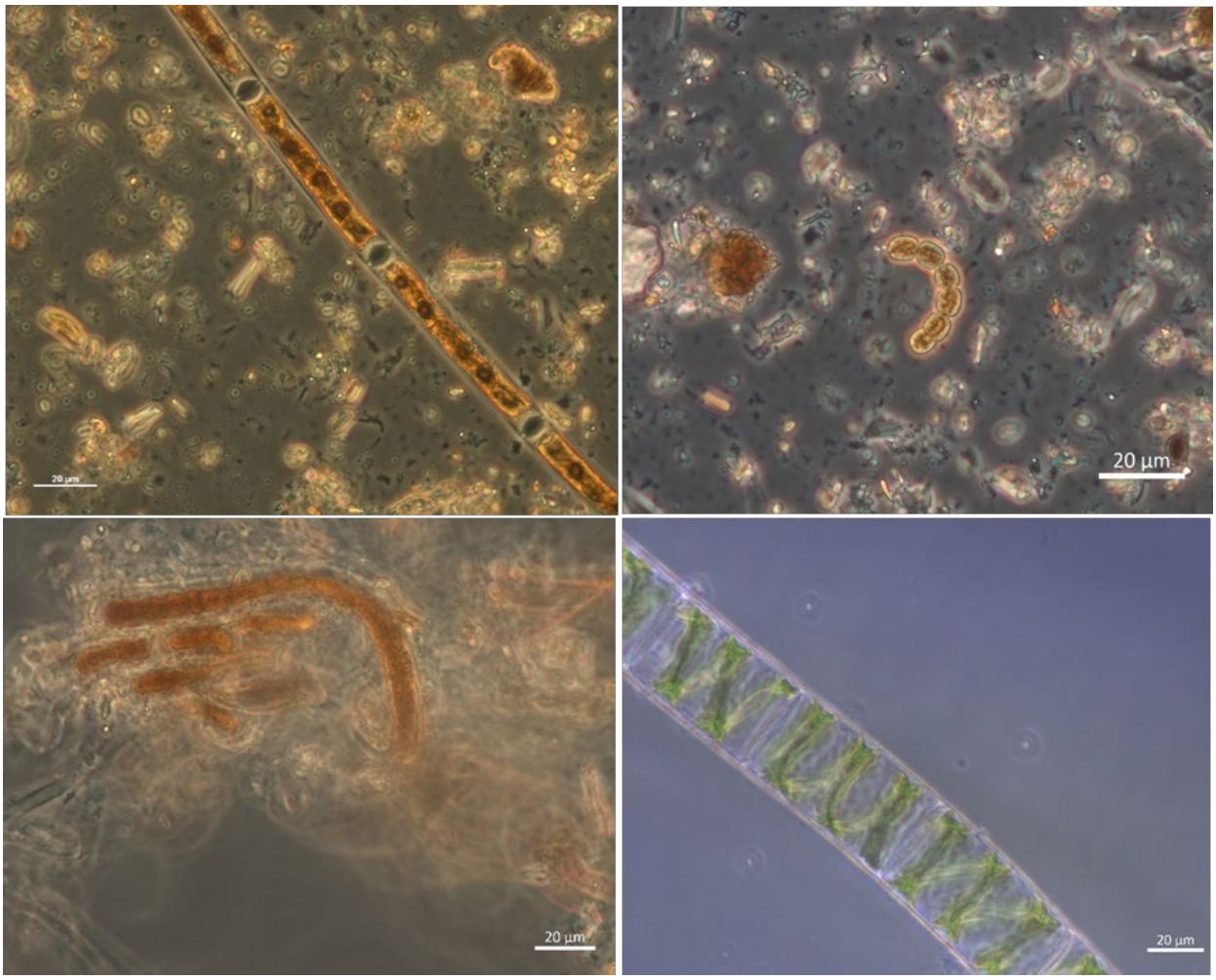


Figure 18 Some Periphyton Recorded in Leech Watershed

Notes: Green alga, *Mougeotia* sp. (top left), Cyanobacterium, *Anabaena* sp. (top right), Cyanobacterium, *Coleodesmium* sp. (bottom left), and green alga, *Spirogyra* 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 SOL 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, e.g., 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 SOL, zooplankton mainly consist of Rotifera and Copepoda, although Cladocera taxa, such as *Daphnia* spp. can be occasionally recorded. In 2020, these three main zooplankton groups were recorded in SOL. 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 in May and September 2020.

As rotifers are considered as one of the main food sources for copepods, these two groups might show opposite abundance trends. Zooplankton dynamics in SOL 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. 2020 zooplankton activity was consistent with long-term trends (figures 19-24).

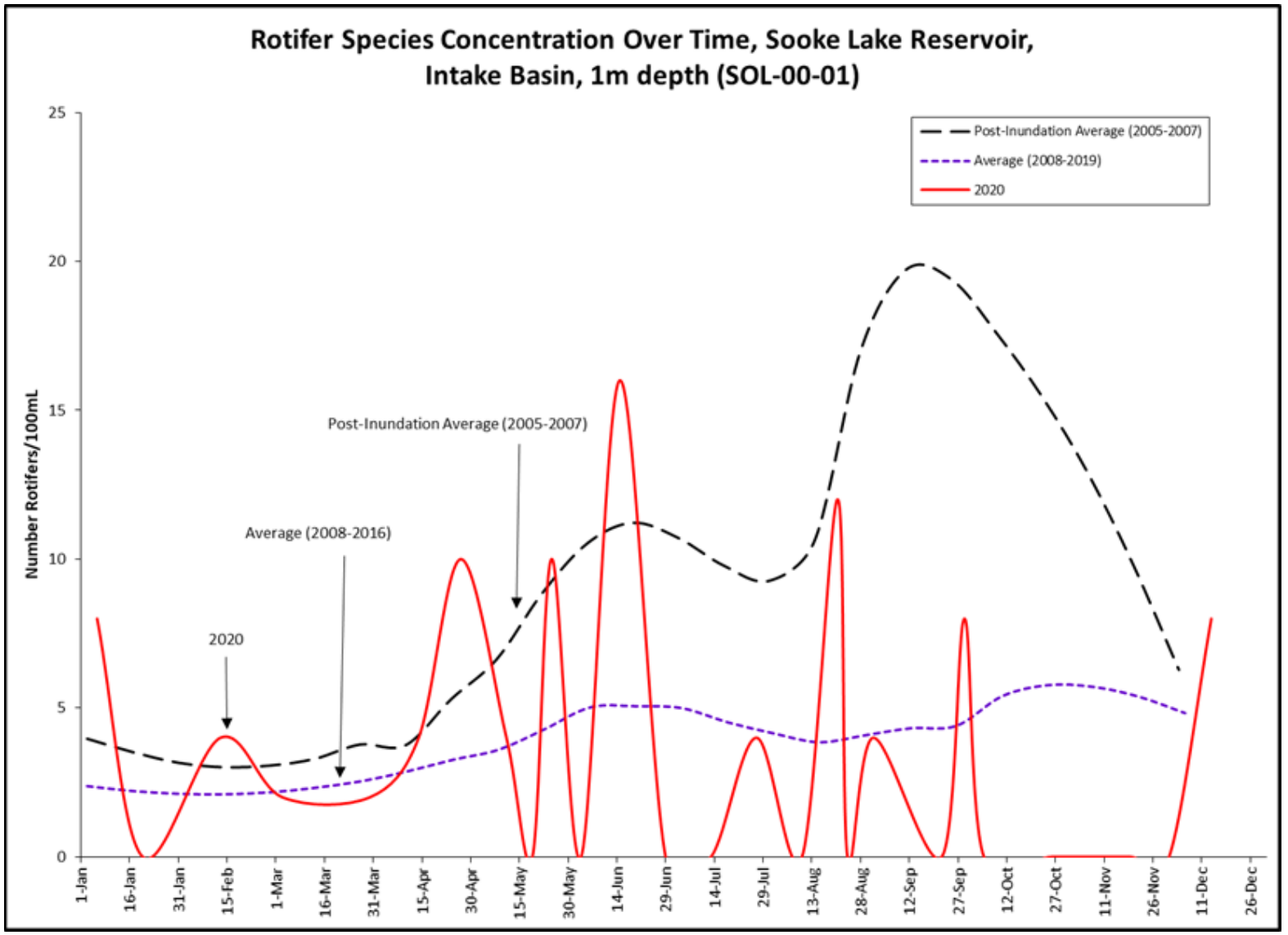


Figure 19 The Total Number of Rotifers over Time, Sooke Lake Reservoir, Intake Basin, 1 m depth (SOL-00-01)

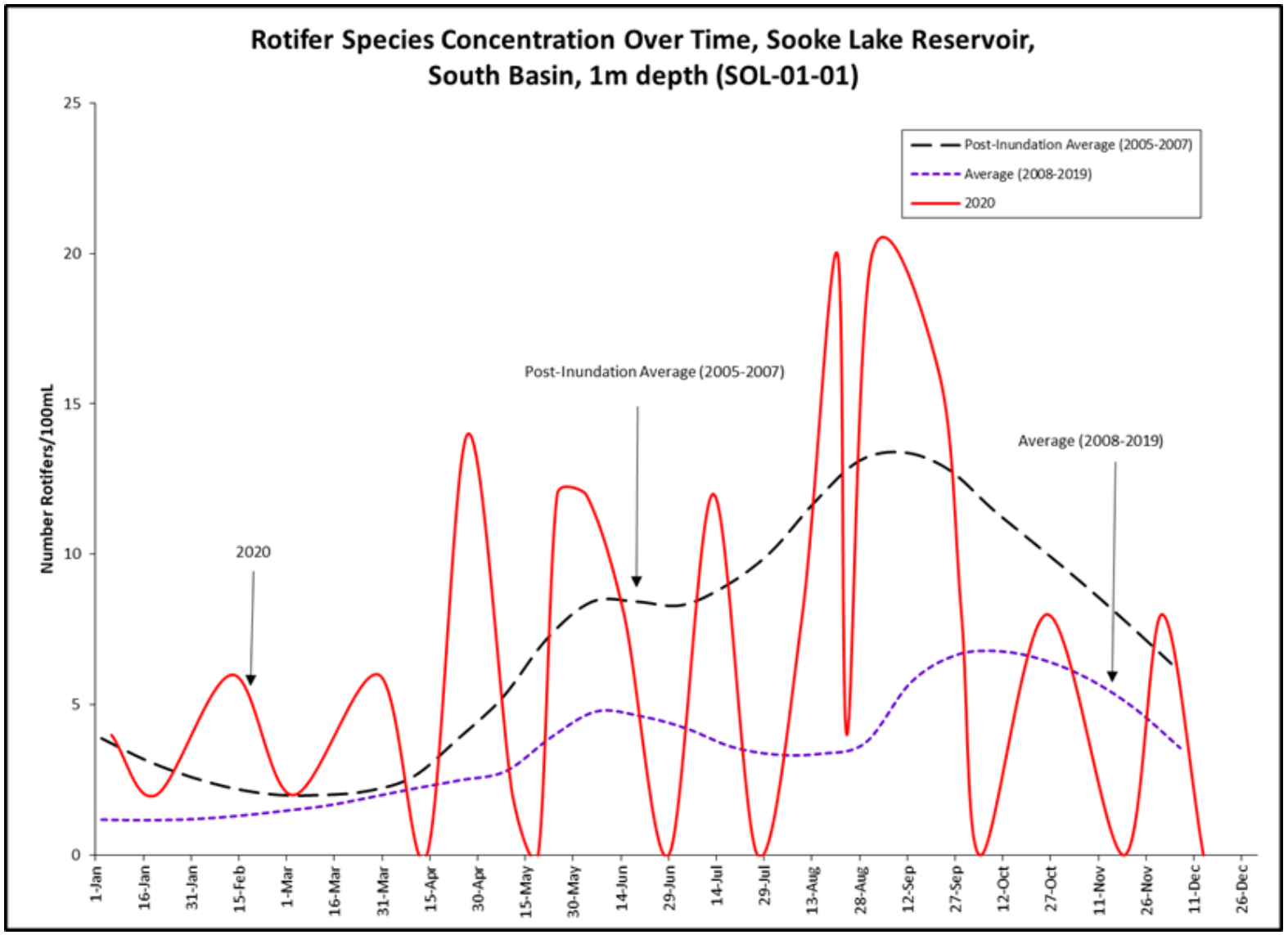


Figure 20 The Total Number of Rotifers over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

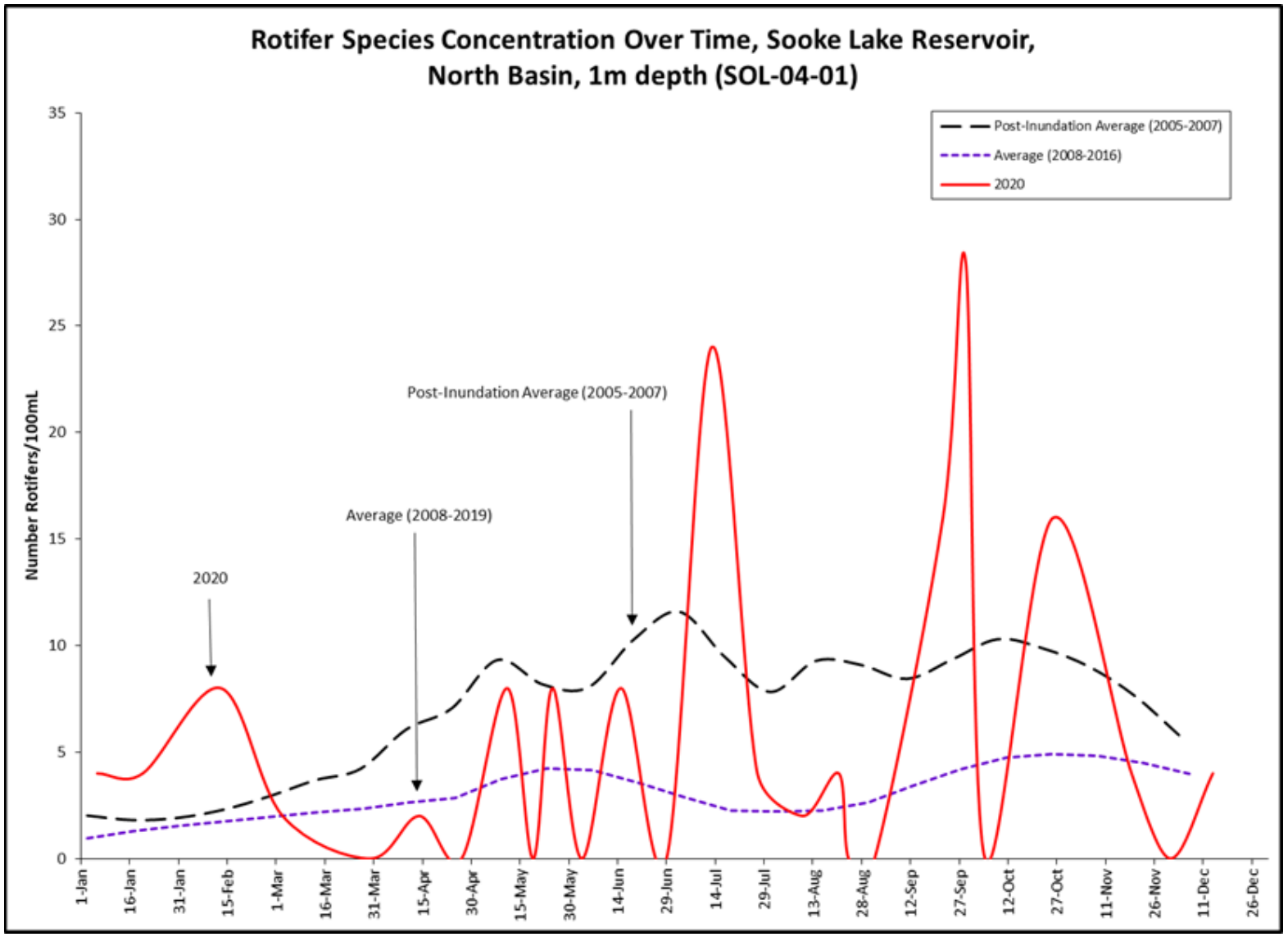


Figure 21 The Total Number of Rotifers over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

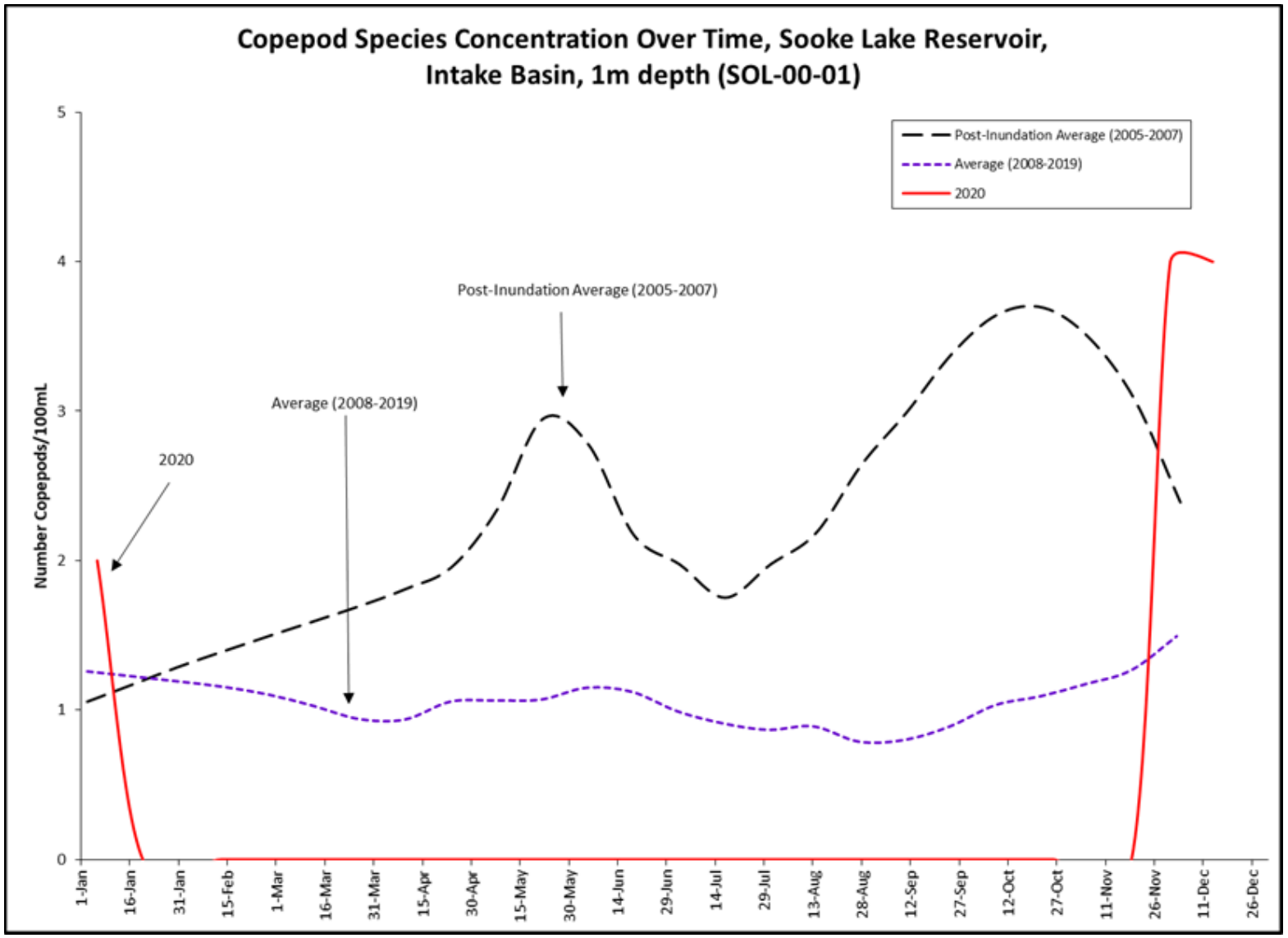


Figure 22 The Total Number of Copepods over Time, Sooke Lake Reservoir, Intake Basin, 1 m depth (SOL-00-01)

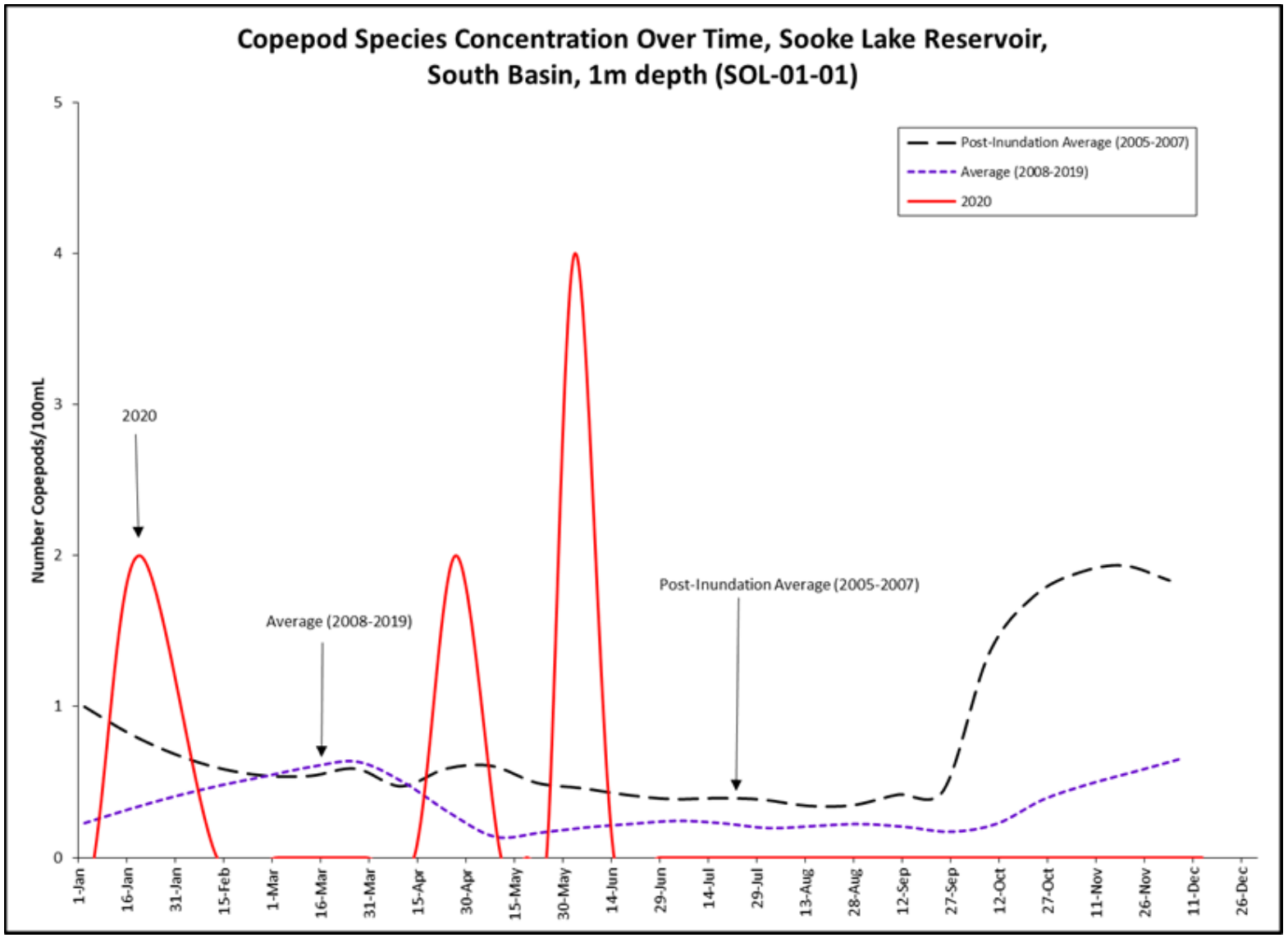


Figure 23 The Total Number of Copepods over Time, Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

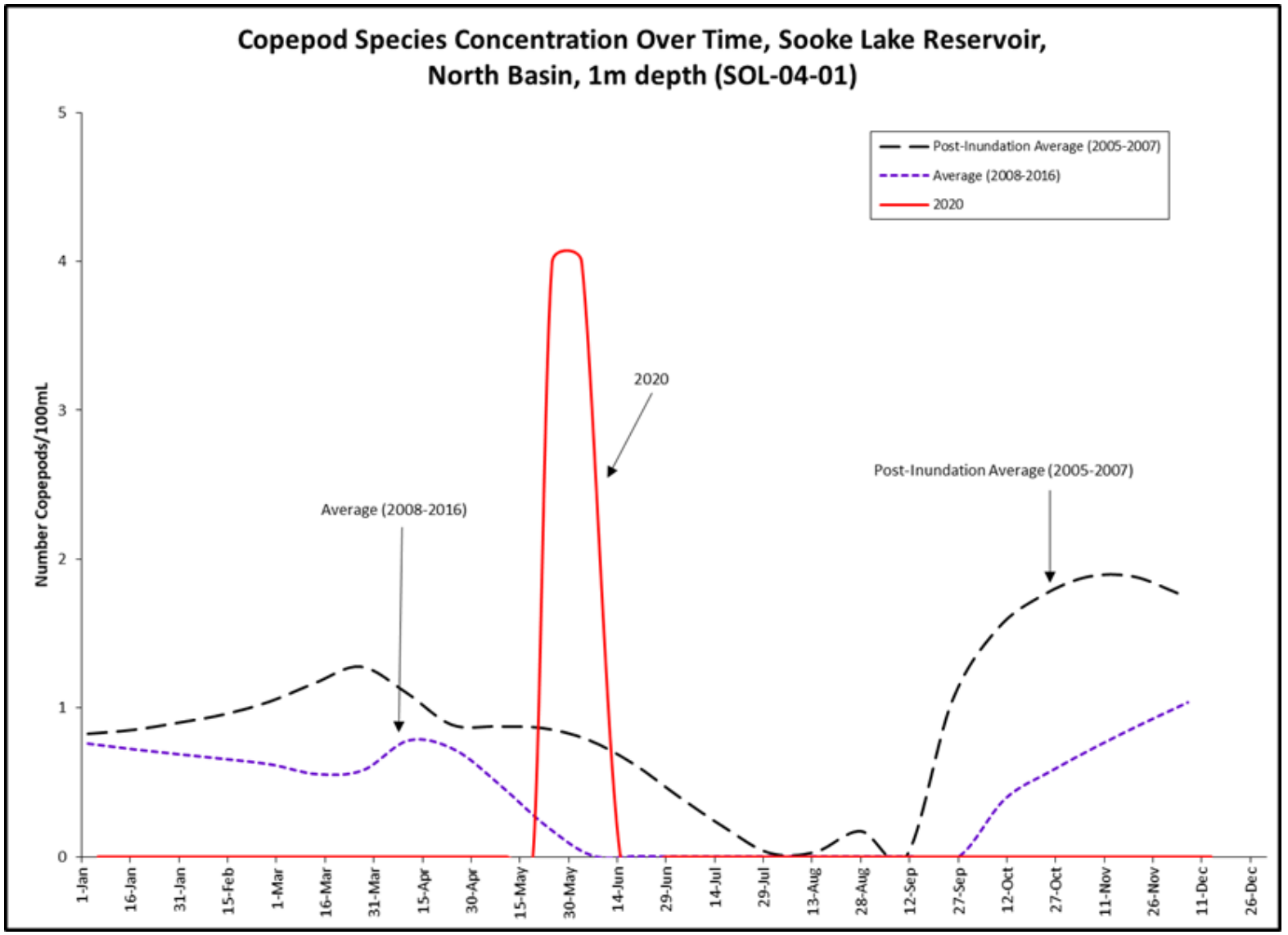


Figure 24 The Total Number of Copepods over Time, Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

Stratification: The 2019 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 2019, SOL started to stratify in early April. The South Basin remained stratified until early July when the hypolimnion was depleted due to the continuous deep water extraction. Compared to 2019, this hypolimnion depletion in the South Basin occurred about two weeks earlier in 2020, which could be a result of warmer summer temperatures and/or higher summer demand. The deeper parts of the reservoir destratified naturally in late November.

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 25 shows that the source water turbidity was well under 1 NTU throughout 2020; however, on four days during the summer season, 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 (peak at 3.1 NTU). These events usually occurred on Wednesdays or Thursdays from 4AM to approximately 10AM or 11AM 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 these turbidity event days. Also, the UV transmittance, a measure of how much ultraviolet light can pass through the water, was always around 90% during those events and the UV dose at least 60 mJ/cm^2, ensuring effective UV treatment. The CRD has taken measures to mitigate these turbidity events at the Goldstream Water Treatment Plant (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 will look at further measures to reduce or eliminate these nuisance events. Overall, Sooke Lake water was very clear in 2020, and turbidity of the raw water was at no time a factor of concern to the drinking water quality in the GVDWS.

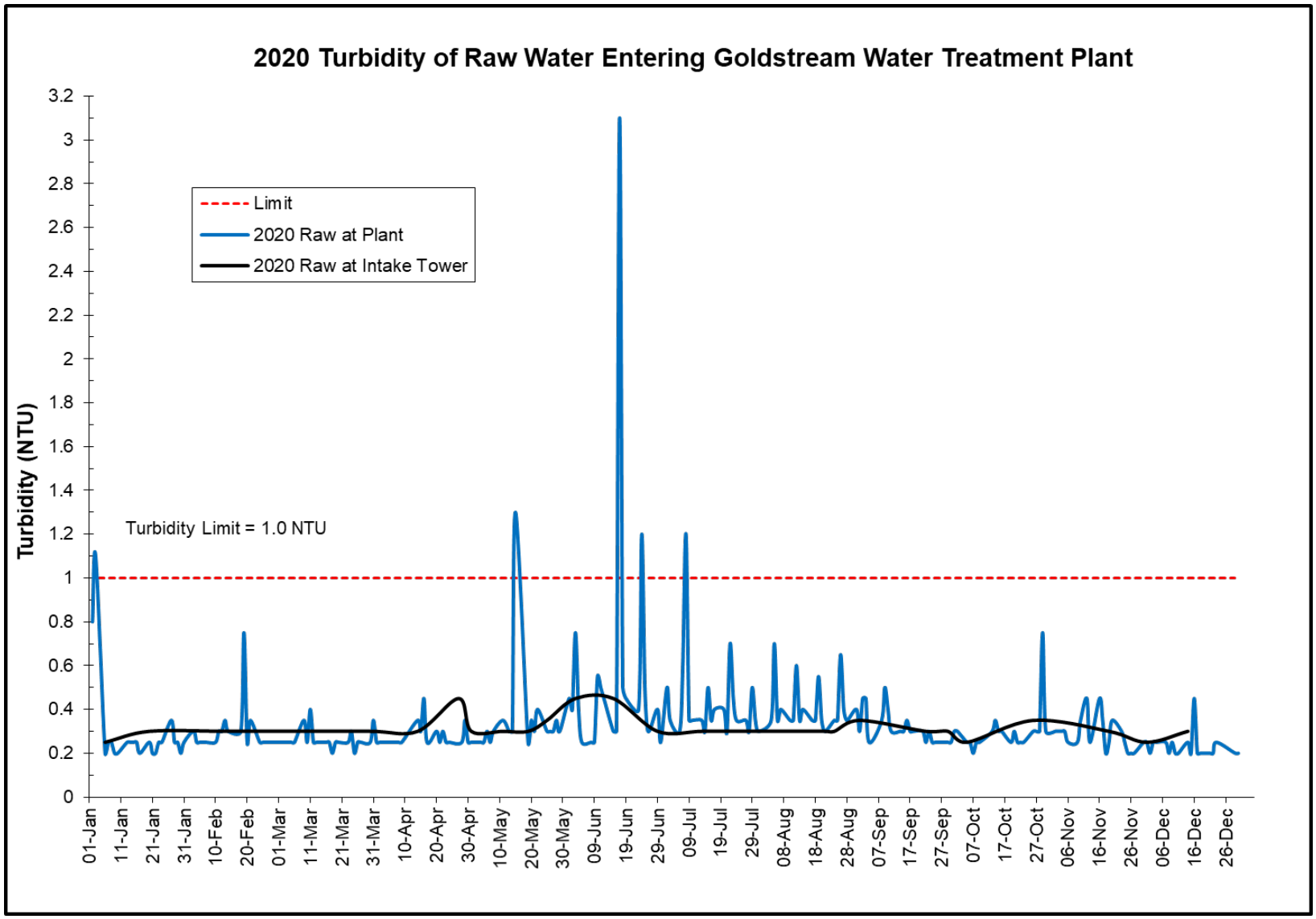


Figure 25 2020 Turbidity of Raw Water Entering Goldstream Water Treatment Plant

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 2020 was nearly following the long-term average trend line until the beginning of August. After that, for a period of two months, the temperature started to trend above the long-term average (Figure 26). The raw water entering both treatment plants exceeded the 15°C guideline limit between mid-July and mid-October. This has been the longest exceedance of the 15°C temperature threshold after 2019 already set the record for the last several years. 2020 also set a new temperature peak record since the dam raising in 2004. The weekly average raw water temperature exceeded 20.1°C for the first time in early September. Only 2017 saw the raw water temperature slightly exceed 20°C before. 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. The cool water stored in the hypolimnion of the much deeper north basin is currently inaccessible for CRD with the existing infrastructure.

High raw water temperatures are not a new problem for the CRD. Before the expansion of 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.

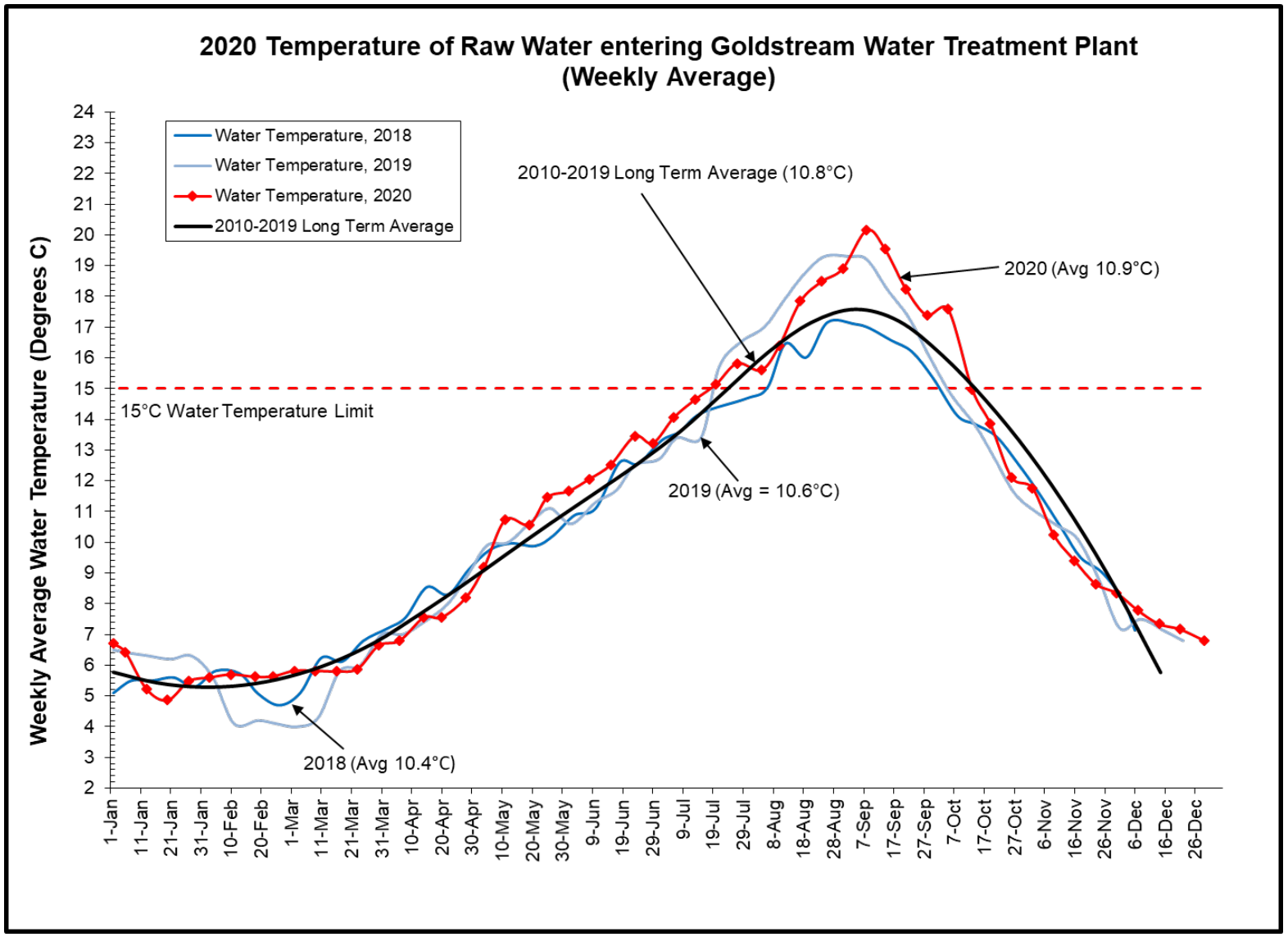


Figure 26 2020 Temperature of Raw Water Entering Goldstream Water Treatment Plant (Weekly Average)

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: 16.70 mg/L
- Median Alkalinity: 14.90 mg/L
- Median Colour: 6.0 TCU
- Median Total Organic Carbon: 1.80 mg/L
- Median Conductivity (25ºC): 42.10 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 2020. 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 2020. 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. Figures 27-30 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 below the long-term average. In the south basin, the total phosphorus concentration dropped at the end of April to levels below the detection limit of 1µg/L, which indicates that biological activity in the lake used up all available phosphorus nutrients in this part of the lake. The lack of phosphorus then severely limited the biological productivity in the lake after July, which resulted in a drastic decrease in algal activity. This crash in algal populations in July may have led to the spike in nitrogen at the end of July in the south basin when decomposing algal matter may have released nitrogen nutrients for further uptake. Spikes in nitrogen are usually attributable to significant rainfall and runoff events during that time; however, this spike was not induced by any rainfall event. Aside from this spike, the total nitrogen fluctuated only slightly above the long-term average trend line.

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

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.

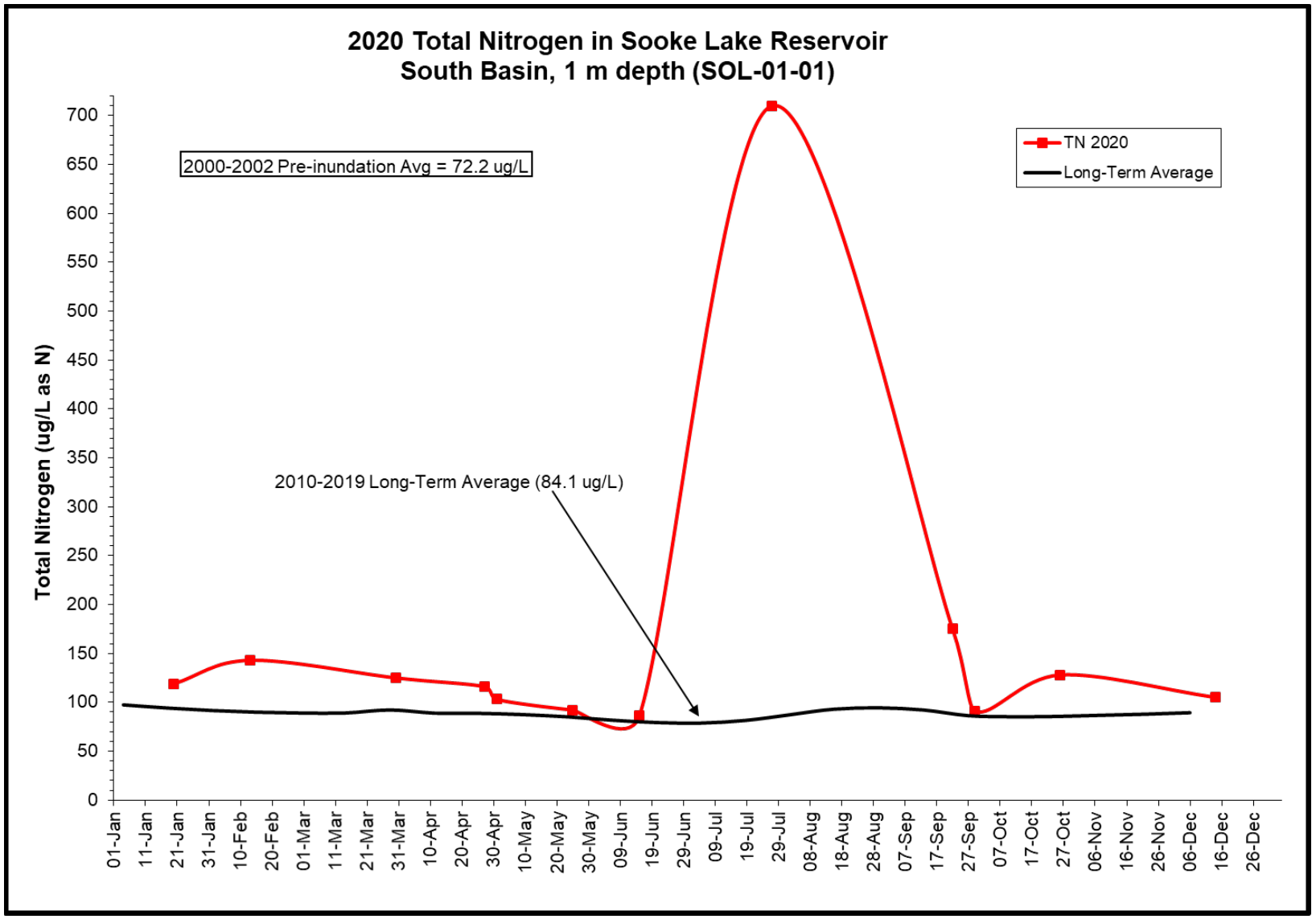


Figure 27 Total Nitrogen in Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

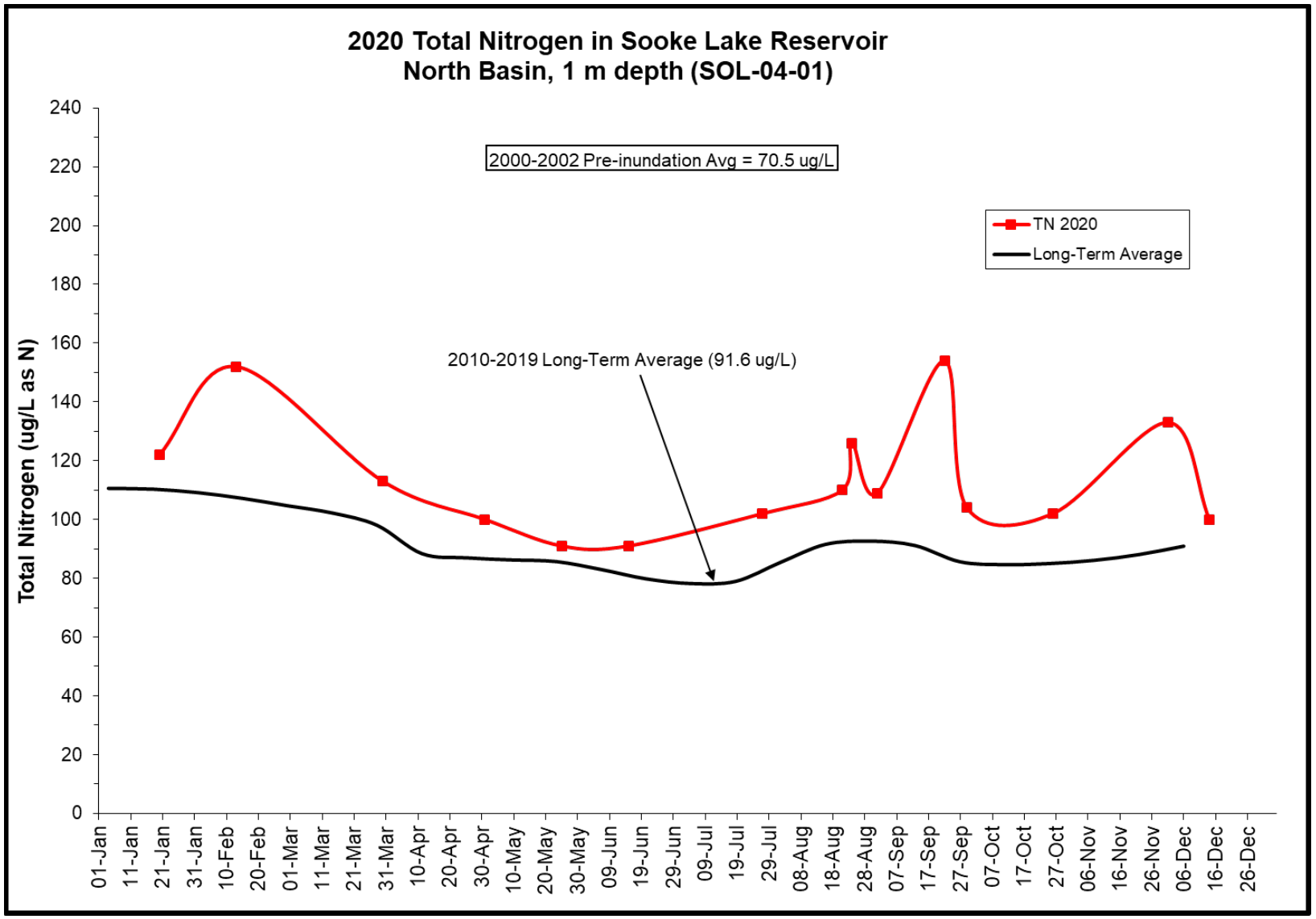


Figure 28 Total Nitrogen in Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

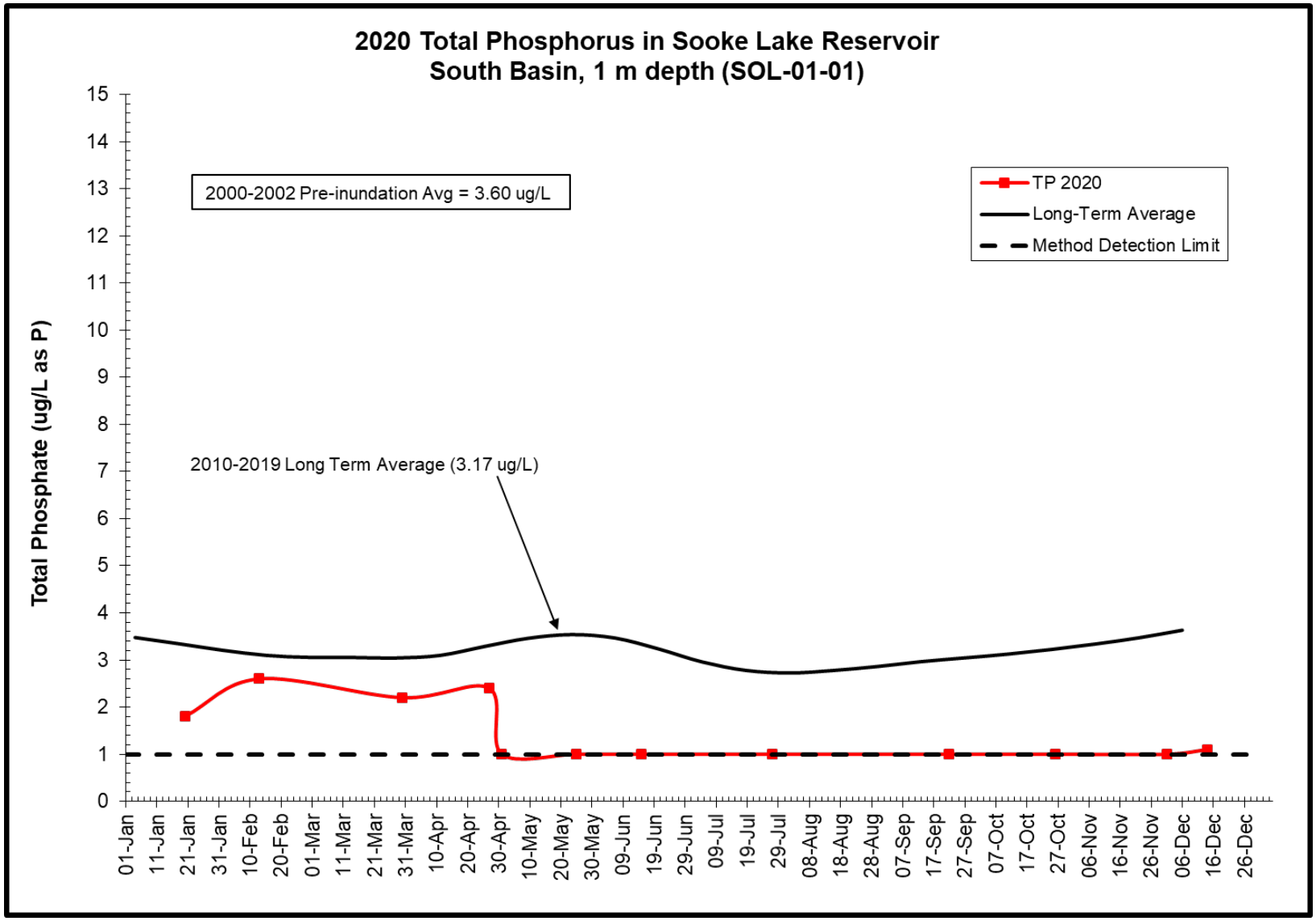


Figure 29 Total Phosphorus in Sooke Lake Reservoir, South Basin, 1 m depth (SOL-01-01)

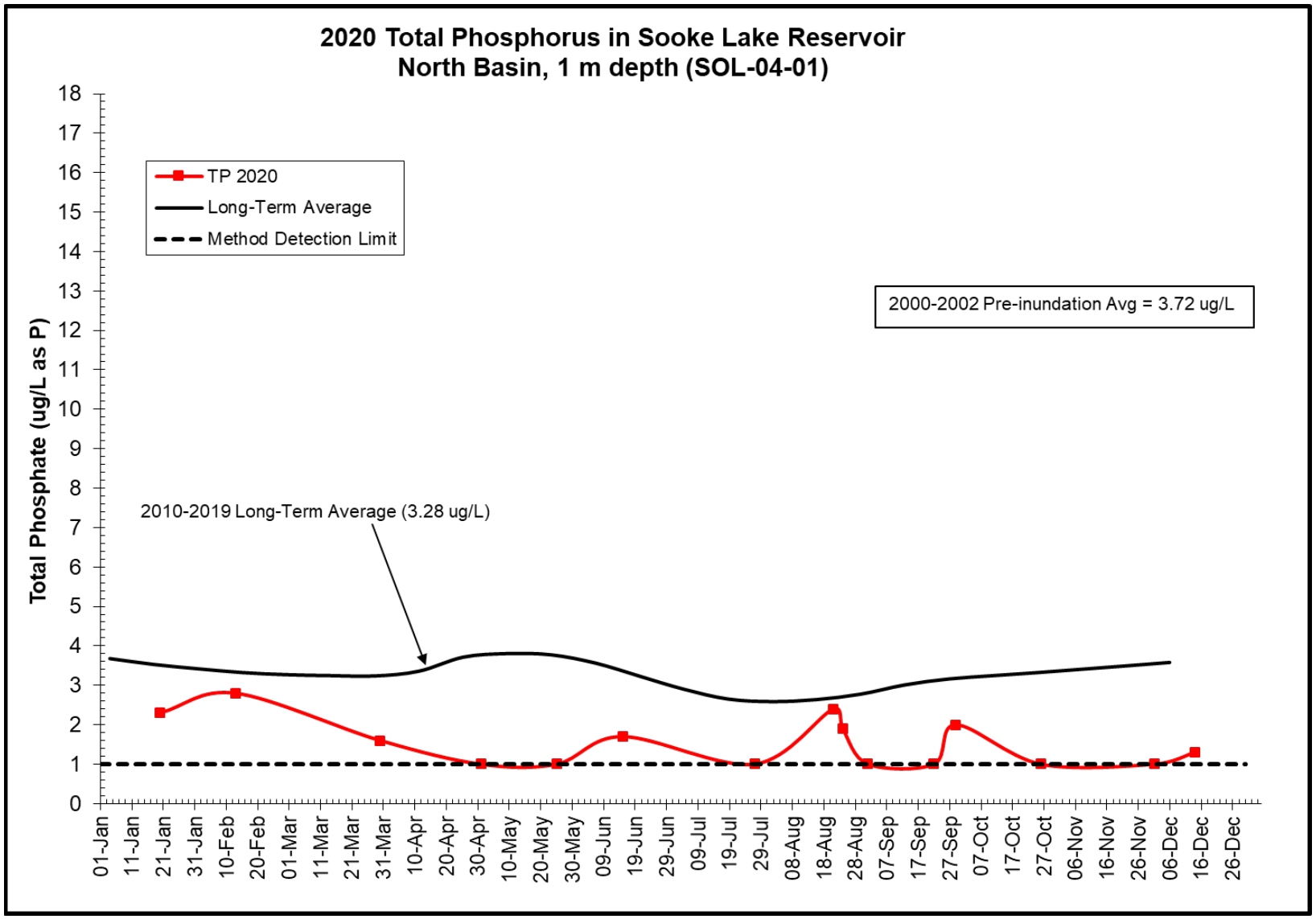


Figure 30 Total Phosphorus in Sooke Lake Reservoir, North Basin, 1 m depth (SOL-04-01)

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 31 shows the results from 245 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, in all of 2020, and only in very low concentrations, have total coliform bacteria been found downstream of the UV treatment. Most of these low concentration hits were during May and June when the raw water total coliform concentrations started to increase.

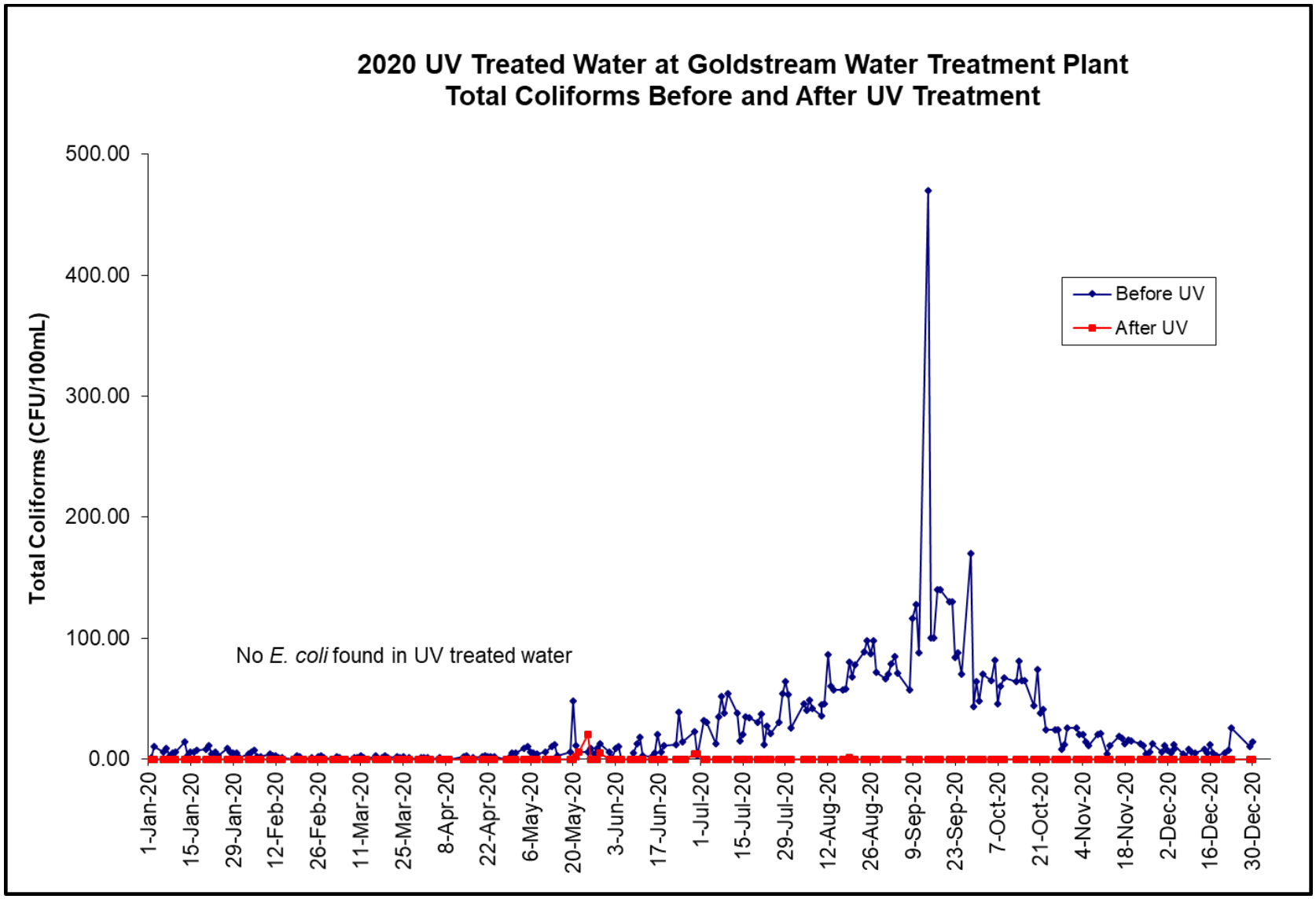


Figure 31 2020 UV Treated Water at Goldstream Water Treatment Plant Total Coliforms Before and After UV Treatment

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 2020 (Figure 32 and Appendix A, Table 2). In total, 246 samples were collected from the Main #4 first customer location and 211 samples from the Main #5 first customer location for a combined total of 457 samples.

There were a few total coliform-positive samples from each sampling station throughout the year. All eight positive samples registered at the Main #5 first customer sampling station. All but one were only very low total coliform concentrations. On May 21, 2020, a total coliform concentration of 32 CFU/100 mL was recorded. Because the parallel Main #4 first customer sampling station did not record any total coliform concentrations, a treatment breakthrough could be ruled out. The resample from May 22, 2020 was free of any total coliform bacteria. For all eight positive results, only one subsequent resample was positive for total coliform bacteria. The resample, following a positive total coliform hit of 3 CFU/100 mL on November 13, 2020, recorded 2 CFU/100mL. Follow-up investigations into this case found that debris had lodged in the sampling line near the sampling tap. The debris was removed, the sampling line thoroughly flushed and all subsequent results from this station (Main #5 first customer location) were negative for total coliform bacteria.

The few total coliform-positive results remained well under 10% of the monthly totals at both first customer locations. One of the positive results, the sample from May 21, 2020, was in exceedance of the 10 CFU/100 mL total coliform limit, as per *Drinking Water Protection Regulation*. But, the investigations and a negative resample 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 1.23-2.1 mg/L (Appendix A, Table 2) with a median value of 1.79 mg/L (Figure 25).

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

- Median pH: 7.1
- Median Alkalinity: 13.10 mg/L
- Median Colour: 4.0 TCU
- Median Total Organic Carbon: 1.65 mg/L
- Median Conductivity (25ºC): 45.15 µS/cm
- Median turbidity: 0.3 NTU

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

The median pH of 7.10 is consistent with historical data, with the gas chlorine plant in operation. This median pH is, however, lower compared to 2018 and 2019 when the new hypochlorite (liquid chlorine) plant operated.

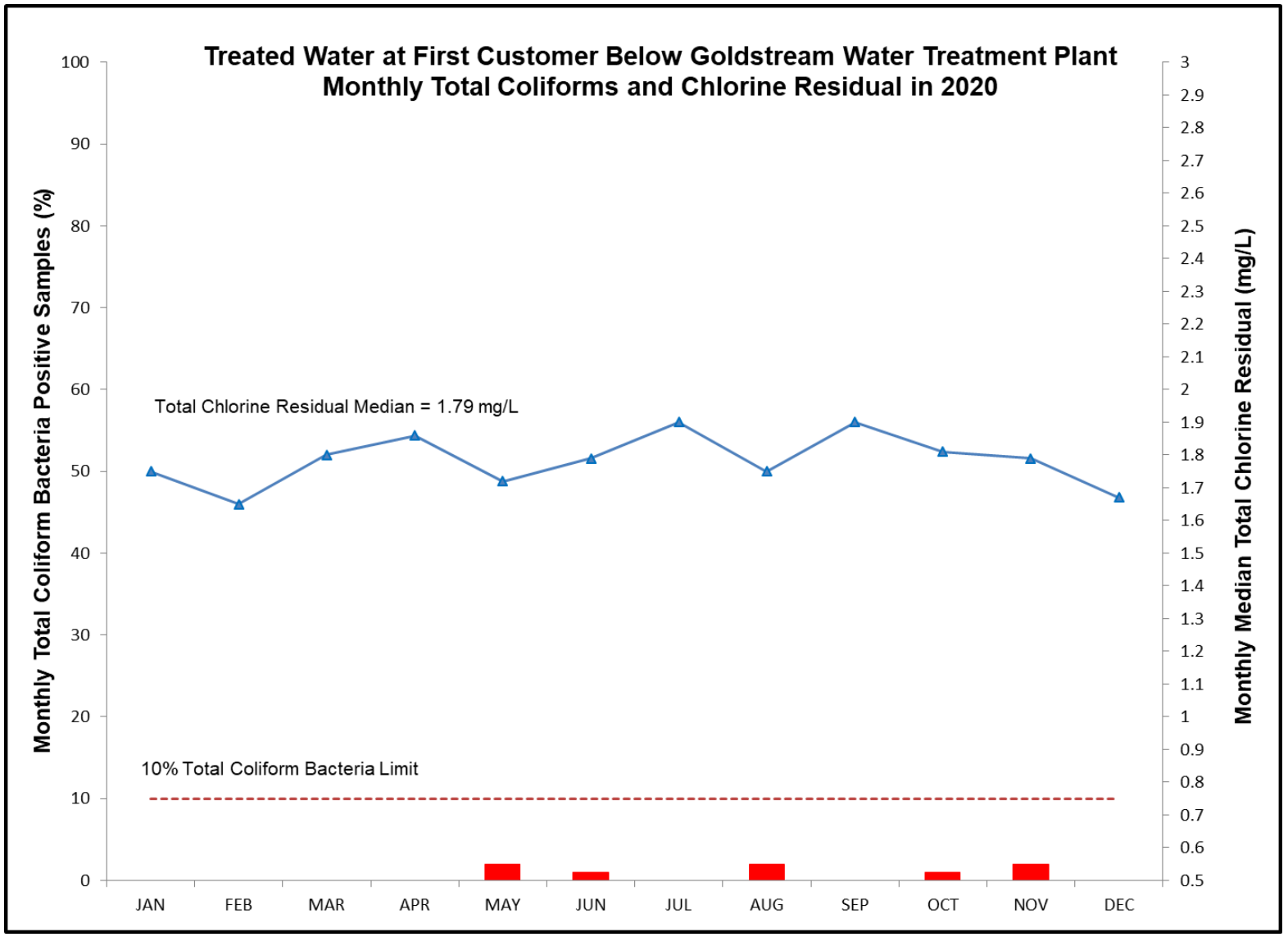


Figure 32 **Treated Water at First Customer Location below Goldstream Water Treatment Plant; Monthly Total Coliforms and Chlorine Residual in 2020**

7.2.2 Sooke River Road Water Treatment Plant

Bacteriological Results after UV Treatment. Figure 33 shows the results from 40 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. No total coliform bacteria were detected downstream of the UV treatment. This is evidence of a very effective UV disinfection stage at this plant.

Turbidity. The Sooke River Road Water Treatment Plant experienced four adverse turbidity events in 2020.

January 18-20, 2020: A major water main break caused very high flows in Main #15 supplying the plant. These extreme flows mobilized sediments in the raw water main and caused several turbidity excursions at the plant. Some of the excursions were very short and some lasted for several hours. At its peak, the turbidity reached 3.3 NTU, but in general the turbidity remained well under 3 NTU and usually just over 1 NTU with periods below 1 NTU for the course of two days. In response, the CRD increased UV dosage and chlorine dosage to compensate for any disinfection reduction, due to increased turbidity. Island Health was notified throughout this event.

March 12, 2020: A sudden turbidity spike at the plant that lasted about 70 minutes. The peak turbidity was not captured at the turbidity analyzer, as the instrument clogged up during this event. It is suspected that the turbidity was briefly much higher than 4 NTU. The cause of this event is unknown. It is assumed that large pieces of debris moved down Main #5 and caused this excursion. Island Health was notified of this event.

September 16, 2020: A sudden turbidity spike at the plant that lasted only about 7 minutes. The peak turbidity reached 7.5 NTU. The cause of this event is unknown. It is assumed that large pieces of debris moved down Main #5 and caused this excursion. In response to this event, secondary turbidity analyzers were installed at the Sooke River Road Water Treatment Plant and at the Goldstream Water Treatment Plant.

November 8, 2020: A sudden turbidity spike at the plant that lasted only about 75 minutes. The peak turbidity reached 6.2 NTU and the turbidity remained >3 NTU for a duration of 15 minutes. The cause of this event was determined to be high flows through the raw water Main #10 between the Sooke Lake intake and the Head Tank. Due to the decommissioned intake screen and the use of the old intake, only Main #10 conveyed the raw water to the Head Tank and Main #15 to Sooke. The parallel pipe to Main #10, Main #11, was out of service and this hydraulic bottle neck resulted in unusually high flow velocities in Main #15. This stirred up pipe sediments that travelled through Main #15 to the Sooke River Road Water Treatment Plant. The Goldstream Water Treatment Plant did not suffer the same turbidity excursion, because the stirred up sediments settled in the Head Tank and the Kapoor Tunnel before they could reach the Goldstream plant. CRD has since implemented procedures to limit the use of only one raw water main between intake and Head Tank and to thoroughly flush and clean these mains before any single use. Island Health was notified of this event.

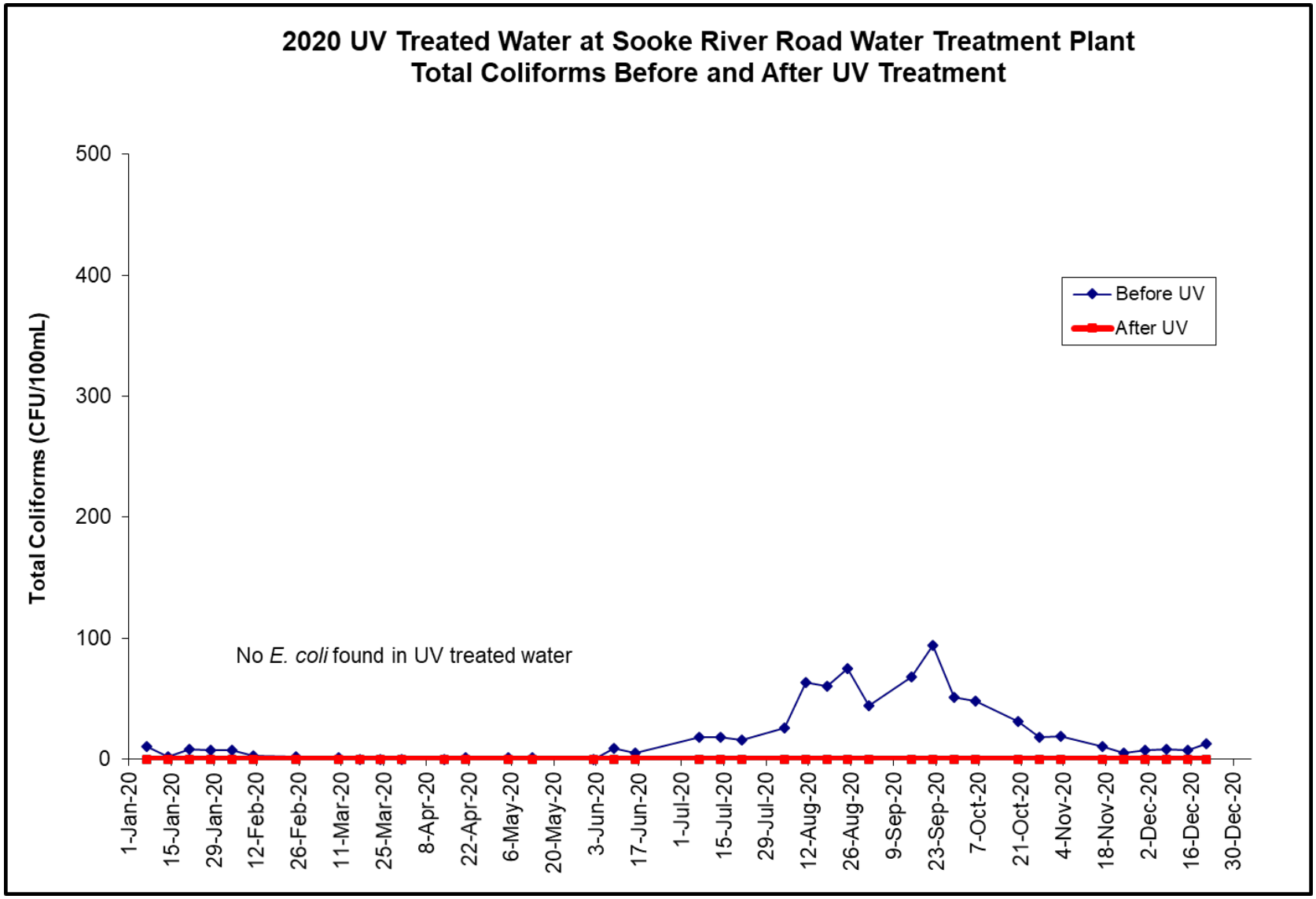


Figure 33 2020 UV Treated Water at Sooke River Road Water Treatment Plant Total Coliforms Before and After UV Treatment

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 2020 (Figure 34). No total coliform bacteria were detected in all 40 samples from this sampling station in 2020.

The total chlorine residual ranged from 1.55-2.10 mg/L with a median value of 1.79 mg/L.

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

- Median pH: 7.65
- Median Alkalinity: 16.50 mg/L
- Median Colour: 4.0 TCU
- Median Conductivity (25ºC): 57.00 µS/cm
- Median turbidity: 0.3 NTU

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

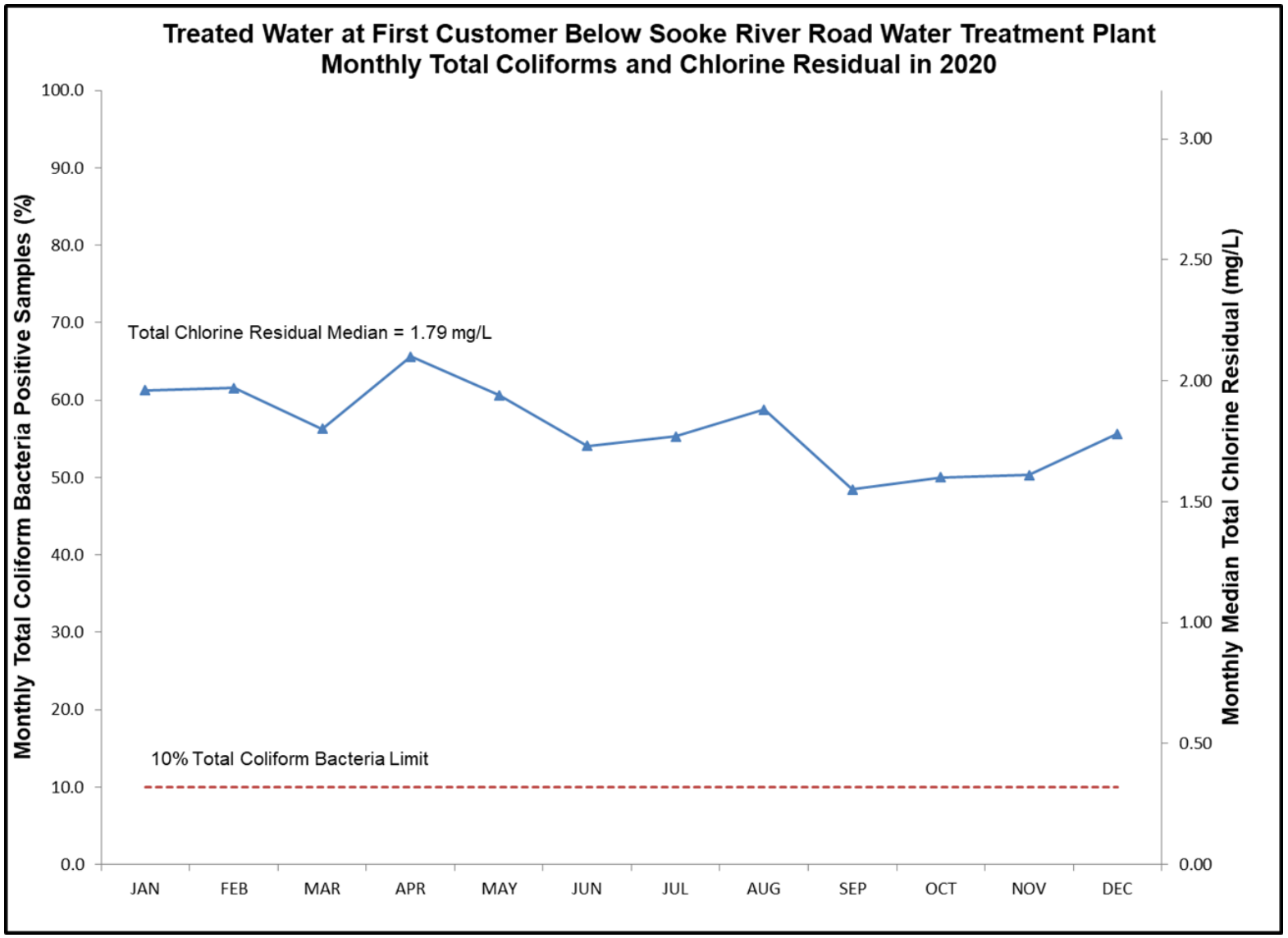


Figure 34 **Treated Water at First Customer below Sooke Rover Road Water Treatment Plant, Monthly Total Coliforms and Chlorine Residual in 2020**

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 20 different sampling locations. The sampling locations for CRD transmission mains also include the Main #4 and Main #5 first customer sampling stations. In 2020, a total of 913 bacteriological and 453 water chemistry samples were collected and analyzed.

Bacteriological Results. Figure 35 and Table 2 show the results from 913 CRD transmission main samples collected and analyzed in 2020. 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, except for August, when eight samples in total tested positive for total coliform bacteria (=10.1%). Three samples in May, July and August exceeded the 10 CFU/100 mL total coliform concentration threshold. Resamples for all three events were negative for total coliform bacteria. The only positive resample occurred in November at the Main #5 first customer sampling station (for details see Section 7.2.1).

Chlorine Residual. Table 2 and Figure 35 demonstrate that the annual median total chlorine concentration in the transmission mains was 1.67 mg/L and, therefore, provides for adequate secondary disinfection within the transmission system and within most areas of the downstream municipal distribution systems.

Water Temperature. The annual median water temperature in the transmission mains was 10.7°C, with monthly medians ranging between 5.9°C (February) and 19.2°C (September) (Table 2). Both the lowest and the highest monthly mean temperature was approximately 1°C warmer than in 2019, indicating both a warmer winter and summer in 2020.

Table 2 2020 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	Median mg/L as	Median ° C
JAN	82	0	0.0	0	0	0	21	0	1.67	6.3
FEB	68	0	0.0	0	0	0	19	0	1.73	5.9
MAR	83	0	0.0	0	0	0	21	0	1.70	6.3
APR	77	0	0.0	0	0	0	19	1	1.68	8.0
MAY	74	2	2.7	0	1	0	19	0	1.68	11.1
JUN	78	2	2.6	0	0	0	25	4	1.67	12.8
JUL	74	3	4.1	0	1	0	20	0	1.70	15.3
AUG	79	8	10.1	0	1	0	18	0	1.66	18.3
SEP	84	0	0.0	0	0	0	21	0	1.64	19.2
OCT	68	2	2.9	0	0	0	17	0	1.67	14.6
NOV	75	4	5.3	1	0	0	16	0	1.69	10.0
DEC	71	0	0.0	0	0	0	18	0	1.66	7.9
Total:	913	21	2.3	1	3	0	234	5	1.67	10.7

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = 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 18.3 and 19.5 µg/L, respectively, well below the MAC (TTHM = 100 and HAA = 80 µg/L) stipulated in the Canadian guidelines. This 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 2.1 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 limits. In one location (Lansdowne and Foul Bay roads), where water flows from Main #3 into the Oak Bay Distribution System, elevated lead concentrations have been found in each of the samples analyzed in 2020. In all samples, the concentrations were below the MAC, as per Canadian guidelines (5 µg/L), but an order of magnitude higher than in other samples across the GVDWS (1.95-4.28 µg/L). Investigations have concluded that the sampling line itself was the cause for the elevated lead concentrations at this site. In December 2020, CRD staff replaced the old sampling line and lead concentrations have since been reduced to normal background levels, well below the Canadian guideline limit.

In 2019, CRD, in concert with Saanich, Victoria/Esquimalt and Oak Bay, started the Greater Victoria pH & Corrosion Study to investigate water properties that may contribute to metal corrosion, and in particular, to lead leaching into the drinking water. The study examines the water inside the public and also the private drinking water piping systems. As part of this study, samples from a multitude of sampling locations were analyzed for lead and copper. The project was not completed by the end of 2020, due to Covid-19 impacts and the switch back to the old gas chlorination plant, which changed critical water chemistry parameters. The private side tap sampling project phase and the overall study completion were delayed into 2021. Preliminary study results were shared with stakeholders in November 2019. These results showed lead concentrations inside the sampled public systems that range from 'below detection limit' to low compared to the Canadian guideline MAC for lead in drinking water (5 µg/L). Elevated lead concentrations that were found in only a few locations in the CRD Transmission System (for instance at Lansdowne/Foul Bay and the Cook/Mallek sampling stations) were investigated in 2019 and 2020 and found to originate from old copper sampling lines. Upon replacement of these few old copper sampling lines, lead concentrations at these locations receded to background levels. Overall, the preliminary study results indicate that metal corrosion and lead leaching in the public piping systems is not an issue. The pending tap sampling project phase will determine the risk on the private side of the system.

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

- Median pH: 7.1
- Median CaCO3 Hardness: 16.4 mg/L
- Median Alkalinity: 13.15 mg/L
- Median Colour: 4.00 TCU
- Median Turbidity: 0.30 NTU
- Median Conductivity (25ºC): 45.00 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* for most months, except for May, July and August with samples that exceeded the 10 CFU/100 mL total coliform concentration, and in August with more than 10% of the samples testing positive for total coliform bacteria. Also, November had two consecutive total coliform-positive results at one sampling station, due to contamination of the sampling tap.

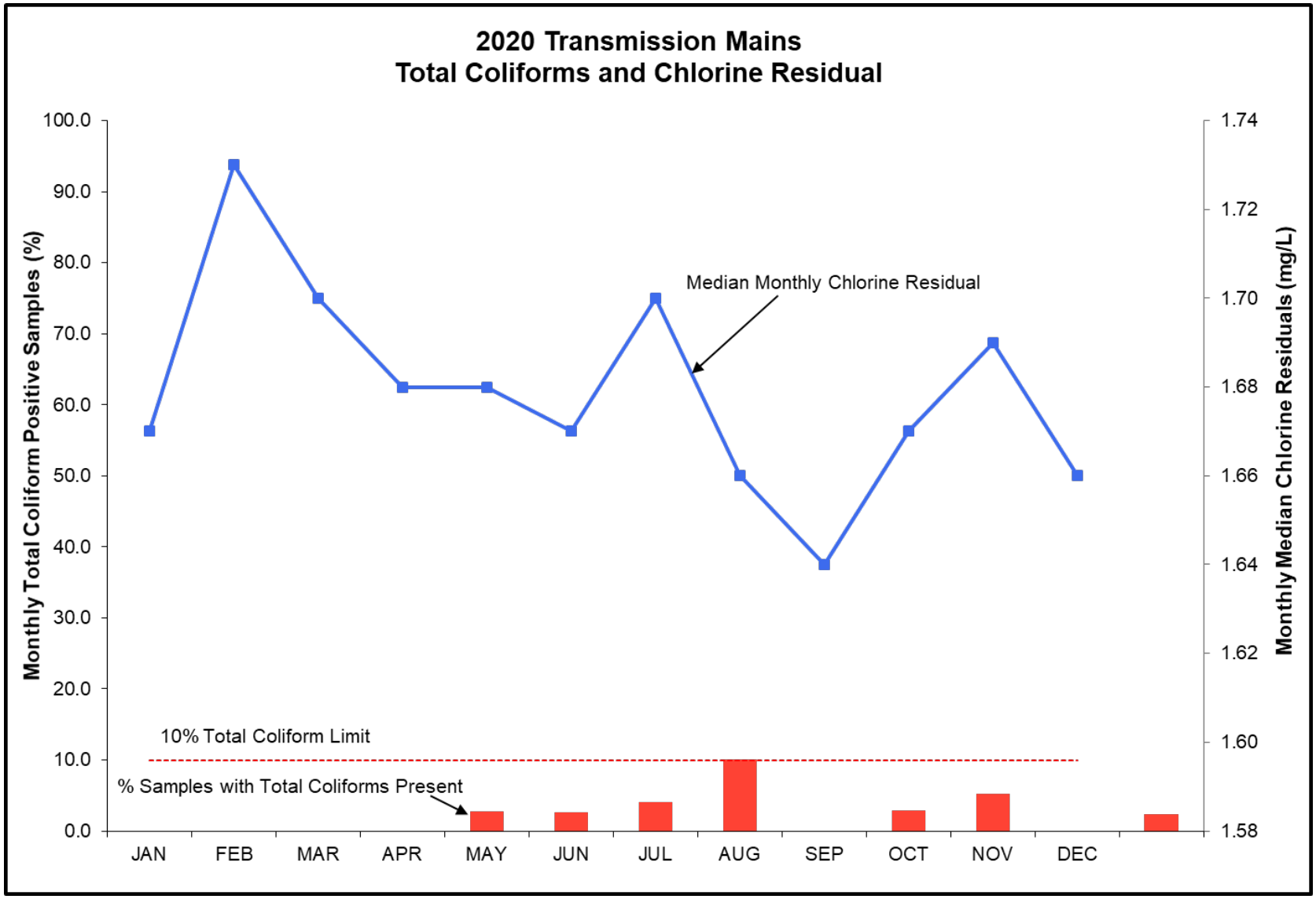


Figure 35 Transmission Mains Total Coliforms and Chlorine Residual in 2020

7.3.2 Supply Storage Reservoirs

The CRD supply storage reservoirs were sampled in 10 different sampling locations. In 2020, a total of 183 bacteriological and 61 water chemistry samples were collected and analyzed.

Bacteriological Results. Figure 36 and Table 3 show the 2020 results from the samples on CRD supply storage reservoirs that are considered part of the CRD Transmission System. The results indicate that the water in these storage reservoirs was bacteriologically safe. There were no total coliform-positive samples in 2020 (Table 3). 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.

There were no *E coli*-positive samples in 2020.

Chlorine Residual. Table 3 and Figure 36 indicate that the median total chlorine concentration in the storage reservoirs ranged from 1.26-1.52 mg/L, with an annual median total chlorine concentration of 1.41 mg/L.

Water Temperature. The annual median water temperature in the storage reservoirs was 10.7°C, with monthly medians ranging between 7.0°C (February/March) and 18.8°C (September) (Table 3).

Table 3 2020 Bacteriological Quality of Storage Reservoirs

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	Median mg/L as CL2	Median ° C
JAN	19	0	0.0	0	0	0	1	0	1.47	7.5
FEB	14	0	0.0	0	0	0	1	0	1.52	7.0
MAR	14	0	0.0	0	0	0	1	0	1.46	7.0
APR	18	0	0.0	0	0	0	1	0	1.49	8.4
MAY	16	0	0.0	0	0	0	1	0	1.43	11.5
JUN	12	0	0.0	0	0	0	1	0	1.36	13.0
JUL	14	0	0.0	0	0	0	1	0	1.46	15.0
AUG	15	0	0.0	0	0	0	1	0	1.39	18.3
SEP	15	0	0.0	0	0	0	2	0	1.34	18.8
OCT	18	0	0.0	0	0	0	1	0	1.26	15.7
NOV	14	0	0.0	0	0	0	1	0	1.38	10.5
DEC	14	0	0.0	0	0	0	1	0	1.42	8.6
Total:	183	0	0.0	0	0	0	13	0	1.41	10.7

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli;* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

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). At 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 17.7 and 20.2 µg/L at Cloake Hill and 16.3 and 13.6 µg/L at Upper Dean, respectively, well below the MAC (TTHM = 100 and HAA = 80 µg/L) stipulated in the Canadian guidelines. In six samples each, the NDMA concentrations at both locations were below the detection limit (2.1 ng/L) and 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 2020:

- Median pH: 7.20
- Median Alkalinity: 13.8 mg/L
- Median Colour: 3.5 TCU
- Median Turbidity: 0.25 NTU
- Median Conductivity (25ºC): 46.4 µS/cm

Metals. No data for 2020.

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 recommissioning of the new hypochlorite plant at the Goldstream Water Treatment Plant in 2021, temporarily out of service in 2020, will improve the chemical dosing system and further reduce 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 full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*.

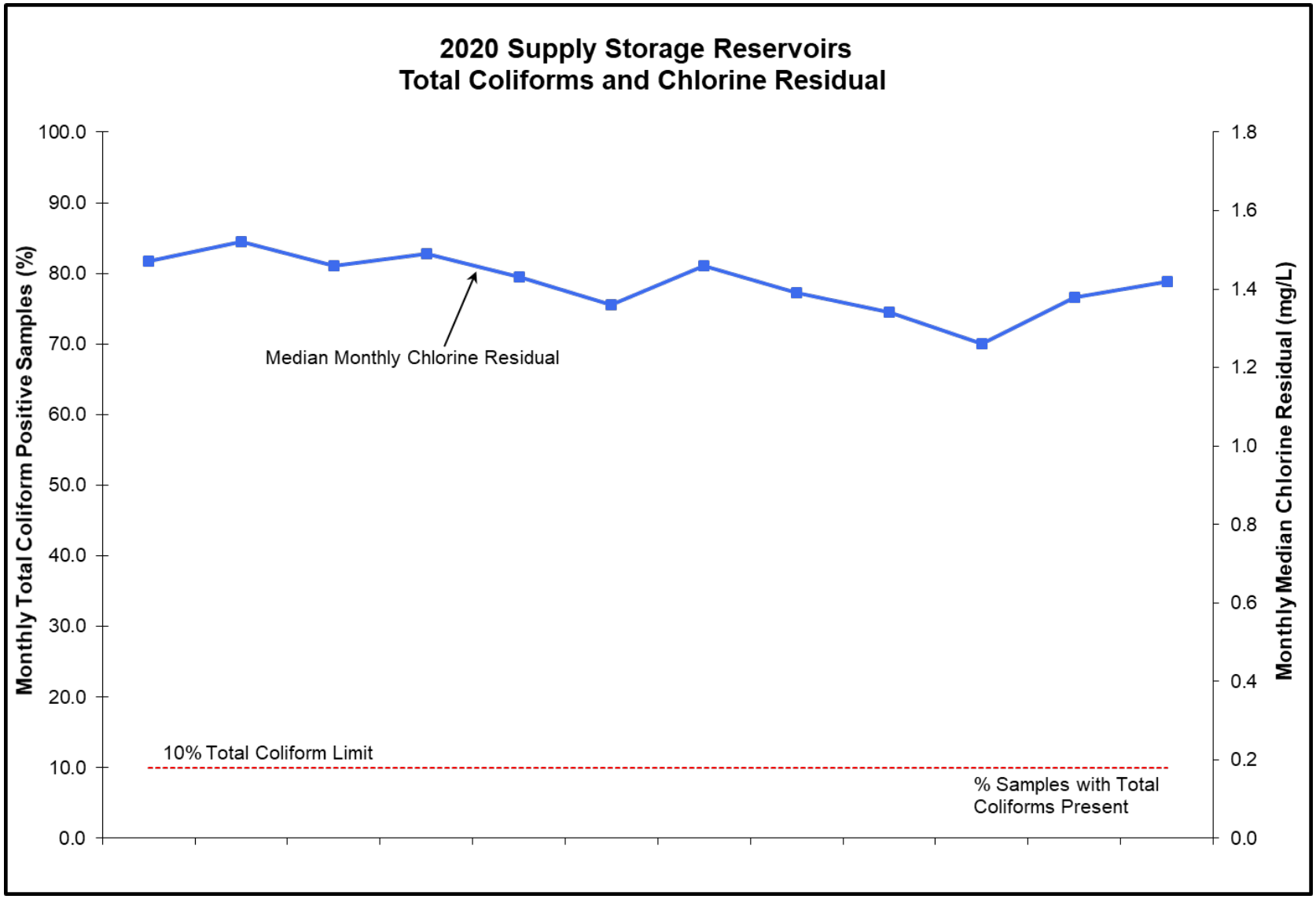


Figure 36 Supply Storage Reservoirs Total Coliforms and Chlorine Residual in 2020

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 2020, 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 2020, 904 bacteriological and 211 water chemistry samples were collected from the Juan de Fuca Water Distribution System (Table 4). Based on current population data for the Westshore municipalities, 66 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 a few samples between April and November. Two samples in May exceeded the 10 CFU/100 mL total coliform concentration threshold. There were no consecutive positive samples in 2020. This system complied with the 10% total coliform-positive limit for all months of the year during 2020. The annual total coliform percentage positive was well below the 10% limit at 1.0% (Table 4).

There were no *E coli*-positive samples in 2020.

Chlorine Residual. The annual median chlorine residual in the Westshore municipalities of the Juan de Fuca Water Distribution System was 1.33 mg/L (Table 3). The lowest monthly median was in December (1.10 mg/L) and the maximum monthly median was in February (1.44 mg/L) (Figure 37, Table 4).

Water Temperature. The annual median water temperature in the Juan de Fuca Water Distribution System was 11.7ºC, with monthly medians ranging between 6.8°C (February) and 18.4ºC (August, September) (Table 4).

Table 4 2020 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	Median mg/L as CL2	Median ° C
JAN	82	0	0.0	0	0	0	8	2	1.38	7.1
FEB	68	0	0.0	0	0	0	6	0	1.44	6.8
MAR	77	0	0.0	0	0	0	8	0	1.36	7.4
APR	77	1	1.3	0	0	0	5	0	1.39	9.2
MAY	75	6	8.0	0	2	0	4	0	1.41	12.5
JUN	79	0	0.0	0	0	0	2	0	1.38	14.0
JUL	69	0	0.0	0	0	0	5	0	1.32	16.5
AUG	74	0	0.0	0	0	0	6	1	1.29	18.4
SEP	75	1	1.3	0	0	0	4	0	1.23	18.4
OCT	68	0	0.0	0	0	0	8	0	1.17	15.1
NOV	79	1	1.3	0	0	0	11	1	1.33	10.4
DEC	81	0	0.0	0	0	0	9	1	1.10	8.5
Total:	904	9	1.0	0	2	0	76	5	1.33	11.7

Notes:
TC = Total Coliforms, E. coli = Escherichia coli, Cl2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

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 15.2 and 9.5 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 2.1ng/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 2020:

- Median pH: 7.0
- Median CaCO3 Hardness: 16.85 mg/L
- Median Alkalinity: 14.0 mg/L
- Median Colour: 3.0 TCU
- Median Conductivity (25ºC): 46.85 µS/cm
- Median Turbidity: 0.30 NTU

Metals. One sampling station in this system was sampled for metals bi-monthly. All metals were below the Canadian guideline limits. Lead concentrations varied from 'below detection limit' to 0.43 µg/L.

In 2019, CRD, in concert with Saanich, Victoria/Esquimalt and Oak Bay, started the Greater Victoria pH & Corrosion Study to investigate water properties that may contribute to metal corrosion and in particular to lead leaching into the drinking water. The study examines the water inside the public and also the private drinking water piping systems. As part of this study, samples from a multitude of sampling locations were analyzed for lead and copper. The project was not completed by the end of 2020, due to Covid-19 impacts and the switch back to the old gas chlorination plant, which changed critical water chemistry parameters. The private side tap sampling project phase and the overall study completion was delayed into 2021. Preliminary study results were shared with stakeholders in November 2019. These results showed lead concentrations inside the sampled public systems that range from 'below detection limit' to low compared to the Canadian guideline MAC for lead in drinking water (5 µg/L). Elevated lead concentrations that were found in only a few locations in the CRD Transmission System (for instance at Lansdowne/Foul Bay and the Cook/Mallek sampling stations) were investigated in 2019 and 2020 and found to originate from old copper sampling lines. Upon replacement of these few old copper sampling lines, lead concentrations at these locations receded to background levels. Overall, the preliminary study results indicate that metal corrosion and lead leaching in the public piping systems is not an issue. The pending tap sampling project phase will determine the risk on the private side of the system.

Compliance Status. The Westshore municipalities of the Juan de Fuca Water Distribution System were in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation*, except for May, with two total coliform-positive result in exceedance of 10 CFU/100 mL. Immediate resamples following this result were negative for total coliform bacteria and did not, therefore, confirm an actual drinking water contamination.

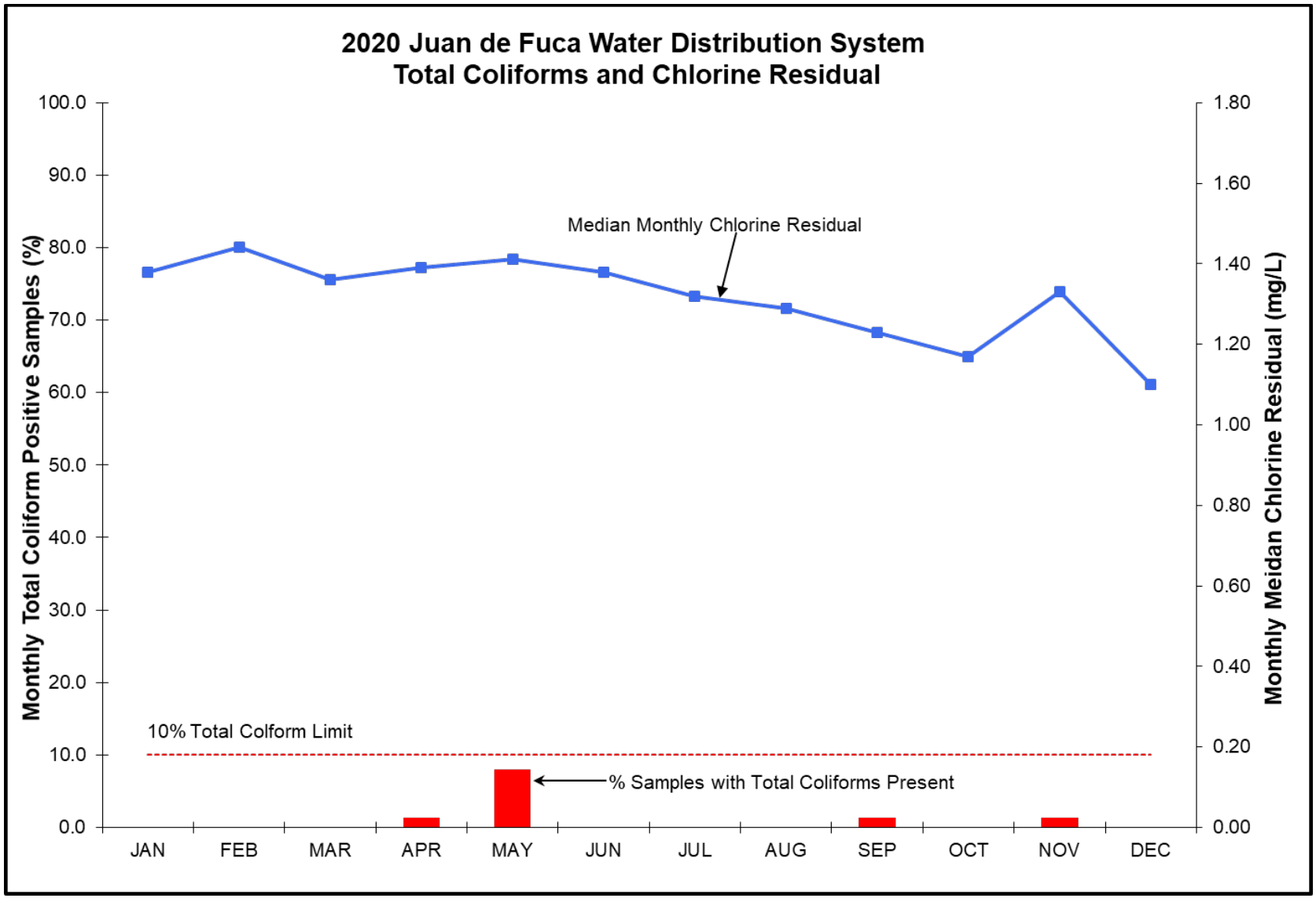


Figure 37 Juan de Fuca – Westshore Distribution System Total Coliforms and Chlorine Residual in 2020

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

In 2020, 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 2020, 391 bacteriological and 162 water chemistry samples were collected from the Sooke/East Sooke Distribution System (Table 5). Based on current population data for the District of Sooke, 13 samples are required for bacteria testing each month. Table 5 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. One sample in May tested positive for total coliform bacteria. The resample was negative. No sample exceeded the 10 CFU/100 mL total coliform concentration threshold. There were no consecutive positive samples in 2020. This system complied with the 10% total coliform-positive limit for all months of the year during 2020. The annual total coliform percentage positive was well below the 10% limit at 0.3% (Table 5).

No *E. coli* bacteria were found in any sample collected in 2020 (Table 5).

Chlorine Residual. The annual median chlorine residual in the Sooke/East Sooke Distribution System was 0.92 mg/L (Table 5, Figure 38). The lowest monthly median was in August and September (0.55 mg/L), and the maximum monthly median was in May (1.39 mg/L). The low chlorine residual in August and September 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 12.0°C, with monthly medians ranging between 7.0ºC (February) and 18.2°C (August) (Table 5).

Table 5 2020 Bacteriological Quality of the Sooke/East Sooke Distribution System (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	Median mg/L as CL2	Median ° C
JAN	39	0	0.0	0	0	0	5	0	1.08	7.5
FEB	30	0	0.0	0	0	0	4	0	1.18	7.0
MAR	40	0	0.0	0	0	0	5	0	1.12	7.6
APR	24	0	0.0	0	0	0	4	0	1.36	10.3
MAY	30	1	3.4	0	0	0	4	0	1.39	13.5
JUN	31	0	0.0	0	0	0	5	0	1.04	14.1
JUL	30	0	0.0	0	0	0	4	0	0.67	16.1
AUG	41	0	0.0	0	0	0	6	0	0.55	18.2
SEP	35	0	0.0	0	0	0	5	0	0.55	17.3
OCT	31	0	0.0	0	0	0	7	0	0.80	14.4
NOV	31	0	0.0	0	0	0	5	0	0.69	10.2
DEC	29	0	0.0	0	0	0	4	0	1.10	9.0
Total:	391	1	0.3	0	0	0	58	0	0.92	12.0

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

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 31.8 and 26.2 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 2.1ng/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: 7.2
- Median CaCO3 Hardness: 17.0 mg/L
- Median Colour: 3.0 TCU
- Median Alkalinity: 16.6 mg/L
- Median Turbidity: 0.25 NTU
- Median Conductivity (25ºC): 57.6 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 2020: first customer sampling station on Sooke River Road, and Whiffen Spit Road. All metallic parameters, including lead, were well below the Canadian guideline limits.

In 2019, the CRD, in concert with Saanich, Victoria/Esquimalt and Oak Bay, started the Greater Victoria pH & Corrosion Study to investigate water properties that may contribute to metal corrosion and, in particular, to lead leaching into the drinking water. The study examines the water inside the public and also the private drinking water piping systems. As part of this study, samples from a multitude of sampling locations were analyzed for lead and copper. The project was not completed by the end of 2020, due to Covid-19 impacts and the switch back to the old gas chlorination plant, which changed critical water chemistry parameters. The private side tap sampling project phase and the overall study completion was delayed into 2021. Preliminary study results were shared with stakeholders in November 2019. These results showed lead concentrations inside the sampled public systems that range from 'below detection limit' to low compared to the Canadian guideline MAC for lead in drinking water (5 µg/L). Elevated lead concentrations that were found in only a few locations in the CRD Transmission System (for instance at Lansdowne/Foul Bay and the Cook/Mallek sampling stations) were investigated in 2019 and 2020 and found to originate from old copper sampling lines. Upon replacement of these few old copper sampling lines, lead concentrations at these locations receded to background levels. Overall, the preliminary study results indicate that metal corrosion and lead leaching in the public piping systems is not an issue. The pending tap sampling project phase will determine the risk on the private side of the 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.*

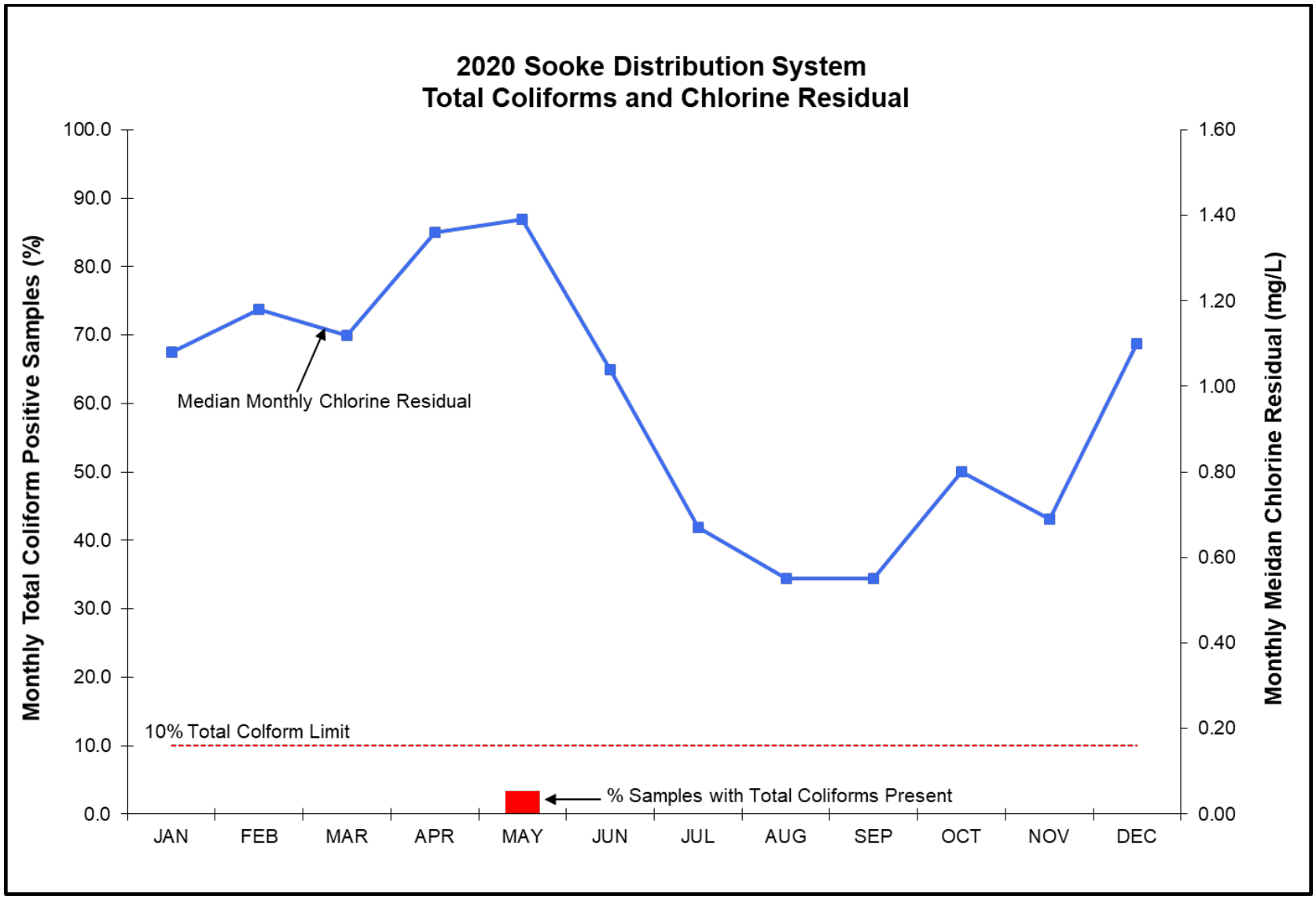


Figure 38 Sooke/East Sooke Distribution System Total Coliforms and Chlorine Residual in 2020

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

In 2020, 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 2020, 283 bacteriological and 208 water chemistry samples were collected from the Central Saanich Distribution System (Table 6). Based on current population data for the District of Central Saanich, 17 samples are required for bacteria testing each month. Table 6 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Total coliforms were found in two samples collected in 2020, one in April and one in August. Resamples were both negative. This system complied with the 10% total coliform-positive limit for all of 2020. No samples exceeded the 10 CFU/100 mL total coliform concentration. There were also no consecutive positive samples in 2020 (Table 6).

None of the samples contained *E. coli* bacteria in 2020 (Table 6).

Chlorine Residual. The annual median chlorine residual in the Central Saanich Distribution System was 1.47 mg/L (Table 6). The lowest monthly median was in October (1.32 mg/L) and the maximum monthly median was in August (1.56 mg/L) (Figure 39).

Water Temperature. The annual median water temperature in the Central Saanich Distribution System was 11.8°C, with monthly medians ranging between 7.4°C (February) and 19.1°C (September) (Table 6).

Table 6 2020 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 >0	Samples Collected	Samples >1 NTU	Median mg/L as CL2	Median ° C
JAN	26	0	0.0	0	0	0	9	0	1.48	7.8
FEB	22	0	0.0	0	0	0	8	1	1.54	7.4
MAR	24	0	0.0	0	0	0	8	0	1.46	7.8
APR	24	1	4.2	0	0	0	8	1	1.52	9.1
MAY	24	0	0.0	0	0	0	9	0	1.47	12.2
JUN	25	0	0.0	0	0	0	9	1	1.46	14.3
JUL	23	0	0.0	0	0	0	9	0	1.52	16.4
AUG	23	1	4.3	0	0	0	9	0	1.56	18.7
SEP	24	0	0.0	0	0	0	8	1	1.43	19.1
OCT	23	0	0.0	0	0	0	9	0	1.32	16.0
NOV	23	0	0.0	0	0	0	10	0	1.43	11.4
DEC	22	0	0.0	0	0	0	8	0	1.41	9.2
Total:	283	2	0.7	0	0	0	104	4	1.47	11.8

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2020.

Physical/Chemical Parameters. The drinking water in the Central Saanich Distribution System had the following physical and chemical characteristics in 2020:

- Median pH: 7.11
- Median Turbidity: 0.3 NTU
- Median Colour: 3.5 TCU
- Median Alkalinity: 13.6 mg/L
- Median Conductivity (25ºC): 46.2 µS/cm

Metals. No data for 2020.

Compliance Status. The Central Saanich Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2020.

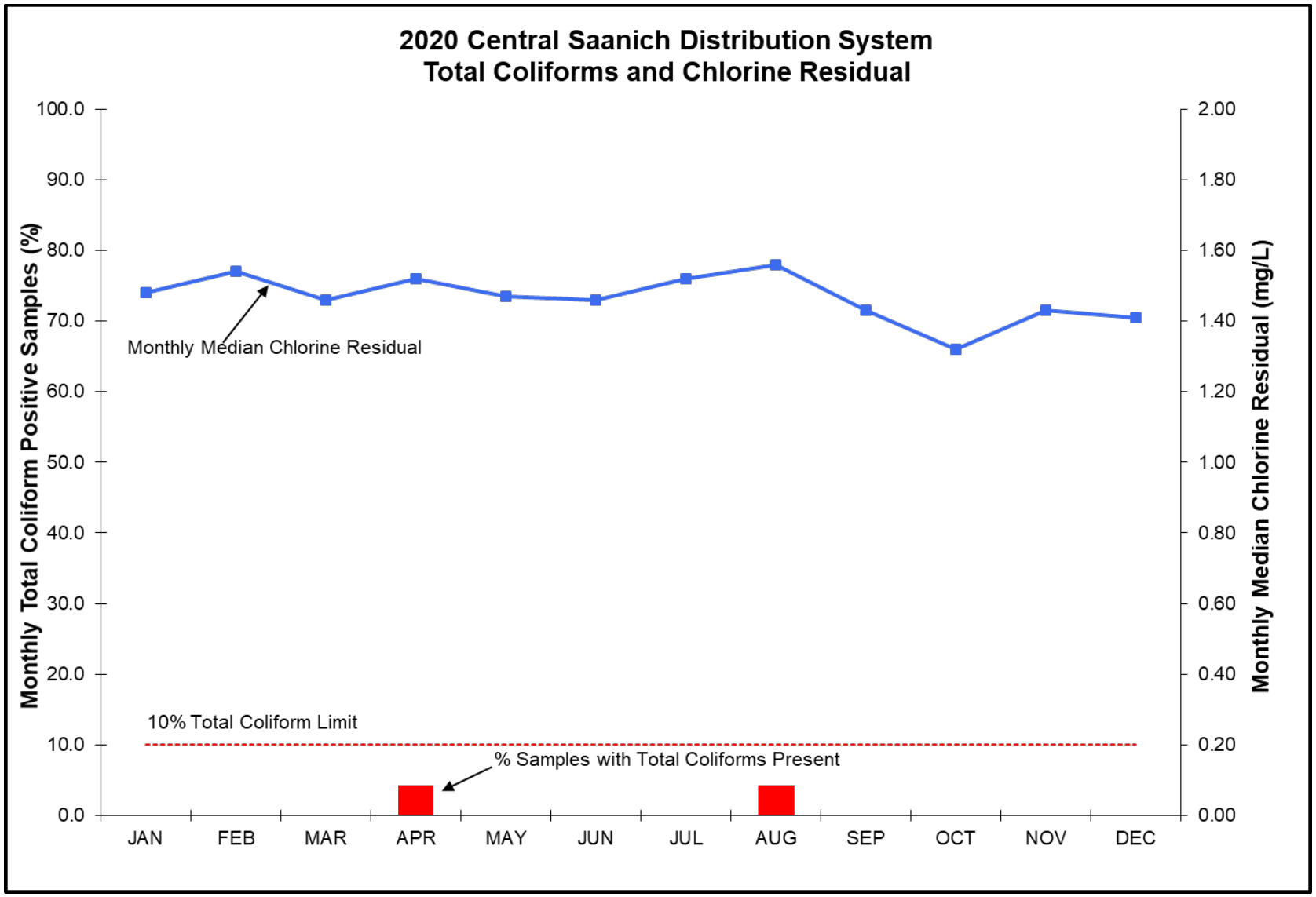


Figure 39 Central Saanich Distribution System Total Coliforms and Chlorine Residual in 2020

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

In 2020, 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 2020, 206 bacteriological and 56 water chemistry samples were collected from the North Saanich Distribution System (Table 7). Based on current population data for the District of North Saanich, 12 samples are required for bacteria testing each month. Table 7 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Total coliforms were found in one sample collected in April 2020. The resample was negative. This system complied with the 10% total coliform-positive limit for all of 2020. No sample exceeded the 10 CFU/100 mL total coliform concentration. There were also no consecutive positive samples in 2020 (Table 7).

None of the samples contained *E. coli* bacteria in 2020 (Table 7).

Chlorine Residual. The annual median chlorine residual in the North Saanich Distribution System was 1.15 mg/L (Table 7). The lowest monthly median was in October (0.69 mg/L) and the maximum monthly median was in November (1.84 mg/L) (Figure 40).

Water Temperature. The annual median water temperature in the North Saanich Distribution System was 11.8°C, with monthly medians ranging between 7.8°C (February) and 18.6°C (August) (Table 7).

Table 7 2020 Bacteriological Quality of 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	Median mg/L as CL2	Median ° C
JAN	18	0	0.0	0	0	0	1	0	1.29	8.4
FEB	16	0	0.0	0	0	0	0	0	1.06	7.8
MAR	18	0	0.0	0	0	0	1	0	1.20	8.0
APR	18	1	5.6	0	0	0	1	0	1.19	9.5
MAY	17	0	0.0	0	0	0	1	0	1.04	12.0
JUN	17	0	0.0	0	0	0	1	0	1.15	14.0
JUL	18	0	0.0	0	0	0	1	0	1.20	16.4
AUG	17	0	0.0	0	0	0	1	0	1.28	18.6
SEP	17	0	0.0	0	0	0	1	0	0.94	18.5
OCT	17	0	0.0	0	0	0	1	0	0.69	15.2
NOV	15	0	0.0	0	0	0	1	0	1.84	11.9
DEC	18	0	0.0	0	0	0	1	0	0.93	9.7
Total:	206	1	0.5	0	0	0	11	0	1.15	11.8

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data in 2020.

Physical/Chemical Parameters. The drinking water in the North Saanich Distribution System had the following physical and chemical characteristics in 2020:

- Median pH: 7.29
- Median Colour: 3.5 TCU
- Median Turbidity: 0.25 NTU
- Median Alkalinity: 14.45 mg/L
- Median Conductivity (25ºC): 50.1 µS/cm

Metals. No data in 2020.

Compliance Status. The North Saanich Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2020.

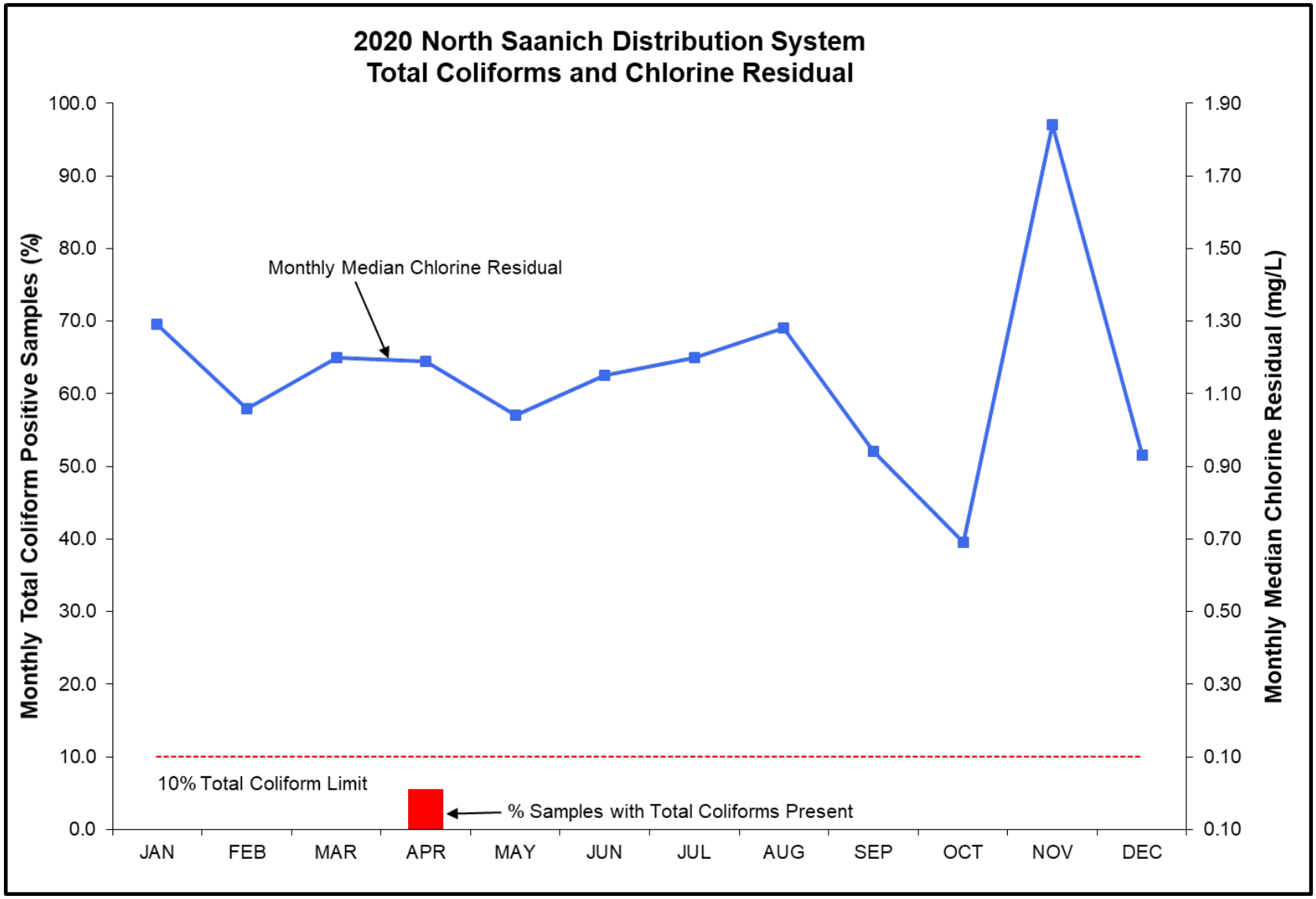


Figure 40 **North Saanich Distribution System Total Coliforms and Chlorine Residual in 2020**

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

In 2020, 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 2020, 283 bacteriological and 121 water chemistry samples were collected from the Oak Bay Distribution System (Table 8). Based on current population data for the District of Oak Bay, 19 samples are required for bacteria testing each month. Table 8 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. No sample in 2020 tested positive for total coliform bacteria (Table 8).

None of the samples contained *E. coli* in 2020 (Table 8).

Chlorine Residual. The annual median chlorine residual in the Oak Bay Distribution System was 1.51 mg/L (Table 8). The lowest monthly median was in December (1.28 mg/L) and the maximum monthly median was in February and July (1.59 mg/L) (Figure 41).

Water Temperature. The annual median water temperature in the Oak Bay Distribution System was 12.5°C, with monthly medians ranging between 7.6°C (February) and 19.7°C (September) (Table 8).

Table 8 2020 Bacteriological Quality of 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 >0	Samples Collected	Samples >1 NTU	Median mg/L as CL2	Median ° C
JAN	24	0	0.0	0	0	0	2	0	1.53	8.2
FEB	22	0	0.0	0	0	0	2	0	1.59	7.6
MAR	23	0	0.0	0	0	0	2	0	1.47	8.0
APR	26	0	0.0	0	0	0	2	0	1.56	10.1
MAY	22	0	0.0	0	0	0	2	0	1.54	13.1
JUN	26	0	0.0	0	0	0	2	0	1.58	14.6
JUL	24	0	0.0	0	0	0	3	0	1.59	17.2
AUG	23	0	0.0	0	0	0	2	0	1.47	19.4
SEP	23	0	0.0	0	0	0	3	0	1.50	19.7
OCT	22	0	0.0	0	0	0	2	0	1.50	16.0
NOV	26	0	0.0	0	0	0	6	0	1.44	11.7
DEC	22	0	0.0	0	0	0	2	0	1.28	9.2
Total:	283	0	0.0	0	0	0	30	0	1.51	12.5

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2020.

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

- Median pH: 7.2
- Median Alkalinity: 14.2 mg/L
- Median Turbidity: 0.3 NTU
- Median Conductivity (25ºC): 47.75 µS/cm
- Median Colour: 4.0 TCU

Metals. In 2019, Oak Bay participated with CRD, Saanich and Victoria/Esquimalt in the Greater Victoria pH & Corrosion Study to investigate water properties that may contribute to metal corrosion and, in particular, to lead leaching into the drinking water. The study examines the water inside the public and also the private drinking water piping systems. As part of this study, samples from a multitude of sampling locations were analyzed for lead and copper. The project was not completed by the end of 2020, due to Covid-19 impacts and the switch back to the old gas chlorination plant, which changed critical water chemistry parameters. The private side tap sampling project phase and the overall study completion was delayed into 2021. Preliminary study results were shared with stakeholders in November 2019. These results showed lead concentrations inside the sampled public systems that range from 'below detection limit' to low compared to the Canadian guideline MAC for lead in drinking water (5 µg/L). Elevated lead concentrations that were found in only a few locations in the CRD Transmission System (for instance at Lansdowne/Foul Bay and the Cook/Mallek sampling stations) were investigated in 2019 and 2020 and found to originate from old copper sampling lines. Upon replacement of these few old copper sampling lines, lead concentrations at these locations receded to background levels. Overall, the preliminary study results indicate that metal corrosion and lead leaching in the public piping systems is not an issue. The pending tap sampling project phase will determine the risk on the private side of the system.

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

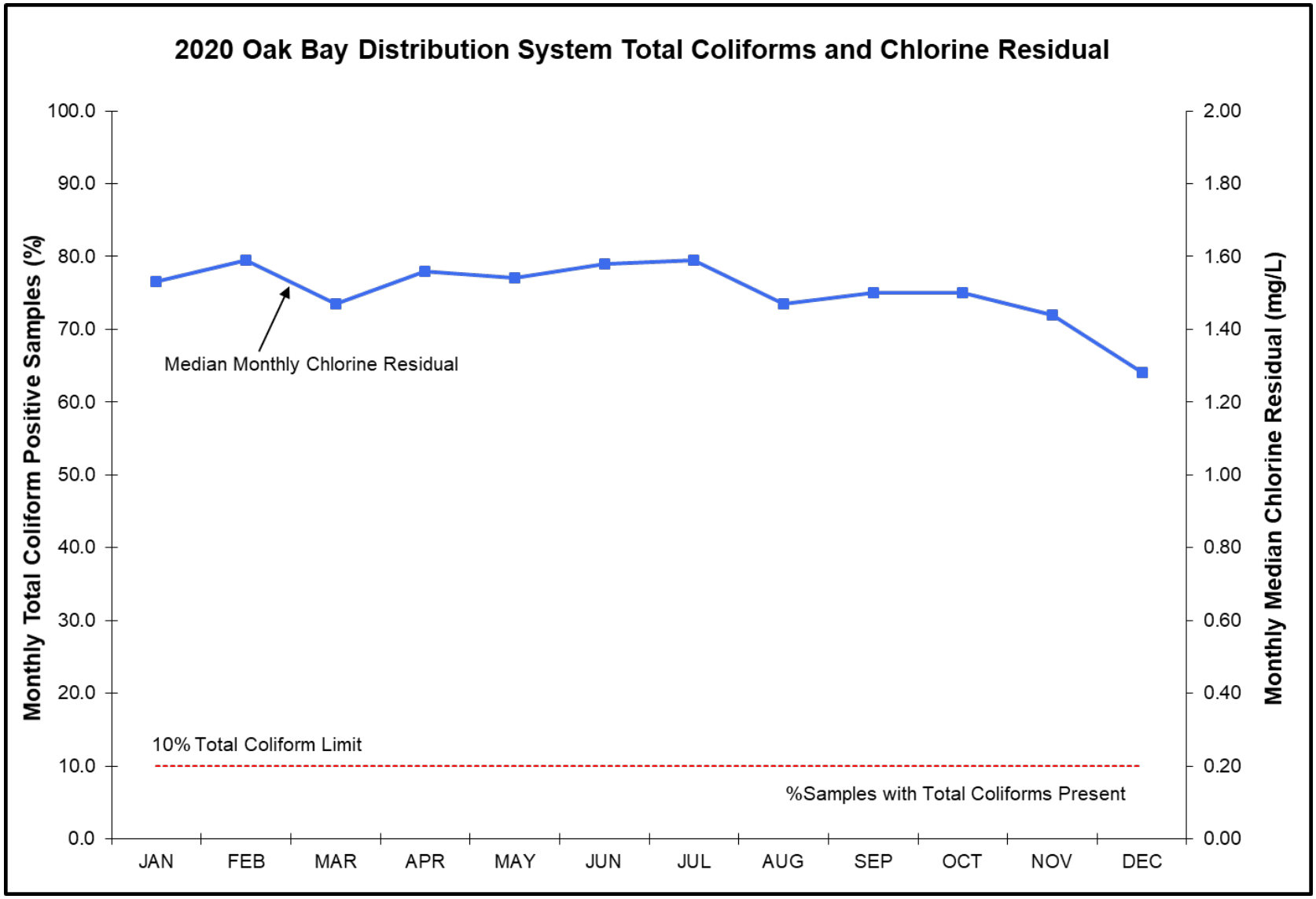


Figure 41 Oak Bay Distribution System Total Coliforms and Chlorine Residual in 2020

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

In 2020, 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 2019, 1,161 bacteriological and 149 water chemistry samples were collected from the Saanich Distribution System (Table 9). Based on current population data for the District of Saanich, 93 samples are required for bacteria testing each month. Table 9 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. A small number of total coliform-positive results occurred in six months. There were no consecutive positive samples in 2020. One sample in February exceeded the 10 CFU/100 mL total coliform concentration limit, but the resample was negative. This system complied with the 10% total coliform-positive limit for all months. The annual total coliform percentage positive was well below the 10% limit at only 0.6% (Table 9).

One sample tested positive for *E. coli* in November of 2020 (Table 9). Island Health was notified and the District of Saanich initiated their emergency response protocol. The area was flushed thoroughly and multiple resamples from upstream and downstream of the site were taken. All resamples were negative for total coliform or *E. coli* bacteria, ruling out an actual drinking water contamination.

Chlorine Residual. The annual median chlorine residual in the Saanich Distribution System was 1.41 mg/L (Table 9). The lowest monthly median was in October (1.29 mg/L) and the maximum monthly median was in July (1.50 mg/L) (Figure 42).

Water Temperature. The annual median water temperature in the Saanich Distribution System was 12.1°C, with monthly medians ranging between 7.3°C (February) and 18.8°C (August) (Table 9).

Table 9 2020 Bacteriological Quality of 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	Median mg/L as CL2	Median ° C
JAN	98	0	0.0	0	0	0	4	0	1.42	7.6
FEB	95	1	1.1	0	1	0	4	0	1.44	7.3
MAR	96	0	0.0	0	0	0	4	0	1.41	7.7
APR	98	0	0.0	0	0	0	3	0	1.39	9.9
MAY	96	1	1.0	0	0	0	4	0	1.44	12.5
JUN	105	1	1.0	0	0	0	5	0	1.43	14.4
JUL	95	0	0.0	0	0	0	4	0	1.50	16.8
AUG	93	0	0.0	0	0	0	4	0	1.45	18.7
SEP	96	1	1.0	0	0	0	4	0	1.34	18.8
OCT	95	1	1.1	0	0	0	4	0	1.29	15.8
NOV	99	2	2.0	0	0	1	6	0	1.30	11.2
DEC	95	0	0.0	0	0	0	4	0	1.34	9.2
Total:	1161	7	0.6	0	1	1	50	0	1.41	12.1

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2020.

Physical/Chemical Parameters. The drinking water in the Saanich Distribution System had the following physical and chemical characteristics in 2020:

- Median pH: 7.2
- Median Alkalinity: 13.8 mg/L
- Median Turbidity: 0.3 NTU
- Median Conductivity (25ºC): 47.0 µS/cm
- Median Colour: 4.0 TCU

Metals. In 2019, Saanich participated with CRD, Oak Bay and Victoria/Esquimalt in the Greater Victoria pH & Corrosion Study to investigate water properties that may contribute to metal corrosion and, in particular, to lead leaching into the drinking water. The study examines the water inside the public and also the private drinking water piping systems. As part of this study, samples from a multitude of sampling locations were analyzed for lead and copper. The project was not completed by the end of 2020, due to Covid-19 impacts and the switch back to the old gas chlorination plant, which changed critical water chemistry parameters. The private side tap sampling project phase and the overall study completion was delayed into 2021. Preliminary study results were shared with stakeholders in November 2019. These results showed lead concentrations inside the sampled public systems that range from 'below detection limit' to low compared to the Canadian guideline MAC for lead in drinking water (5 µg/L). Elevated lead concentrations that were found in only a few locations in the CRD Transmission System (for instance at Lansdowne/Foul Bay and the Cook/Mallek sampling stations) were investigated in 2019 and 2020 and found to originate from old copper sampling lines. Upon replacement of these few old copper sampling lines, lead concentrations at these locations receded to background levels. Overall, the preliminary study results indicate that metal corrosion and lead leaching in the public piping systems is not an issue. The pending tap sampling project phase will determine the risk on the private side of the system.

Compliance Status. The Saanich Distribution System was in compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2020, except for February with one sample that exceeded the 10 CFU/100 mL total coliform concentration, and November with one *E. coli*-positive test result. All resamples were negative and confirmed no actual drinking water contamination.

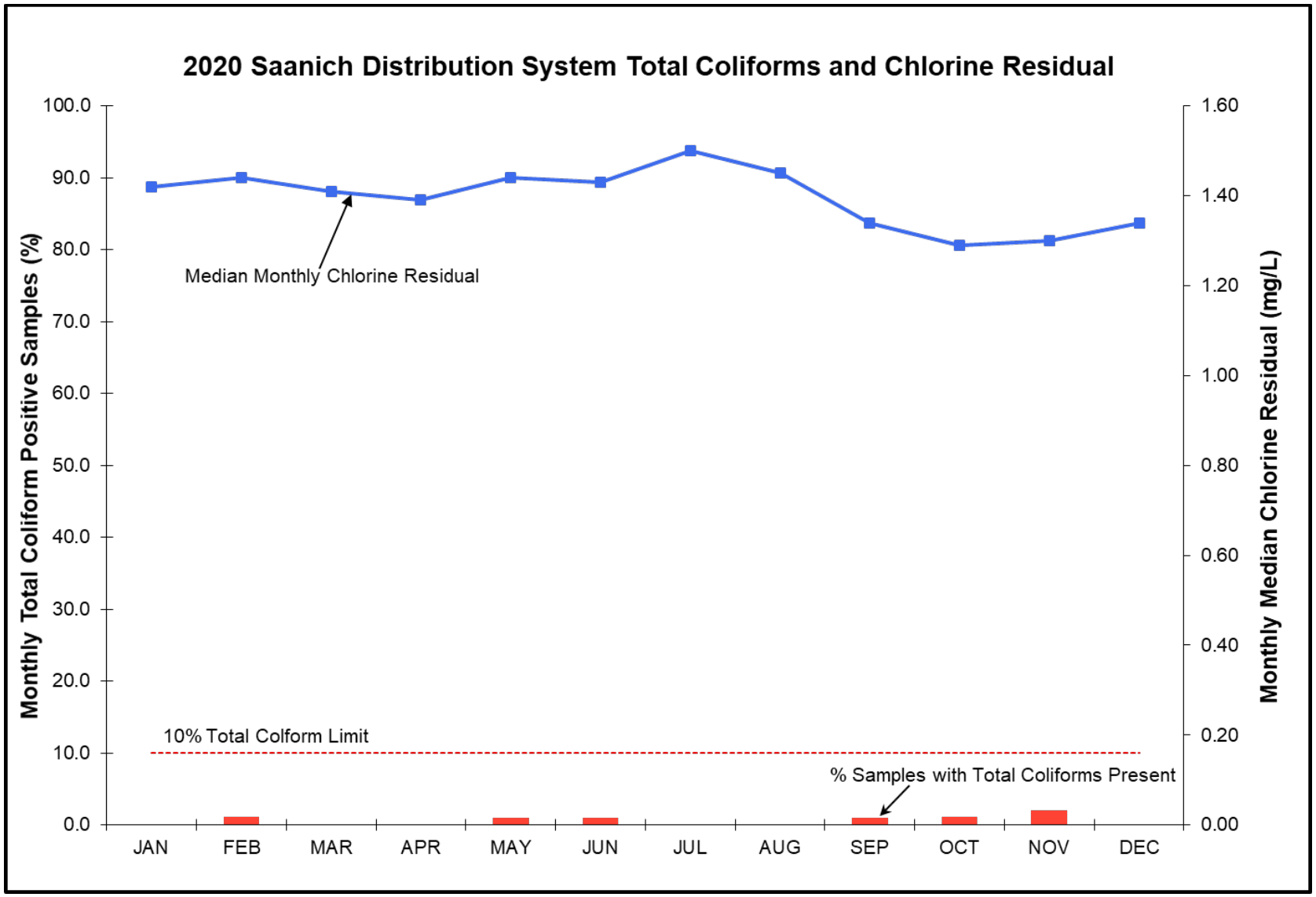


Figure 42 Saanich Distribution System Total Coliforms and Chlorine Residuals in 2020

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

In 2020, six 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 2020, 183 bacteriological and 65 water chemistry samples were collected from the Sidney Distribution System (Table 10). Based on current population data for the Town of Sidney, 12 samples are required for bacteria testing each month. Table 10 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. Two samples, one in July and one in December, tested positive for total coliforms in 2020. Both resamples were negative. There were no consecutive positive samples in 2020. 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 percentage positive was well below the 10% limit at only 1.1% (Table 10).

Also, no sample tested positive for *E. coli* in 2020 (Table 10).

Chlorine Residual. The annual median chlorine residual in the Sidney Distribution System was 1.32 mg/L (Table 10). The lowest monthly median was in October (1.10 mg/L) and the maximum monthly median was in February (1.48 mg/L) (Figure 43).

Water Temperature. The annual median water temperature in the Sidney Distribution System was 12.5°C, with monthly medians ranging between 8.0°C (February, March) and 19.3°C (September) (Table 10).

Table 10 2020 Bacteriological Quality of 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	Median mg/L as CL2	Median ° C
JAN	15	0	0.0	0	0	0	2	0	1.43	8.1
FEB	14	0	0.0	0	0	0	1	0	1.48	8.0
MAR	15	0	0.0	0	0	0	1	0	1.41	8.0
APR	15	0	0.0	0	0	0	1	0	1.44	9.5
MAY	15	0	0.0	0	0	0	1	0	1.34	12.4
JUN	16	0	0.0	0	0	0	1	0	1.40	14.7
JUL	17	1	5.9	0	0	0	1	0	1.38	16.9
AUG	15	0	0.0	0	0	0	2	0	1.39	18.9
SEP	15	0	0.0	0	0	0	1	0	1.22	19.3
OCT	14	0	0.0	0	0	0	1	0	1.10	16.9
NOV	17	0	0.0	0	0	0	1	0	1.24	12.0
DEC	15	1	6.7	0	0	0	1	0	1.24	9.8
Total:	183	2	1.1	0	0	0	14	0	1.32	12.5

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2020.

Physical/Chemical Parameters. The drinking water in the Sidney Distribution System had the following physical and chemical characteristics in 2019:

- Median pH: 7.1
- Median Alkalinity: 13.6 mg/L
- Median Turbidity: 0.3 NTU
- Median Conductivity (25ºC): 46.4 µS/cm
- Median Colour: 3.5 TCU

Metals. No data in 2020.

Compliance Status. The Sidney Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2020.

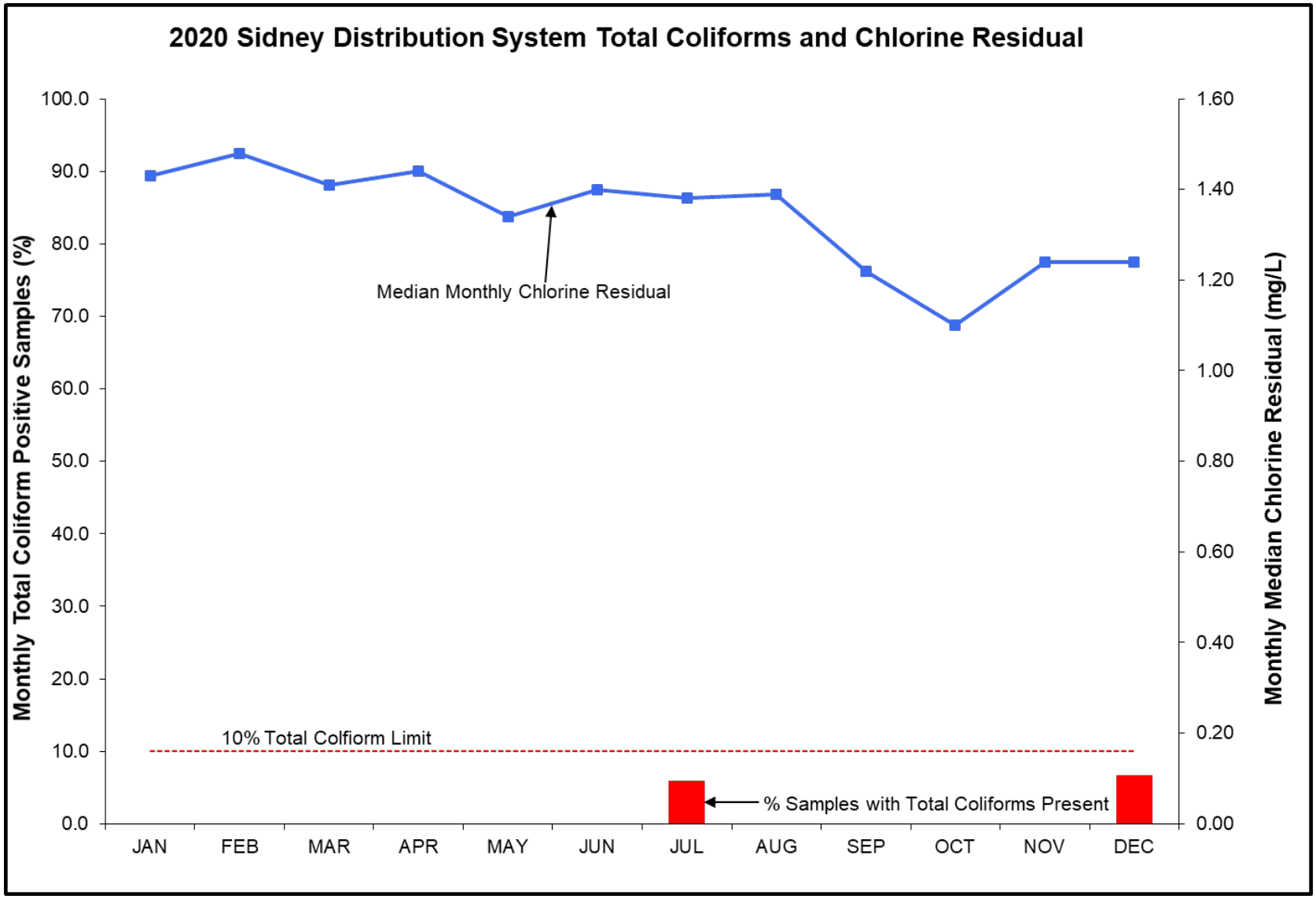


Figure 43 Sidney Distribution System Total Coliforms and Chlorine Residuals in 2020

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

In 2020, 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 2020, 1,225 bacteriological and 191 water chemistry samples were collected from the Victoria/Esquimalt Distribution System (Table 11). Based on current population data for Victoria and Esquimalt, 92 samples are required for bacteria testing each month. Table 11 shows the number of monthly samples collected and analyzed for compliance.

Bacteriological Results. A small number of total coliform-positive results occurred in five months throughout the year. There were no consecutive positive samples in 2020. No sample 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 percentage positive was well below the 10% limit at only 0.6% (Table 11).

No *E. coli* was detected in any sample in 2020 (Table 11).

Chlorine Residual. The annual median chlorine residual in the Victoria/Esquimalt Distribution System was 1.45 mg/L (Table 11). The lowest monthly median was in September (1.32 mg/L) and the maximum monthly median was in February (1.57 mg/L) (Figure 44).

Water Temperature. The annual median water temperature in the Victoria/Esquimalt Distribution System was 13.0°C, with monthly medians ranging between 7.8°C (January/February) and 20.4°C (August) (Table 11).

Table 11 2020 Bacteriological Quality of 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	Median mg/L as CL2	Median ° C
JAN	112	0	0.0	0	0	0	7	0	1.50	7.8
FEB	94	0	0.0	0	0	0	6	0	1.57	7.8
MAR	104	0	0.0	0	0	0	6	0	1.48	8.3
APR	105	0	0.0	0	0	0	9	1	1.47	11.0
MAY	98	2	2.0	0	0	0	7	0	1.51	14.2
JUN	115	0	0.0	0	0	0	9	1	1.51	16.2
JUL	96	0	0.0	0	0	0	6	0	1.48	18.4
AUG	96	0	0.0	0	0	0	7	0	1.38	20.4
SEP	103	1	1.0	0	0	0	6	0	1.32	20.0
OCT	98	1	1.0	0	0	0	5	0	1.33	16.2
NOV	108	1	0.9	0	0	0	9	0	1.43	11.4
DEC	96	2	2.1	0	0	0	6	0	1.41	9.5
Total:	1225	7	0.6	0	0	0	83	2	1.45	13.0

Notes:
TC = Total Coliforms, *E. coli* = *Escherichia coli,* Cl_2 = chlorine, NTU = Nephelometric turbidity unit.
> = Greater than, mg/L = milligrams per litre, °C = degrees Celsius

Disinfection Byproducts. No data for 2020.

Physical/Chemical Parameters. The drinking water in the Victoria/Esquimalt Distribution System had the following physical and chemical characteristics in 2020:

- Median pH: 7.2
- Median Alkalinity: 13.5 mg/L
- Median Turbidity: 0.3 NTU
- Median Conductivity (25ºC): 46.3 µS/cm
- Median Colour: 4.0 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. In 2019, Victoria/Esquimalt participated with CRD, Oak Bay and Saanich in the Greater Victoria pH & Corrosion Study to investigate water properties that may contribute to metal corrosion and, in particular, to lead leaching into the drinking water. The study examines the water inside the public and also the private drinking water piping systems. As part of this study, samples from a multitude of sampling locations were analyzed for lead and copper. The project was not completed by the end of 2020, due to Covid-19 impacts and the switch back to the old gas chlorination plant which changed critical water chemistry parameters. The private side tap sampling project phase and the overall study completion was delayed into 2021. Preliminary study results were shared with stakeholders in November 2019. These results showed lead concentrations inside the sampled public systems that range from 'below detection limit' to low compared to the Canadian guideline MAC for lead in drinking water (5 µg/L). Elevated lead concentrations that were found in only a few locations in the CRD Transmission System (for instance at Lansdowne/Foul Bay and the Cook/Mallek sampling stations) were investigated in 2019 and 2020 and found to originate from old copper sampling lines. Upon replacement of these few old copper sampling lines, lead concentrations at these locations receded to background levels. Overall, the preliminary study results indicate that metal corrosion and lead leaching in the public piping systems is not an issue. The pending tap sampling project phase will determine the risk on the private side of the system.

Compliance Status. The Victoria/Esquimalt Distribution System was in full compliance with the *BC Drinking Water Protection Act* and *Drinking Water Protection Regulation* in 2020.

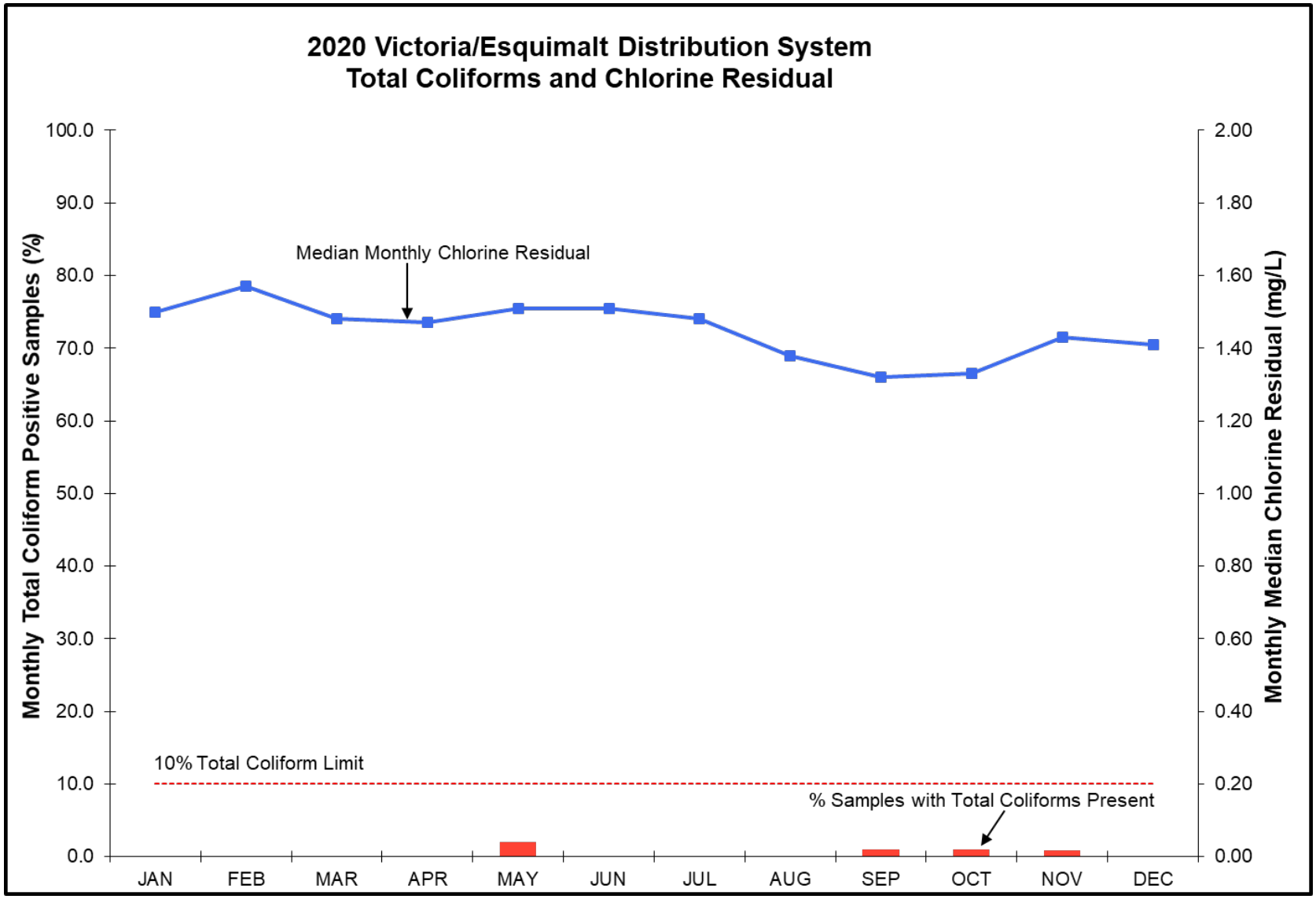


Figure 44 Victoria/Esquimalt Distribution System Total Coliforms and Chlorine Residuals in 2020

7.5 Water Quality Inquiry Program

Records of customer inquiries, including complaints about drinking water quality, have been maintained since 1992. In 2020, as was the case in recent years, 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. A number of inquiries or complaints about chlorine taste and odour were received in 2020, but most of these were of a general nature where people object to the addition of any chemical to the drinking water.

Between June 2-9, 2020, the CRD issued a taste and odour public advisory, as a result of an *Uroglena* algae event in Sooke Lake Reservoir. During this time, CRD staff received a higher than normal volume of customer calls and complaints related to abnormal taste and/or odour associated with the drinking water. Over a period of two weeks in early June, CRD and municipal staff received in total about 20 customer complaints that could be attributed to this algal event in Sooke Lake Reservoir.

On the afternoon of June 17, 2020, the Victoria General Hospital noticed higher than usual turbidity in its water supply. This episode was linked to the typical early summer watering day turbidity excursions, due to high watering demands and thus high flows in the raw water mains upstream of the Goldstream Water Treatment Plant. Since this incident, CRD staff have communicated regularly with Island Health hospital facility management staff to provide useful water quality information to these facilities.

The absence of the intake screen for most of 2020 did not result in any increase of customer concerns or complaints.

In general, the number of water quality complaints or inquiries in 2020 was consistent with that of previous years.

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. The heightened public awareness around health risks associated with lead in drinking water that was noticed in public interactions in previous years was somewhat subdued in 2020, likely as a result of the dominant attention to the Covid-19 public health risks throughout most of the year.

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, this bylaw saw its most recent update to bring the technical and administrative requirements in line with new provincial legislation. The method by which the program meets its objectives is enforcement of the cross connection control requirements under the BC Building Code and as described by the Canadian Standard Association, 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 2020, the Cross Connection Control Program conducted a total of 598 facility audits on high risk (100) and moderate risk (498) facilities. The focus was on facilities in malls and mixed-use residential buildings. The compliance rate, measured as facilities with outstanding deficiencies divided by the number of facilities audited, increased from 61% in 2019 to 74% by the end of 2020. This success is attributed to a shift to an outcome-oriented approach, coupled with effective outreach campaigns. It is expected that this compliance rate will further increase in future years.

In total, by the end of 2020, the Cross Connection Control Program had 27,147 cross connection control devices registered in its database (up from 24,134 in 2019). These devices were installed in 12,794 registered facilities across the region. On all testable devices, a total of 19,182 test reports (8,882 digital, 8,010 paper) were received and recorded by CRD staff in 2020. The compliance rate for getting testable devices tested in accordance with the bylaw was 71%.

8.0 CONCLUSIONS

1. The water quality data collected in 2020 indicate that the drinking water in Greater Victoria is of good quality and safe to drink. The drinking water temperature exceeded the aesthetic objective of 15°C between mid-July and mid-October. This is the only parameter that system-wide did not meet water quality criteria listed in the G*uidelines 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 2020. Total coliform concentrations were very low for most of the year, with medium concentrations in late summer/early fall. This bacteriological pattern is typical for Sooke Lake Reservoir and does not cause any issues with the existing water treatment systems. *E. coli* bacterial levels in the raw source water were low for the entire year.

4. Consumers in the GVDWS receive drinking water that has very low disinfection byproducts. Overall levels of trihalomethanes and haloacetic acids remain well below the Canadian guidelines' 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 2020 was in line with the long-term average trend in Sooke Lake Reservoir. The species that were active, and relatively abundant in 2020, belonged to known and low-risk algal species. A higher than usual abundance of the golden-brown algae *Uroglena sp.* caused about 20 customer complaints about unpleasant taste and odour in the drinking water in early June. The CRD issued a public taste and odour advisory that was in place from June 2-9, 2020. Such higher abundance of *Uroglena* algae seemed a common phenomenon in southern BC in 2020 and likely the result of favourable environmental conditions for growth of this 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 2020 was low and similar to that in previous years. The subject of the majority of inquiries and concerns were, as usual, related to chlorine taste and odour or temporary water discolouration, due to operational activities. Lead has emerged as a priority topic for public concerns.

7. The CRD Transmission Mains, CRD Juan de Fuca, and Saanich distribution systems 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, or due to the number of total coliform-positive samples exceeding 10% in a single month. Resamples did not confirm an actual drinking water contamination, therefore, there was no risk to the public, due to these results.

8. All systems did meet the monthly sampling requirements, as per *BC Drinking Water Protection Regulation.* This has been an issue in the past and has now been addressed with additional sampling/testing efforts by the CRD for the CRD and municipal water systems.

9. 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 2020.

10. Covid-19 impacts, and issues with the new hypochlorite chlorination plant, prevented the multi-jurisdictional Greater Victoria pH & Corrosion Study from being completed in 2020. The tap sampling component of this project that was designed to assess the risk of lead exposure through drinking water at the residential tap was delayed into 2021. Staff anticipate completing this project in 2021.

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

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	**14.9**	18	13.0	15.7		15.3	135	8.84-19.1	12/yr
Carbon, Dissolved Organic	mg/L as C	**1.6**	14	1.4	4.0		1.72	116	ND-3.34	12/yr
Carbon, Total Organic	mg/L as C	**1.8**	13	1.3	3.9	Guideline Archived	1.9	118	0.82-3.29	12/yr
Colour, True	TCU	**6.0**	80	3.0	20.0	≤15 AO	6.4	541	ND-15.2	52/yr
Conductivity @ 25ºC	uS/cm	**42.1**	53	39.4	46.1		42.2	530	27.5-62.9	52/yr
Hardness as $CaCO_3$	mg/L	**16.7**	6	15.3	17.3	No Guideline Required	17.3	167	ND-20.9	6/yr
pH	pH units	**7.2**	41	6.5	7.9	7.0 - 10.5 AO	7.28	532	ND-7.6	52/yr
Tannins and Lignins	mg/L	**0.1**	2	ND	0.2	Guideline Archived	170	1	170-170	2/yr
Total Dissolved Solids	mg/L	**27.0**	12	ND	38.0	≤500 AO	27	102	ND-48	12/yr
Total Suspended Solids	mg/L	**ND**	12	ND	2.0		0.5	112	ND-4	12/yr
Total Solids	mg/L	**27.0**	14	ND	56.0		32	12	22-40	12/yr
Turbidity, Grab Samples	NTU	**0.3**	285	0.2	3.1	1.0 Operational Guideline	0.31	2451	0.17-2.7	250/yr
Ultraviolet Absorption, 5 cm	Abs.@254 nm	**0.3**	83	0.2	0.3		0.26	519	0.16-88.2	52/yr
Ultraviolet Transmittance	%	**88.4**	89	86.4	90.4		88.6	733	0.2-94.4	52/yr
Water Temp., Grab Samples	degrees C	**10.4**	243	4.6	20.4	≤15 AO	10.3	2493	2.7-21	250/yr
Non-Metallic Inorganic Chemicals (ND means less than instrument can detect)										
Bromide	ug/L as Br	**ND**	4	ND	0.00		ND	70	ND-22.79	4/yr
Chloride	mg/L as Cl	**2.35**	2	2.3	2.40	≤ 250 AO	2.4	25	ND-4.58	4/yr
Cyanide	mg/L as Cn	**ND**	2	ND	0.00	200 MAC	ND	17	ND-0	4/yr
Fluoride	mg/L as F	**ND**	4	ND	0.00	1.5 MAC	0.01	23	ND-0.07	4/yr
Iodide, dissolved	mg/L as I	**ND**	2	ND	0.00		ND	6	ND-0	4/yr
Nitrate, Dissolved	ug/L as N	**ND**	11	ND	41.00	10000 MAC	10	107	ND-222	12/yr
Nitrite, Dissolved	ug/L as N	**ND**	11	ND	0.00	1000 MAC	ND	106	ND-5	12/yr
Nitrate + Nitrite	ug/L as N	**ND**	11	ND	41.00		10	107	ND-55.1	12/yr
Nitrogen, Ammonia	ug/L as N	**ND**	11	ND	39.00	No Guideline Required	7.5	109	ND-130	12/yr
Nitrogen, Total Kjeldahl	ug/L as N	**103**	11	68	159.00		85	107	0-610	12/yr
Nitrogen, Total	ug/L as N	**107**	11	68	159.00		98.56	112	0-610	12/yr
Phosphate, Ortho, Dissolved	ug/L as P	**ND**	11	ND	1.80		1.5	107	ND-24.3	12/yr
Phosphate, Total, Dissolved	ug/L as P	**ND**	11	ND	3.40		2.5	111	ND-31	12/yr
Phosphate, Total	ug/L as P	**2**	11	ND	3.30		3.7	116	ND-12.6	12/yr
Silica	mg/L as SiO_2	**4.3**	11	3.9	4.90		3.88	97	0.09-5.6	12/yr
Silicon	ug/L as Si	**1820**	6	1650	2230.00		1860	89	681-2520	6/yr
Sulphate	mg/L as SO_4	**1.4**	11	ND	1.70	≤ 500 AO	1.74	108	ND-8.16	12/yr
Sulphide	mg/L as H_2S	**ND**	11	ND	0.01	≤ 0.05 AO	ND	43	ND-0.13	12/yr

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Sulphur	mg/L as S	**ND**	6	ND	0.00		ND	87	ND-0	6/yr
Metallic Inorganic Chemicals (ND means less than instrument can detect)										
Aluminum	ug/L as Al	**18.8**	6	6	24.90	2900 MAC / 100 OG	13.8	89	ND-52.3	6/yr
Antimony	ug/L as Sb	**ND**	6	ND	0.00	6 MAC	ND	89	ND-0	6/yr
Arsenic	ug/L as	**ND**	6	ND	0.00	10 MAC	ND	89	ND-0.24	6/yr
Barium	ug/L as Ba	**3.7**	6	3.3	4.00	2000 MAC	3.9	89	ND-5	6/yr
Beryllium	ug/L as Be	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Bismuth	ug/L as Bi	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Boron	ug/L as B	**ND**	6	ND	0.00	5000 MAC	ND	89	ND-0	6/yr
Cadmium	ug/L as Cd	**ND**	6	ND	0.00	7 MAC	ND	89	ND-0.2	6/yr
Calcium	mg/L as Ca	**4.79**	6	4.44	4.98	No Guideline Required	5	88	ND-5.78	6/yr
Chromium	ug/L as Cr	**ND**	6	ND	0.00	50 MAC	ND	89	ND-0	6/yr
Cobalt	ug/L as Co	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Copper	ug/L as Cu	**0.85**	6	0.73	1.85	2000 MAC / ≤ 1000 AO	1.5	89	ND-30.5	6/yr
Iron	ug/L as Fe	**25.2**	6	13.9	63.30	≤ 300 AO	30	89	ND-217	6/yr
Lead	ug/L as Pb	**ND**	6	ND	0.00	5 MAC	ND	89	ND-0.4	6/yr
Lithium	ug/L as Li	**Not tested in 2020**					ND	77	ND-10.4	6/yr
Magnesium	mg/L as Mg	**1.14**	6	1.01	1.19	No Guideline Required	1.18	88	0.44-1.6	6/yr
Manganese	ug/L as Mn	**4.8**	6	1.4	22.80	120 MAC / ≤ 20 AO	5	89	ND-81.8	6/yr
Mercury, Total	ug/L as Hg	**ND**	6	ND	0.00	1.0 MAC	ND	87	ND-0.16	6/yr
Molybdenum	ug/L as Mo	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Nickel	ug/L as Ni	**ND**	6	ND	0.00		ND	89	ND-3	6/yr
Potassium	mg/L as K	**0.13**	6	0.13	0.14		0.14	88	ND-0.23	6/yr
Selenium	ug/L as Se	**ND**	6	ND	0.00	50 MAC	ND	89	ND-0	6/yr
Silver	ug/L as Ag	**ND**	6	ND	0.00	No Guideline Required	ND	89	ND-0.02	6/yr
Sodium	mg/L as Na	**1.62**	6	1.48	1.67	≤ 200 AO	1.7	88	ND-2.91	6/yr
Strontium	ug/L as Sr	**14.6**	6	13.5	15.50	7000 MAC	15.4	89	6.3-21.8	6/yr
Thallium	ug/L as Tl	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Tin	ug/L as Sn	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Titanium	mg/L as Ti	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Uranium	ug/L as U	**ND**	6	ND	0.00	20 MAC	ND	89	ND-0	6/yr
Vanadium	ug/L as V	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Zinc	ug/L as Zn	**ND**	6	ND	0.00	≤ 5000 AO	ND	89	ND-82.9	6/yr
Zirconium	ug/L as Zr	**ND**	6	ND	0.00		ND	89	ND-0	6/yr
Microbial Parameters										
Coliform Bacteria										
Coliforms, Total	Coliforms/100 mL	**9**	419	ND	470.00		11	2472	ND-24200	250/yr
E. coli	*E. coli*/100 mL	**ND**	419	ND	2.00		ND	2468	ND-15	250/yr

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Heterotrophic / Other Bacteria										
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	**300.0**	396.0	70.0	940.0		350	2417	ND-7200	250/yr
Cyanobacterial Toxins										
Anatoxin a	ug/L	Analyzed as required - last analyzed in 2005					ND	2	ND - ND	Special
Microcystin-LR	ug/L	Analyzed as required - last analyzed in 2011				1.5 MAC (Total Microcystins)	ND	11	ND - 0.34	Special
Parasites										
Cryptosporidium, Total oocysts	oocysts/100 L	**ND**	8	ND	0.00	Zero detection desirable	0	109	0 - 1	8/yr
Giardia, Total cysts	cysts/100 L	**ND**	8	ND	0.00	Zero detection desirable	0	108	0 - 2	8/yr
Radiological Parameters (ND means less than instrument can detect)										
Gross alpha radiation	Bq/L	**ND**	2	ND	0.00	0.5 (Screening)	ND	21	ND - 0.04	2/yr
Gross beta radiation	Bq/L	**0.02**	2	ND	0.02	1.0 (Screening)	ND	21	ND - 0.11	2/yr
Iodine-131	Bq/L	**ND**	2	ND	0.00	6 Bq/L	ND	17	ND - 0.0	Special
Cesium-134	Bq/L	**Not tested in 2020**					ND	14	ND - 0.20	Special
Cesium-137	Bq/L	**ND**	2	ND	0.00	10 Bq/L	ND	17	ND - 0.0	Special
Ruthenium-103	Bq/L	**Not tested in 2020**					ND	12	ND - 0.0	Special
Uranium	ug/L as U	**ND**	6	ND	0.00	20 MAC	ND	89	ND-0	6/yr
Organic Parameters (ND means less than instrument can detect)										
Pesticides/Herbicides										
1,4-DDD	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
1,4'-DDE	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
1,4'-DDT	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
2,4,5-T	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	18	ND-0	2/yr
2,4,5-TP (Silvex)	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	18	ND-0	2/yr
2,4-D (2,4-Dichlorophenoxy acetic acid)	ug/L	**ND**	2	ND	0.00	100 MAC	ND	1	ND-0	2/yr
2,4-D (BEE)	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
2,4-DP (Dichlorprop)	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
4,4'-DDD	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-0	2/yr
4,4'-DDE	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-0	2/yr
4,4'-DDT	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-0	2/yr
Alachlor	ug/L	**Not tested in 2020**				Guideline Archived	ND	8	ND-ND	2/yr
Aldicarb	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0	2/yr
Aldrin	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Aldrin + Dieldrin	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	6	ND-0	2/yr
Atrazine	ug/L	**ND**	2	ND	0.00	5 MAC	ND	18	ND-0	2/yr
Azinphos-methyl	ug/L	**ND**	2	ND	0.00	20 MAC	ND	18	ND-0	2/yr
BHC (alpha)	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
BHC (beta)	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	2/yr
BHC (delta)	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
Bendiocarb	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0	Irregular

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Bromacil	ug/L	**ND**	2	ND	0.00		ND	10	ND-0	2/yr
Bromoxynil	ug/L	**ND**	2	ND	0.00	5.0 MAC	ND	15	ND-0	2/yr
Captan	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
Carbaryl	ug/L	**ND**	2	ND	0.00	90 MAC	ND	19	ND-0	2/yr
Carbofuran	ug/L	**ND**	2	ND	0.00	90 MAC	ND	19	ND-0	2/yr
Chlordane (alpha)	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	11	ND-0	2/yr
Chlordane (gamma)	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
Chlorpyrifos (Dursban)	ug/L	**ND**	2	ND	0.00	90 MAC	ND	1	ND-0	2/yr
Chlorothalonil	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
Cyanazine (Bladex)	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	16	ND-0	2/yr
Demeton	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
Desisopropylatrazine	ug/L	**ND**	2	ND	0.00		Not reported prior to 2020			2/yr
Diazinon	ug/L	**ND**	2	ND	0.00	20 MAC	ND	19	ND-0	2/yr
Dicamba	ug/L	**ND**	2	ND	0.00	120 MAC	ND	20	ND-0	2/yr
Diclofop-methyl	ug/L	**ND**	2	ND	0.0	9 MAC	ND	15	ND-ND	2/yr
Dichlorvos	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Dieldrin	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Dimethoate	ug/L	**ND**	2	ND	0.00	20 MAC	ND	19	ND-0	2/yr
Dinoseb (DNBP)	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-0	2/yr
Diquat	ug/L	**ND**	2	ND	0.00	70 MAC	ND	18	ND-0	2/yr
Endosulfan I	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Endosulfan II	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Endosulfan Sulphate	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
Endosulfan (Total)	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
Endrin	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
Endrin Aldehyde	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
Endrin Ketone	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
Ethion	ug/L	**ND**	2	ND	0.00		ND	16	ND-0	2/yr
Ethyl Parathion	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
Fenchlorophos (Ronnel)	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Fenthion	ug/L	**ND**	2	ND	0.00		ND	16	ND-0	2/yr
Fonofos	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Glyphosate	ug/L	**ND**	2	ND	0.00	280 MAC	ND	18	ND-0	2/yr
Heptachlor	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
Heptachlor Epoxide	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
Imazapyr	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
Imidacloprid	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
IPBC	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
Lindane (BHC-gamma)	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Malathion	ug/L	**ND**	2	ND	0.00	190 MAC	ND	19	ND-0	2/yr
MCPA	ug/L	**ND**	2	ND	0.00	100 MAC	ND	22	ND-0	2/yr
MCPP	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Methoxychlor	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
Methyl Parathion	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	20	ND-0	2/yr
Metolachlor	ug/L	**ND**	2	ND	0.00	50 MAC	ND	18	ND-0	2/yr
Metribuzin (Sencor)	ug/L	**ND**	2	ND	0.00	80 MAC	ND	14	ND-0	2/yr
Mevinphos	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Mirex	mg/L	**ND**	2	ND	0.00	Guideline Archived	ND	18	ND-0	2/yr
Nitrilotriacetic acid (NTA)	ug/L	**ND**	2	ND	0.00	400 MAC	ND	18	ND-0.1	Irregular
Oxychlordane	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
Parathion	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	10	ND-0	2/yr
Paraquat (ion)	ug/L	**ND**	2	ND	0.00	7 MAC	ND	18	ND-0	2/yr
Permethrin	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
Phorate (Thimet)	ug/L	**ND**	2	ND	0.00	2 MAC	ND	18	ND-0	2/yr
Phosmet	ug/L	**ND**	2	ND	0.00		ND	17	ND-0	2/yr
Picloram	ug/L	**ND**	2	ND	0.00	190 MAC	ND	19	ND-0	2/yr
Prometryn	ug/L	**ND**	2	ND	0.00		ND	13	ND-ND	Irregular
Simazine	ug/L	**ND**	2	ND	0.00	10 MAC	ND	17	ND-0	2/yr
Tebuthiuron	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	2/yr
Temephos	ug/L	**Not tested in 2020**				Guideline Archived	ND	6	ND-ND	2/yr
Terbufos	ug/L	**ND**	2	ND	0.00	1 MAC	ND	18	ND-0	2/Yyr
Toxaphene	ug/L	**Not tested in 2020**				Guideline Archived	ND	13	ND-ND	2/Yyr
Trifluralin	ug/L	**ND**	2	ND	0.00	45 MAC	ND	19	ND-0	2/Yyr
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene	ug/L	**0.01**	2	ND	0.01	Guideline Archived	ND	19	ND-0	2/yr
Acenaphthylene	ug/L	**0.01**	2	ND	0.02	Guideline Archived	ND	19	ND-0	2/yr
Anthracene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0	2/yr
Benzo(a)anthracene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	18	ND-0.02	2/yr
Benzo(a)pyrene	ug/L	**ND**	2	ND	0.00	0.04 MAC	ND	16	ND-0.01	2/yr
Benzo(b)fluoranthene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	17	ND-0	2/yr
Benzo(g,h,i)perylene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	1	ND-0	2/yr
Benzo(b&j)fluoranthene	ug/L	**ND**	2	ND	0.00	Guideline Archived	Not reported prior to 2020			2/yr
Benzo(k)fluoranthene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	1	ND-0	2/yr
Chrysene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0.03	2/yr
Dibenz(a,h)anthracene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0.04	2/yr
Fluoranthene	ug/L	**0.02**	2	ND	0.03	Guideline Archived	ND	19	ND-0.02	2/yr
Fluorene	ug/L	**0.01**	2	ND	0.01	Guideline Archived	ND	19	ND-0.03	2/yr
Indeno(1,2,3-c,d)pyrene	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0	2/yr

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Naphthalene	ug/L	**0.01**	2	ND	0.02	Guideline Archived	ND	18	ND-0	2/yr
Phenanthrene	ug/L	**0.01**	2	ND	0.02	Guideline Archived	ND	19	ND-0.08	2/yr
Pyrene	ug/L	**0.02**	2	ND	0.03	Guideline Archived	ND	19	ND-0	2/yr
Volatile Hydrocarbons	ug/L	**ND**	4	ND	0.00	Guideline Archived	ND	22	ND-0	2/yr
Phenols										
2,3,4,5-Tetrachlorophenol	ug/L	**ND**	2	ND	0.00		ND	6	ND-ND	2/yr
2,3,4,6-Tetrachlorophenol	ug/L	**ND**	2	ND	0.00	100 MAC and ≤ 1.0 AO	ND	13	ND-ND	2/yr
2,3,5,6-Tetrachlorophenol	ug/L	**ND**	2	ND	0.00		ND	7	ND-0	2/yr
2,4,6-Trichlorophenol	ug/L	**ND**	2	ND	0.00	5.0 MAC and ≤ 2.0 AO	ND	17	ND-ND	2/yr
2,4-Dichlorophenol	ug/L	**ND**	2	ND	0.00	900 MAC and ≤ 0.3 AO	ND	1	ND-0	2/yr
2,4-Dimethylphenol	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
2,4-Dinitrophenol	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	2/yr
2-Chlorophenol	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
2-Nitrophenol	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	2/yr
4,6-Dinitro-2-Methylphenol	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
4-Chloro-3-Methylphenol	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	2/yr
4-Nitrophenol	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	2/yr
Alpha-Terpineol	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	2/yr
Pentachlorophenol	ug/L	**ND**	2	ND	0.00	60 MAC and ≤ 30 AO	ND	17	ND-0	2/yr
Phenol	ug/L	**ND**	2	ND	0.00		ND	21	ND-6.2	2/yr
Total Phenolics	ug/L	ND	2	ND	0.00	Guideline Archived	1.3	10	ND-8.2	2/yr
Polychlorinated Biphenyls (PCBs)										
PCB-1016	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
PCB-1221	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
PCB-1232	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
PCB-1242	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
PCB-1248	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
PCB-1254	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
PCB-1260	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	16	ND-ND	Irregular
PCB-1262	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	4	ND-ND	Irregular
PCB-1268	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	4	ND-ND	Irregular
Total PCBs	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	15	ND-ND	Irregular
Other Synthetic Chemicals										
1,1,1-Trichloroethane	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
1,1,1,2-Tetrachloroethane	ug/L	**ND**	2	ND	0.0		ND	19	ND-ND	
1,1,2,2-Tetrachloroethane	ug/L	**ND**	2	ND	0.0		ND	17	ND-ND	
1,1,2-Trichloroethane	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
1,1-Dichloroethane	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	
1,1-Dichloroethene (1,1-Dichloroethylene)	ug/L	**ND**	2	ND	0.00	14 MAC	ND	1	ND-0	

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
1,2,3-Trichlorobenzene	ug/L	**ND**	2	ND	0.00		ND	12	ND-0	
1,2,4-Trichlorobenzene	ug/L	**ND**	2	ND	0.00		ND	21	ND-0.2	
1,2-Dibromoethane	ug/L	**ND**	2	ND	0.00		ND	12	ND-0	
1,2-Dichlorobenzene	ug/L	**ND**	2	ND	0.00	200 MAC and ≤ 3.0 AO	ND	19	ND-0	
1,2-Dichloroethane	ug/L	**ND**	2	ND	0.00	5.0 MAC	ND	19	ND-0	
1,2-Dichloroethene (cis)	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
1,2-dichloroethene (trans)	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
1,2-Dichloropropane	ug/L	**ND**	2	ND	0.00		ND	1	ND-0	
1,2-Diphenylhydrazine	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
1,3-Dichlorobenzene	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	
1,3-Dichloropropene (cis)	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
1,3-Dichloropropene (trans)	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
1,4-Dichlorobenzene	ug/L	**ND**	2	ND	0.00	5.0 MAC and ≤ 1.0 AO	ND	19	ND-0	
2,4-Dinitrotoluene	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
2,6-Dinitrotoluene	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
2-Chloronaphthalene	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
1-Methylnaphthalene	ug/L	**ND**	2	ND	0.00		ND	3	ND-0	
2-Methylnaphthalene	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
3,3'-Dichlorobenzidene	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
4-Bromophenyl-phenylether	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
4-Chlorophenyl-phenylether	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
Atrazine	ug/L	**ND**	2	ND	0.00	5.0 MAC	ND	18	ND-0	
Atrazine + Desethyl Atrazine	ug/L	**ND**	2	ND	0.00		ND	8	ND-0	
Benzene	ug/L	**ND**	4	ND	0.00	5.0 MAC	ND	23	ND-0	
Benzidine	ug/L	**Not tested in 2020**					ND	15	ND-ND	
Bis(-2-chloroethoxy) methane	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
Bis(-2-chloroethyl) ether	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
Bis(2-chloroisopropyl) ether	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
Bis(2-ethylhexyl) phthalate	ug/L	**ND**	2	ND	0.00		ND	18	ND-1.7	
Bromodichloromethane	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
Bromobenzene	ug/L	**ND**	2	ND	0.00		ND	8	ND-ND	
Bromoform	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
Bromomethane	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
Butylbenzyl phthalate	ug/L	**ND**	2	ND	0.00		ND	17	ND-ND	
Carbon Tetrachloride (Tetrabromomethane)	ug/L	**ND**	2	ND	0.00	2.0 MAC	ND	1	ND-0	
Chloroform	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
Chloroethane	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
Chloromethane	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
Desethyl Atrazine	ug/L	**ND**	2	ND	0		ND	13	ND-ND	

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Dibromochloromethane	ug/L	**ND**	2	ND	0		ND	1	ND-0	
Dibromomethane	ug/L	**Not tested in 2020**					ND	6	ND-ND	
Dichlorodifluoromethane	ug/L	**ND**	2	ND	0.00		ND	14	ND-0	
Dichloromethane	ug/L	**ND**	2	ND	0.00	50 MAC	ND	19	ND-0	
Diethyl phthalate	ug/L	**ND**	2	ND	0.00		ND	18	ND-0.6	
Dimethyl phthalate	ug/L	**ND**	2	ND	0.00		ND	18	ND-0	
Di-n-butyl phthalate	ug/L	**ND**	2	ND	0.00		ND	16	ND-4.9	
Di-n-ocyl phthalate	ug/L	**ND**	2	ND	0.00		ND	17	ND-ND	
Diuron	ug/L	**ND**	2	ND	0.00	150 MAC	ND	13	ND-0	
Ethylbenzene	ug/L	**ND**	4	ND	0.00	140 MAC and ≤ 1.6 AO	ND	19	ND-ND	
Formaldehyde	ug/L	**ND**	4	ND	0.00	No Guideline Required	ND	19	ND-18	
Hexachlorobenzene	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
Hexachlorobutadiene	ug/L	**ND**	2	ND	0.00		ND	25	ND-0	
Hexachlorocyclopentadiene	ug/L	**ND**	2	ND	0.00		ND	20	ND-0	
Hexachloroethane	ug/L	**ND**	2	ND	0.00		ND	21	ND-0	
Isophorone	ug/L	**ND**	2	ND	0.00	30 MAC	ND	19	ND-0	
Methyltertiarybutylether (MTBE)	ug/L	**ND**	4	ND	0.00	15 AO	ND	30	ND-0	
Monochlorobenzene	ug/L	**ND**	2	ND	0.00	80 MAC and ≤ 30 AO	ND	19	ND-0	
Nitrobenzene	ug/L	**ND**	1	ND	0	0.04 MAC	ND	11	ND-ND	
N-nitrosodimethylamine (NDMA)	ug/L	**ND**	2	ND	0.00	0.04 MAC	ND	19	ND-0	
N-nitroso-di-n-propylamine	ug/L	**ND**	2	ND	0.00		ND	19	ND-0	
N-nitrosodiphenylamine	ug/L	**ND**	2	ND	0		ND	19	ND-0	
Octachlorostyrene	ug/L	**ND**	2	ND	0.00		ND	17	ND-ND	
Styrene	ug/L	**ND**	4	ND	0.00		ND	19	ND-ND	
Tetrachloroethene	ug/L	**ND**	2	ND	0.00	10 MAC	ND	19	ND-0	
Toluene	ug/L	**ND**	4	ND	0.00	60 MAC and ≤ 24 AO	ND	23	ND-0	
Triallate	ug/L	**ND**	2	ND	0.00	Guideline Archived	ND	19	ND-0	
Trichloroethene	ug/L	**ND**	2	ND	0.00	5.0 MAC	ND	15	ND-ND	
Trichlorofluoromethane	ug/L	**ND**	2	ND	0.00		ND	18	ND-ND	
Trichlorotrifluoroethane	ug/L	**ND**	2	ND	0		ND	9	ND-ND	
Vinyl Chloride	ug/L	**ND**	2	ND	0.00	2.0 MAC	ND	19	ND-0	
o-Xylene	ug/L	**ND**	4	ND	0.00		ND	18	ND-ND	
m&p-Xylene	ug/L	**ND**	4	ND	0.00		ND	23	ND-0	
Xylenes (Total)	ug/L	**ND**	4	ND	0.00	90 MAC and ≤ 20 AO	ND	23	ND-0	
Miscellaneous										
Perfluorobutanioc Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluoropentanoic Acid (PFPeA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorohexanoic Acid (PFHxA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluoroheptanoic Acid (PFHpA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr

Appendix A, Table 1, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Perfluorooctanoic Acid (PFOA)	ug/L	**ND**	1	ND	0.00	0.2 MAC	Not tested prior to 2020			2/yr
Perfluorononanoic Acid (PFNA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorodecanoic Acid (PFDA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluoroundecanoic Acid (PFUnA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perflurotridecanoic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorotetradecnoic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorobutanesulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluoropentanesulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorohexanesulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluoroheptanesulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorooctanesulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorononane sulfonic Acid (PFOS)	ug/L	**ND**	1	ND	0.00	0.6 MAC	Not tested prior to 2020			2/yr
Perfluorodecanesulfonic Acid (PFDS)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
Perfluorooctane Sulfonamide (PFOSA)	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
4:2 Flurotelomer Sulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
6:2 Flurotelomer Sulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			2/yr
8:2 Flurotelomer Sulfonic Acid	ug/L	**ND**	1	ND	0.00		Not tested prior to 2020			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. 2020 TREATED WATER QUALITY AFTER GOLDSTREAM (JAPAN GULCH) WATER TREATMENT PLANT

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	**13.1**	64	11.8	14		13.5	79	6.92-17.6	12/yr
Carbon, Dissolved Organic	mg/L	**1.7**	11	1.4	3.9		1.76	66	0.59-370	12/yr
Carbon, Total Organic	mg/L	**1.65**	12	1.4	4.6	Guideline Archived	1.84	66	0.93-4.99	12/yr
Colour, True	TCU	**4**	99	ND	10	≤ 15 AO	4	297	ND-10	52/yr
Conductivity @ 25ºC	uS/cm	**45.15**	90	40.7	60.6		45.4	299	31.1-98.6	52/yr
Hardness as $CaCO_3$	mg/L	**16.5**	11	15.1	17.6	No Guideline Required	17.45	98	12-22.1	12/yr
Odour	Odour Profile	**1**	400	1	1	Inoffensive	1	1179	1-1	250/yr
pH	pH units	**7.1**	88	6.6	7.51	7.0-10.5 AO	7	295	6.54-8.08	52/yr
Taste	Flavour Profile	**1**	398	1	1	Inoffensive	1	1172	1-1	250/yr
Total Dissolved Solids	mg/L	**26**	11	ND	42	≤500 AO	27	56	ND-78	12/yr
Total Suspended Solids	mg/L	**ND**	11	ND	6		ND	66	ND-10.9	12/yr
Total Solids	mg/L	**32**	19	18	52		33.5	6	17-38	12/yr
Turbidity, Grab Samples	NTU	**0.3**	449	0.2	2.8	1 Operational and ≤ 5 AO	0.31	1381	0.14-6.3	250/yr
Water Temperature, Grab Samples	degrees C	**10.5**	455	4.7	20.4	≤ 15 AO	10.8	1376	2.5-21.1	250/yr
Non-Metallic Inorganic Chemicals (ND means less than instrument can detect)										
Bromide	ug/L as Br	**ND**	4	ND	0		ND	26	ND-43	4/yr
Chloride	mg/L as Cl	4.4	2	4.3	4.50	≤ 250 AO	4	17	ND-5.3	4/yr
Cyanide	mg/L as Cn	**ND**	4	ND	0	0.2 MAC	ND	9	ND-0	4/yr
Fluoride	mg/L as F	**ND**	4	ND	0	1.5 MAC	ND	15	ND-0.03	4/yr
Nitrate, Dissolved	ug/L as N	**ND**	11	ND	45	10000 MAC	10	61	ND-47.5	12/yr
Nitrite, Dissolved	ug/L as N	**ND**	11	ND	5	1000 MAC	ND	60	ND-25	12/yr
Nitrate + Nitrite	ug/L as N	**ND**	11	ND	45		10	63	ND-47.5	12/yr
Nitrogen, Ammonia	ug/L as N	**280**	11	210	390		135	66	ND-500	12/yr
Nitrogen, Total Kjeldahl	ug/L as N	**404**	11	366	454		263	61	0-490	12/yr
Nitrogen, Total	ug/L as N	**428**	11	377	475		273	65	0-508	12/yr
Phosphate, Ortho, Dissolved	ug/L as P	**ND**	11	ND	0		ND	60	ND-6.2	12/yr
Phosphate, Total, Dissolved	ug/L as P	**ND**	11	ND	2.9		3.2	68	ND-18	12/yr
Phosphate, Total	ug/L as P	**1.8**	11	ND	4.5		3.25	66	ND-14	12/yr
Silica	mg/L as SiO2	**4.2**	11	3.7	4.9		3.93	57	2.91-4.3	12/yr
Silicon	ug/L as Si	**1880**	11	1650	2270		1,920.00	69	1400-2740	12/yr
Sulphate	mg/L as SO4	**1.1**	11	ND	1.9	≤ 500 AO	1.62	61	ND-5.31	12/yr

Appendix A, Table 2, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Sulphide	mg/L as H2S	**ND**	11	ND	0	≤ 0.05 AO	ND	33	ND-0.1	12/yr
Sulfur	mg/L as S	**ND**	11	ND	0		ND	68	ND-0	12/yr
Metallic Inorganic Chemicals (ND means less than instrument can detect)										
Aluminum	ug/L as Al	**15.7**	11	6.8	40.1	2900 MAC / 100 OG	16.5	69	4.5-67.7	12/yr
Antimony	ug/L as Sb	**ND**	11	ND	0.0	6 MAC	ND	69	ND-0	12/yr
Arsenic	ug/L as As	**ND**	11	ND	0	10 MAC	ND	69	ND-0.17	12/yr
Barium	ug/L as Ba	**3.75**	11	3.3	4.1	2000 MAC	3.8	69	3.3-4.8	12/yr
Beryllium	ug/L as Be	**ND**	11	ND	0		ND	68	ND-0	12/yr
Bismuth	ug/L as Bi	**ND**	11	ND	0		ND	69	ND-0.01	12/yr
Boron	ug/L as B	**ND**	11	ND	0	5000 MAC	ND	69	ND-0	12/yr
Cadmium	ug/L as Cd	**ND**	11	ND	0	7 MAC	ND	69	ND-0.06	12/yr
Calcium	mg/L as Ca	**4.74**	11	4.41	5.12	No Guideline Required	5.02	67	4.18-6.82	12/yr
Chromium	ug/L as Cr	**ND**	11	ND	0	50 MAC	ND	69	ND-1.2	12/yr
Cobalt	ug/L as Co	**ND**	11	ND	0		ND	69	ND-0.04	12/yr
Copper	ug/L as Cu	**7.18**	11	4.54	10.9	2000 MAC / ≤ 1000 AO	15.7	69	1.03-202	12/yr
Iron	ug/L as Fe	**24.5**	11	12.7	101	≤ 300 AO	26.7	69	12.2-198	12/yr
Lead	ug/L as Pb	**ND**	11	ND	0	5 MAC	ND	69	ND-0.92	12/yr
Lithium	ug/L as Li	**ND**	2	ND	0		ND	40	ND-13.5	12/yr
Magnesium	mg/L as Mg	**1.14**	11	1	1.19	No Guideline Required	1.16	67	0.15-1.41	12/yr
Manganese	ug/L as Mn	**4.75**	11	1.6	34	120 MAC / ≤ 20 AO	5	69	ND-51.1	12/yr
Mercury, Total	ug/L as Hg	**ND**	11	ND	0	1.0 MAC	ND	64	ND-0	12/yr
Molybdenum	Ug/L as Mo	**ND**	11	ND	0		ND	69	ND-0	12/yr
Nickel	mg/L as Ni	**ND**	11	ND	0		ND	69	ND-1.6	12/yr
Potassium	mg/L as K	**0.13**	11	0.13	0.15		0.14	67	0.11-0.22	12/yr
Selenium	ug/L as Se	**ND**	11	ND	0	50 MAC	ND	69	ND-0	12/yr
Silver	ug/L as Ag	**ND**	11	ND	0	No Guideline Required	ND	69	ND-0.06	12/yr
Sodium	mg/L as Na	**1.6**	11	1.5	1.66	≤ 200 AO	1.7	67	1.39-3.56	12/yr
Strontium	ug/L as Sr	**14.7**	11	13.8	15.8	7000 MAC	15.4	69	12.8-19.7	12/yr
Thallium	ug/L as Tl	**ND**	11	ND	0		ND	69	ND-0	12/yr
Tin	ug/L as Sn	**ND**	11	ND	0		ND	69	ND-0.22	12/yr
Titanium	ug/L as Ti	**ND**	11	ND	0		ND	69	ND-0	12/yr
Uranium	ug/L as U	**ND**	11	ND	0	20 MAC	ND	69	ND-0.02	12/yr
Vanadium	ug/L as V	**ND**	11	ND	0		ND	69	ND-0	12/yr
Zinc	ug/L as Zn	**ND**	11	ND	0	≤ 5000 AO	ND	69	ND-54.1	12/yr
Zirconium	ug/L as Zr	**ND**	11	ND	0		ND	69	ND-0	12/yr

Appendix A, Table 2, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Microbial Parameters (ND means less than method or instrument can detect)										
Coliform Bacteria										
Coliforms, Total	CFU/100 mL	**ND**	454	ND	32	0 MAC	0	1403	ND-200	250/yr
E. coli	CFU/100 mL	**ND**	454	ND	0	0 MAC	0	1403	ND-0	250/yr
Heterotrophic/Other Bacteria										
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	**ND**	223	ND	230		ND	1310	ND-770	250/yr
Disinfectants (ND means less than instrument can detect)										
Disinfectants										
Chlorine, Total Residual	mg/L as Cl_2	**1.87**	459	1.23	2.1	No Guideline Required (chloramines)	1.90	199	0.83-2.33	250/yr
Monochloramine	mg/L as Cl_2	**1.68**	422	0	1.93		1.75	199	0.03-2.17	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. 2020 TREATED WATER QUALITY AFTER SOOKE RIVER ROAD WATER TREATMENT PLANT

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range Minimum	Range Maximum	≤ = Less than or equal to	10-Year Median	Samples Analyzed	Range Minimum - Maximum	
Physical Parameters (ND means less than instrument can detect)										
Alkalinity, Total	mg/L	**16.5**	18	7.1	17.4		16.1	129	10.2-19.4	12/yr
Colour, True	TCU	**4.0**	39	ND	6.0	≤ 15 AO	3.2	484	ND-11.3	52/yr
Conductivity @ 25ºC	uS/cm	**57.0**	37	54.2	65.2		56.1	485	26.4-71.7	52/yr
Odour	Flavour Profile	**1.0**	33	1.0	1.0	Inoffensive	1	465	1-1	52/yr
pH	pH units	**7.7**	30	7.1	8.3	7.0-10.5 AO	7.4	484	6.32-8.32	52/yr
Taste	Flavour Profile	**1.0**	33	1.0	1.0	Inoffensive	1	463	1-1	52/yr
Turbidity, Grab Samples	NTU	**0.3**	40	0.2	0.6	1 MAC	0.3	505	0.15-1.7	52/yr
Water Temperature, Grab Samples	degrees C	**9.7**	39	5.3	18.9	≤ 15 AO	10.75	510	1.19-20	52/yr
Microbial Parameters (ND means less than instrument can detect)										
Coliform Bacteria										
Coliform, Total	CFU/100 mL	**ND**	40	ND	0	0 MAC	0	512	ND-12	52/yr
E. coli	CFU/100 mL	**ND**	40	ND	0	0 MAC	0	512	ND-0	52/yr
Heterotrophic Bacteria										
Hetero. Plate Count, 28C (7 day)	CFU/1 mL	**ND**	32	ND	40		ND	463	ND-1230	52/yr
Disinfectants (ND means less than instrument can detect)										
Disinfectants										
Chlorine, Total Residual	mg/L as Cl_2	**1.77**	37	1.27	2.31	3.0 MAC (chloramines)	1.81	36	1.29-2.12	52/yr
Monochloramine	mg/L as Cl_2	**1.62**	37	1.2	2.16		1.54	36	1.15-1.84	52/yr
Metallic Inorganic Chemicals (ND means less than instrument can detect)										
Aluminum	ug/L as Al	**12.4**	6	6.2	16.9	2900 MAC / 100 OG	13.9	23	5.3-22.7	6/yr
Antimony	ug/L as Sb	**ND**	6	ND	0	6 MAC	ND	23	ND-0	6/yr
Arsenic	ug/L as As	**ND**	6	ND	0	10 MAC	ND	23	ND-0	6/yr
Barium	ug/L as Ba	**3.6**	6	3.3	4	2000 MAC	3.8	23	3.5-4.2	6/yr
Beryllium	ug/L as Be	**ND**	6	ND	0		ND	23	ND-0	6/yr
Bismuth	ug/L as Bi	**ND**	6	ND	0		ND	23	ND-0	6/yr
Boron	ug/L as B	**ND**	6	ND	0	5000 MAC	ND	23	ND-0	6/yr
Cadmium	ug/L as Cd	**ND**	6	ND	0	7 MAC	ND	23	ND-0.02	6/yr
Calcium	mg/L as Ca	**4.7**	6	4.41	5.03	No Guideline Required	5140	1	5140-5140	6/yr
Chromium	ug/L as Cr	**ND**	6	ND	0	50 MAC	ND	23	ND-0	6/yr
Cobalt	ug/L as Co	**ND**	6	ND	0		ND	23	ND-0	6/yr
Copper	ug/L as Cu	**26**	6	14.2	41	2000 MAC / ≤ 1000 AO	31.5	23	10.9-80.4	6/yr

Appendix A, Table 3, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	**22.8**	6	13.2	33	≤ 300 AO	24.4	23	12-53	6/yr
Lead	ug/L as Pb	**ND**	6	ND	0.22	5 MAC	0.29	24	ND-0.64	6/yr
Lithium	ug/L as Li	**ND**	2	ND	0		ND	9	ND-0	6/yr
Magnesium	mg/L as Mg	**1.12**	6	1.04	1.23	No Guideline Required	1.16	23	1-1.34	6/yr
Manganese	ug/L as Mn	**3.4**	6	1.6	5	120 MAC / ≤ 20 AO	3.6	23	1.3-10	6/yr
Mercury, Total	ug/L as Hg	**ND**	6	ND	0	1.0 MAC	ND	22	ND-0	6/yr
Molybdenum	ug/L as Mo	**ND**	6	ND	0		ND	23	ND-0	6/yr
Nickel	ug/L as Ni	**ND**	6	ND	0		ND	23	ND-0	6/yr
Potassium	mg/L as K	**0.13**	6	0.12	0.14		0.14	23	0.12-0.25	6/yr
Selenium	ug/L as Se	**ND**	6	ND	0	50 MAC	ND	23	ND-0.1	6/yr
Silver	ug/L as Ag	**ND**	6	ND	0	No Guideline Required	ND	23	ND-0	6/yr
Sodium	mg/L as Na	**4.11**	6	3.91	4.65	≤ 200 AO	4.51	23	3.74-7.02	6/yr
Strontium	ug/L as Sr	**15.15**	6	13.6	16.1	7000 MAC	14.7	23	13.2-16.2	6/yr
Thallium	ug/L as Tl	**ND**	6	ND	0		ND	23	ND-0.01	6/yr
Tin	ug/L as Sn	**ND**	6	ND	0		ND	23	ND-0	6/yr
Titanium	ug/L as Ti	**ND**	6	ND	0		ND	23	ND-0	6/yr
Uranium	ug/L as U	**ND**	6	ND	0	20 MAC	ND	23	ND-0	6/yr
Vanadium	ug/L as V	**ND**	6	ND	0		ND	23	ND-0	6/yr
Zinc	ug/L as Zn	**ND**	6	ND	9.6	≤ 5000 AO	ND	23	ND-7.8	6/yr
Zirconium	ug/L as Zr	**ND**	6	ND	0		ND	23	ND-0	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. 2020 TREATED WATER QUALITY TRANSMISSION / DISTRIBUTION SYSTEMS GOLDSTREAM SERVICE AREA

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	100Year Median	Samples Analyzed	Range	
				Minimum	Maximum				Minimum - Maximum	
Metals (ND means less than instrument can detect)										
Mercury, Total	ug/L as Hg	**ND**	23	ND	0.00	1 MAC	ND	72	ND-0	24/yr
Aluminum	ug/L as Al	**10.9**	23	6.3	23.80	2900 MAC / 100 OG	14.2	91	6.9-61	24/yr
Antimony	ug/L as Sb	**ND**	23	ND	0.00	6 MAC	ND	91	ND-0	24/yr
Arsenic	ug/L as As	**ND**	23	ND	0.11	10 MAC	ND	91	ND-0.5	24/yr
Barium	ug/L as Ba	**3.8**	23	3.3	4.40	2000 MAC	3.9	91	2.8-4.4	24/yr
Boron	ug/L as B	**ND**	23	ND	0.00	5000 MAC	ND	91	ND-0	24/yr
Cadmium	ug/L as B	**ND**	23	ND	0.00	7 MAC	ND	91	ND-0.01	24/yr
Chromium	ug/L as Cr	**ND**	23	ND	0.00	50 MAC	ND	91	ND-0	24/yr
Copper	mg/L as Cu	**30.8**	23	10.2	234.00	2000 MAC / 1000 AO	26.6	91	6.27-387	24/yr
Iron	ug/L as Fe	**25.15**	23	13.7	85.00	300 AO	26.4	91	12.5-118	24/yr
Lead	ug/L as Pb	**0.29**	23	ND	4.28	5 MAC	0.43	99	ND-185	24/yr
Manganese	ug/L as Mn	**5**	23	1.5	11.70	120 MAC / 20 AO	4.4	91	1.7-35.1	24/yr
Selenium	ug/L as Se	**ND**	23	ND	0.00	50 MAC	ND	91	ND-0	24/yr
Strontrium	ug/L as Sr	**15.3**	23	13.1	18.80	7000 MAC	15.2	91	13.4-18.4	24/yr
Uranium	ug/L as U	**ND**	23	ND	0.00	20 MAC	ND	91	ND-0	24/yr
Zinc	ug/L as Zn	**ND**	23	ND	16.00	5000 MAC	ND	91	ND-41.5	24/yr
Sodium	mg/L as Na	**1.59**	23	1.47	1.71		1.73	89	1.46-3.46	24/yr
Disinfection Byproducts Parameters (ND means less than method or instrument can detect)										
Nitrosamines										
N-Nitrosodiethylamine	ng/L	ND	24	ND	0		ND	48	ND-3.8	24/yr
N-Nitrosodimethylamine	ng/L	ND	24	ND	0	40 MAC	0	12	ND-0	24/yr
N-Nitroso-di-n-butylamine	ng/L	ND	24	ND	0		ND	43	ND-42	24/yr
N-nitroso-di-n-propylamine	ng/L	ND	24	ND	0		ND	17	ND-ND	24/yr
N-Nitrosoethylmethylamine	ng/L	ND	24	ND	0		ND	42	ND-0	24/yr
N-Nitrosomorpholine	ng/L	ND	24	ND	0		ND	43	ND-4.6	24/yr
N-nitrosopiperidine	ng/L	ND	24	ND	0		ND	41	ND-0	24/yr
N-Nitrosopyrrolidine	ng/L	ND	24	ND	0		ND	42	ND-0.08	24/yr
Haloacetic Acids (HAAs)										
Total Haloacetic Acids	ug/L	**18**	24	ND	23	80 MAC	15	129	ND-104	24/yr
Monobromoacetic Acid (MBAA)	ug/L	**ND**	24	ND	0		ND	128	ND-15.04	24/yr
Dichloroacetic Acid (DCAA)	ug/L	**11**	24	ND	16		ND	128	ND-23	24/yr
Trichloroacetic Acid (TCAA)	ug/L	**6.8**	24	ND	8.7		6.85	130	ND-35	24/yr
Bromochloroacetic Acid (BCAA)	ug/L	**ND**	24	ND	0		ND	128	ND-11.63	24/yr

Appendix A, Table 4, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			Target Sampling Frequency
Parameter Name	Units of Measure	Median Value	Samples Analyzed	Range		≤ = Less than or equal to	100Year Median	Samples Analyzed	Range	
				Minimum	Maximum				Minimum - Maximum	
Dibromoacetic Acid (DBAA)	ug/L	**ND**	24	ND	0		ND	128	ND-0	24/yr
Monochloroacetic Acid (MCAA)	ug/L	**ND**	24	ND	0		ND	128	ND-26.73	24/yr
Trihalomethanes (TTHMs)										
Total Trihalomethanes	ug/L	**17**	24	12	21	100 MAC	19	130	3.3-77.9	24/yr
Bromodichloromethane	ug/L	**2**	24	1	2.7		2	130	ND-5.7	24/yr
Bromoform	ug/L	**ND**	24	ND	0		ND	132	ND-0	24/yr
Chlorodibromomethane	ug/L	**ND**	24	ND	0		ND	130	ND-1.3	24/yr
Chloroform	ug/L	**15**	24	10	19		17	130	3.3-77.9	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

APPENDIX A
TABLE 5. 2020 TREATED WATER QUALITY DISTRIBUTION SYSTEM SOOKE SERVICE AREA

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Metals (ND means less than instrument can detect)										
Mercury, Total	ug/L as Hg	**ND**	6	ND	0	1 MAC	ND	19	ND-0	6/yr
Aluminum	ug/L as Al	**11.35**	6	8.7	17.5	2900 MAC / 100 OG	14.45	24	9.5-242	6/yr
Antimony	ug/L as Sb	**ND**	6	ND	0	6 MAC	ND	24	ND-0	6/yr
Arsenic	ug/L as As	**ND**	6	ND	0	10 MAC	ND	24	ND-0	6/yr
Barium	ug/L as Ba	**3.6**	6	3.2	4.2	2000 MAC	3.75	24	3.2-4.6	6/yr
Boron	ug/L as B	**ND**	6	ND	0	5000 MAC	ND	24	ND-0	6/yr
Cadmium	ug/L as B	**ND**	6	ND	0	7 MAC	ND	24	ND-0.02	6/yr
Chromium	ug/L as Cr	**ND**	6	ND	0	50 MAC	ND	24	ND-0	6/yr
Copper	mg/L as Cu	**4.64**	6	3.54	6.38	2000 MAC / 1000 AO	7.22	24	2.93-16.6	6/yr
Iron	ug/L as Fe	**29.4**	6	20	44.6	300 AO	36.30	24	19.5-56	6/yr
Lead	ug/L as Pb	**ND**	6	ND	0	5 MAC	ND	60	ND-22.5	6/yr
Manganese	ug/L as Mn	**2.9**	6	1.7	4.8	120 MAC / 20 AO	3.00	31	ND-1760	6/yr
Selenium	ug/L as Se	**ND**	6	ND	0	50 MAC	ND	23	ND-0	6/yr
Strontrium	ug/L as Sr	**18.45**	6	16.9	19.5	7000 MAC	18.50	23	16.1-21.5	6/yr
Uranium	ug/L as U	**ND**	6	ND	0	20 MAC	ND	24	ND-0	6/yr
Zinc	ug/L as Zn	**ND**	6	ND	0	5000 MAC	ND	24	ND-10.9	6/yr
Sodium	mg/L as Na	**4.17**	6	3.72	4.49	200 MAC	4.59	23	3.47-6.08	6/yr
Disinfection Byproducts Parameters (ND means less than method or instrument can detect)										
Nitrosamines										
N-Nitrosodiethylamine	ng/L	**ND**	6	ND	0		ND	15	ND-3.22	6/yr
N-Nitrosodimethylamine	ng/L	**ND**	6	ND	0	40 MAC	0	3	ND-0	6/yr
N-Nitroso-di-n-butylamine	ng/L	**ND**	6	ND	0		ND	12	ND-0	6/yr
N-nitroso-di-n-propylamine	ng/L	**ND**	6	ND	0		ND	5	ND-ND	6/yr
N-Nitrosoethylmethylamine	ng/L	**ND**	6	ND	0		ND	12	ND-0	6/yr
N-Nitrosomorpholine	ng/L	**ND**	6	ND	0		ND	13	ND-0.42	6/yr
N-nitrosopiperidine	ng/L	**ND**	6	ND	0		ND	12	ND-0.31	6/yr
N-Nitrosopyrrolidine	ng/L	**ND**	6	ND	0		ND	12	ND-0	6/yr
Haloacetic Acids (HAAs)										
Total Haloacetic Acids	ug/L	**27**	6	22	29	80 MAC	27	16	21-34	6/yr
Monobromoacetic Acid (MBAA)	ug/L	**ND**	6	ND	0		ND	16	ND-0	6/yr
Dichloroacetic Acid (DCAA)	ug/L	**13**	6	11	15		14	16	11-19	6/yr
Trichloroacetic Acid (TCAA)	ug/L	**13**	6	11	14		13.5	16	9.1-18	6/yr
Bromochloroacetic Acid (BCAA)	ug/L	**ND**	6	ND	0		ND	16	ND-0	6/yr

Appendix A, Table 5, continued

PARAMETER		2020 ANALYTICAL RESULTS				CANADIAN GUIDELINES	TEN-YEAR RESULTS (2010-2019)			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	
Dibromoacetic Acid (DBAA)	ug/L	**ND**	6	ND	0		ND	16	ND-0	6/yr
Monochloroacetic Acid (MCAA)	ug/L	**ND**	6	ND	0		ND	16	ND-0	6/yr
Trihalomethanes (TTHMs)										
Total Trihalomethanes	ug/L	**30**	6	26	43	100 MAC	35	16	31-49	6/yr
Bromodichloromethane	ug/L	**3**	6	3	3.7		3	17	ND-4.4	6/yr
Bromoform	ug/L	**ND**	6	ND	0		ND	17	ND-0	6/yr
Chlorodibromomethane	ug/L	**ND**	6	ND	0		ND	16	ND-0	6/yr
Chloroform	ug/L	**26**	6	23	39		32.5	16	28-45	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

Making a difference...together

REPORT TO THE CAPITAL REGIONAL DISTRICT BOARD
MEETING OF WEDNESDAY, JUNE 09, 2021

SUBJECT **Ed MacGregor Memorial Bursary 2021**

ISSUE SUMMARY

To announce the student selected from Greater Victoria School District #61 to receive the Capital Regional District's 2021 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 2021 recipient, as chosen by the selection committee from Greater Victoria School District No. 61 is Gabrielle Marier-Farmilo. Gabrielle achieved honours standing in many challenging academic courses while also contributing to the Fine Arts program at her school. Gabrielle has been accepted into the Engineering Program at Camosun College beginning in September 2021.

RECOMMENDATION

That the Capital Regional District Board receive the 2021 Ed MacGregor Memorial Bursary staff report for information.

Submitted by:	Carolyn Jenkinson, Manager, Executive Administration
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

Making a difference...together

REPORT TO CAPITAL REGIONAL DISTRICT BOARD
MEETING OF WEDNESDAY, JUNE 09, 2021

SUBJECT **Bylaw Nos. 4424 and 4425: Temporary Borrowing for Liquid Waste Management Core Area and Western Communities**

ISSUE SUMMARY

Approval of temporary borrowing bylaws authorizing short-term borrowing for projects included in the approved five-year capital plan for the Core Area and Western Communities Liquid Waste Service.

BACKGROUND

On August 12, 2020, the Board agreed to a cost-apportionment system for the Core Area and Western Communities Liquid Waste management service, per Liquid Waste Management Core Area and Western Communities Service Establishment Bylaw No. 1, 1995, Amendment Bylaw No. 3, 2020 (Bylaw No. 4304). All conveyance and treatment capital is to be cost apportioned on the basis of treatment capacity as outlined in Schedule C to Bylaw No. 4304.

At the October 14, 2020, meeting, the Capital Regional District (CRD) Board gave three readings to loan authorization Bylaw Nos. 4374 and 4375 to fund capital projects in the Core Area and Western Communities Liquid Waste Service.

Approval for Bylaw No. 4375 was obtained by via municipal council consent from 2/3s of area participants as per the alternative approval process outlined in s. 342 and 345 of the *Local Government Act.* Bylaw No. 4374 does not require additional consent for adoption.

Temporary borrowing bylaws allow interim financing during construction of capital projects before the long-term debt is issued by the Municipal Finance Authority (MFA). The proposed temporary borrowing bylaws are required to facilitate capital expenditures authorized for debt funding by loan authorization Bylaw Nos. 4374 and 4375.

The following two temporary borrowing Bylaws are proposed:

Service Area	Action	Purpose	Bylaw
3.798C	Temporary Borrowing Bylaw No 1	Short-term funding of planned works approved by the Province in the CRD's Liquid Waste Management Plan (LWMP).	4424 Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021
3.798C	Temporary Borrowing Bylaw No 2	Short-term funding of planned works arising since the approval of the LWMP.	4425 Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021

ALTERNATIVES

Alternative 1

1. That Bylaw No. 4424, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021" be introduced and read a first, second, and third time;
2. That Bylaw No. 4424 be adopted.
3. That Bylaw No. 4425, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021" be introduced and read a first, second, and third time;
4. That Bylaw No. 4425 be adopted.

Alternative 2

That Bylaw Nos. 4424 and 4425, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021" and "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021", be referred back to staff for additional information.

IMPLICATIONS

Financial Implications

The proposed temporary borrowing bylaw will provide access to interim financing according to the terms specified in Loan Authorization Bylaw Nos. 4374 and 4375. Temporary borrowing will not exceed the total amounts authorized by the loan authorization bylaws. The use of the temporary borrowing facility will be based on the timing of approved capital expenditures. The associated financing costs will be monthly variable interest-only payments.

The temporary borrowing will be converted to long-term borrowing as stated in the loan authorization bylaws upon completion of construction. Before long term debt issuance can be exercised, a security issuing bylaw will be brought forward for approval.

CONCLUSION

Temporary borrowing through the approval of Bylaw Nos. 4424 and 4425 is required to access interim financing to fund capital projects within the Core Area and Western Communities Liquid Waste Service. Timely access to borrowed funds in 2021 is critical to meeting the approved five-year capital plan program. All temporary borrowings will be converted to long-term debt up to the maximum stated in the approved Loan Authorization Bylaw Nos. 4374 and 4375.

RECOMMENDATION

1. That Bylaw No. 4424, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021" be introduced and read a first, second, and third time; and
2. That Bylaw No. 4424 be adopted.

3. That Bylaw No. 4425, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021" be introduced and read a first, second, and third time;
4. That Bylaw No. 4425 be adopted.

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., General Manager, Integrated Water Services
Concurrence	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Bylaw No. 4424, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021"
Appendix B: Bylaw No. 4425, "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021"

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4424

****

A BYLAW TO AUTHORIZE TEMPORARY BORROWINGS FOR LIQUID WASTE MANAGEMENT CORE AREA AND WESTERN COMMUNITIES SERVICE

****

WHEREAS:

A. It is provided by Section 409 of the *Local Government Act* that the Board may where it has adopted a loan authorization bylaw, without further assents or approvals, borrow temporarily from any person under the conditions therein set out;

B. The Board has adopted Bylaw No. 4374, cited as “Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 1, 2020” in the amount of twenty-two million, seven hundred thousand dollars ($22,700,000);

C. The issuance of the said Security Issuing bylaw has been temporarily deferred.

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

1. The Board is hereby authorized and empowered to borrow an amount or amounts not exceeding the sum of twenty-two million, seven hundred thousand dollars ($22,700,000) as the same may be required, at the prevailing interest rate.

2. The money so borrowed shall be used solely for the purpose set out in the said Bylaw No. 4374.

3. The proceeds from the Security Issuing bylaw, or so much thereof as may be necessary, shall be used to repay the money so borrowed.

4. This Bylaw may be cited as "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 1, 2021”.

READ A FIRST TIME THIS	day of	2021
READ A SECOND TIME THIS	day of	2021
READ A THIRD TIME THIS	day of	2021
ADOPTED THIS	day of	2021

_____ _____

CHAIR CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4425

****

A BYLAW TO AUTHORIZE TEMPORARY BORROWINGS FOR LIQUID WASTE MANAGEMENT CORE AREA AND WESTERN COMMUNITIES SERVICE

****

WHEREAS:

A. It is provided by Section 409 of the *Local Government Act* that the Board may where it has adopted a loan authorization bylaw, without further assents or approvals, borrow temporarily from any person under the conditions therein set out;

B. The Board has adopted Bylaw No. 4375, cited as "Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 2, 2020" in the amount of thirty-four million, three hundred thousand dollars ($34,300,000);

C. The issuance of the said Security Issuing bylaw has been temporarily deferred.

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

1. The Board is hereby authorized and empowered to borrow an amount or amounts not exceeding the sum of thirty-four million, three hundred thousand dollars ($34,300,000) as the same may be required, at the prevailing interest rate.

2. The money so borrowed shall be used solely for the purpose set out in the said Bylaw No. 4375.

3. The proceeds from the Security Issuing bylaw, or so much thereof as may be necessary, shall be used to repay the money so borrowed.

4. This Bylaw may be cited as "Temporary Borrowing Liquid Waste Management Core Area and Western Communities Service Bylaw No. 2, 2021".

READ A FIRST TIME THIS	day of	2021
READ A SECOND TIME THIS	day of	2021
READ A THIRD TIME THIS	day of	2021
ADOPTED THIS	day of	2021

_____ _____

CHAIR CORPORATE OFFICER

Making a difference...together

REPORT TO ELECTORAL AREAS COMMITTEE
MEETING OF WEDNESDAY, JUNE 9, 2021

Subject **Livestock Injury Compensation Service Separation for Electoral Area Participation**

ISSUE

The Electoral Areas Committee (EAC) directed staff to prepare proposed service establishment bylaw amendments to provide for livestock kill compensation service separation within the electoral areas.

BACKGROUND

The Capital Regional District (CRD) operates a livestock-injury-by-dog compensation service as a sub-service under its regulatory animal control service, established by Letters Patent OIC 446/1979 and governed by CRD Bylaw No. 1465, Animal Regulation and Impounding Bylaw No. 1, 1986. Participants are the three electoral areas. Due to the nature of regional district cost apportionment, it is not possible to craft a solution where a single electoral area only pays for compensation within its electoral area. A solution is separation of this livestock injury service from the main animal control compensation service into a regulatory compensation service for each electoral area.

In discussion at the July 8, 2020 EAC, staff were directed to return with details on the service separation process. The earliest this change could have effect is for the 2022 fiscal year.

After consultation with the Province, CRD staff were advised to convert the Letters Patent for the main animal control service, required when modifying service powers under the *Local Government Act*, at the same time as creating the separate livestock injury compensation services.

The following bylaws are proposed, and may be approved by Electoral Area Director consent:
1. Appendix A - Bylaw No. 4416, Animal Control Service Establishing Bylaw, 2021. This converts the supplemental letters patent into an establishing bylaw;
2. Appendix B - Bylaw No. 4417, Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021, which establishes a service for the Juan de Fuca;
3. Appendix C - Bylaw No. 4418, Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021, which establishes a service for Salt Spring Island; and
4. Appendix D - Bylaw No. 4419, Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021, which establishes a service for the Southern Gulf Islands.

To establish the operation of the service – that is, how applications for compensation are received and considered, and to set an annual maximum for each new service – Bylaw No. 4264, Animal Regulation and Impounding Bylaw No. 1, 1986, Amendment Bylaw No. 11, 2021 (Appendix E), should be read but not yet adopted until after Ministerial approval of the conversion and new service establishment bylaws. The service operation changes come into force on January 1, 2022, a date after it is assumed Ministerial approval will be given for the conversion and new service establishing bylaws. Claims submitted prior to that date will be dealt with under the existing funding model, and claims submitted after that date shall be dealt with by the new services as applicable. An annual maximum, initially set at $3,000 per year per electoral area, may be changed by the Board by resolution through the Regulation Bylaw on recommendation of the

respective Electoral Area Director. It is anticipated this would be done as part of establishing the annual budget for each compensation service before the commencement of each fiscal year, in order to determine the appropriate amount to requisition each year.

ALTERNATIVES

Alternative 1:
The Electoral Areas Committee recommends to the Capital Regional District Board:

1. That Bylaw No. 4416, Animal Control Service Establishing Bylaw, 2021, be read a first, second, and third time;
2. That Bylaw No. 4416 be referred to the Ministry for approval;
3. That Bylaw No. 4417, Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021 be read a first, second and third time;
4. That Bylaw No. 4417 be referred to the Ministry for approval;
5. That Bylaw No. 4418, Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021 be read a first, second and third time;
6. That Bylaw No. 4418 be referred to the Ministry for approval;
7. That Bylaw No. 4419, Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021 be read a first, second and third time;
8. That Bylaw No. 4419 be referred to the Ministry for approval;
9. That Bylaw No. 4264, Animal Regulation and Impounding Bylaw No. 1, 1986, Amendment Bylaw No. 11, 2021, be read a first, second, and third time; and
10. That staff report back on Ministerial approval of Bylaws No. 4416, 4417, 4418, and 4419 when received.

Alternative 2:
That staff be directed to report back with bylaw amendments as directed by the Electoral Areas Committee.

IMPLICATIONS

Service Delivery and Costing
The one animal control service, three compensation services approach to livestock injury compensation will retain enforcement, operations, and administration with shared costs among all Electoral Areas, but will split payment of livestock kill compensation into each Electoral Area specifically. It is recommended that an annual maximum compensation for each separate service be established that would be allocated to verified eligible claims on a first come first served basis until such time as the annual maximum is reached. An initial amount of $3,000 per service is recommended by staff. It is unlikely based on historical values to exceed this amount in each electoral area each year. Unused portions of the annual compensation amounts would be carried over to the following year's budget thereby lowering the required requisition to maintain the service.

Effects on Municipal Contracts
No effects should occur on those municipalities who hire CRD to enforce their animal control bylaws or provide animal control services. Those municipal clients have the option under their own animal control bylaws to provide livestock injury compensation services (Metchosin, for example, does this) and can either hire CRD to administer this function to be paid out of dog licensing fees or other revenues from the municipality, or can budget for this amount through their own municipal powers.

CONCLUSION

Splitting the three livestock injury compensation services will fulfil the requests of Electoral Area Directors to only pay livestock injury claims arising from their respective electoral areas. Should the services be split, it will take effect in 2022 due to the nature of local government requisitions.

RECOMMENDATION

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

1. That Bylaw No. 4416, Animal Control Service Establishing Bylaw, 2021, be read a first, second, and third time;
2. That Bylaw No. 4416 be referred to the Ministry for approval;
3. That Bylaw No. 4417, Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021 be read a first, second and third time;
4. That Bylaw No. 4417 be referred to the Ministry for approval;
5. That Bylaw No. 4418, Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021 be read a first, second and third time;
6. That Bylaw No. 4418 be referred to the Ministry for approval;
7. That Bylaw No. 4419, Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021 be read a first, second and third time;
8. That Bylaw No. 4419 be referred to the Ministry for approval;
9. That Bylaw No. 4264, Animal Regulation and Impounding Bylaw No. 1, 1986, Amendment Bylaw No. 11, 2021, be read a first, second, and third time; and
10. That staff report back on Ministerial approval of Bylaws No. 4416, 4417, 4418, and 4419 when received.

Submitted by:	Shawn Carby, CD, BHSc, MAL, Senior Manager Protective Services
Concurrence:	Kevin Lorette, P.Eng., MBA, General Manager Planning & Protective Services
Concurrence	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENTS

Appendix A: Bylaw No. 4416, Animal Control Service Establishing Bylaw, 2021
Appendix B: Bylaw No. 4417, Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021
Appendix C: Bylaw No. 4418, Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021
Appendix D: Bylaw No. 4419, Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021
Appendix E: Bylaw No. 4264, Animal Regulation and Impounding Bylaw No. 1, 1986, Amendment Bylaw No. 11, 2021

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4416

****

A BYLAW TO CONVERT THE ANIMAL CONTROL FUNCTION OF DIVISION XXII OF THE SUPPLEMENTARY LETTERS PATENT OF THE CRD TO SERVICES OPERATED UNDER AN ESTABLISHING BYLAW

****

WHEREAS:

A. Under Supplementary Letters Patent (SLP), Division XXII, OIC 446, dated February 16, 1979, the Regional Board was granted the function of animal control for all electoral areas in the regional district, a regulatory service;

B. The municipalities of Colwood, Langford, Metchosin, View Royal and Sooke were subsequently incorporated and, as a result, no longer participate in the service as participants, other than as clients by contract, with the only remaining participants being the electoral areas of Salt Spring Island, Southern Gulf Islands, and Juan de Fuca; and

C. The *Local Government Act* authorizes the Capital Regional District Board to convert a function established by SLP to a service exercised under the authority of a bylaw establishing the service;

D. The Board wishes by bylaw adopted in accordance with the *Local Government Act*, to convert the service operated under SLP Division XXII to a service exercised under the authority of an establishing bylaw and, by the same bylaw, amend the power to the extent that it could if the power were in fact exercised under the authority of the establishing bylaw;

E. The written consent of at least two thirds of participants has been obtained in accordance with the *Local Government Act*, by way of Electoral Area Director consenting on behalf of the electors;

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

Service

1. The function of animal control as granted by Division XXII of Supplemental Letters Patent dated February 16, 1979 by Order In Council 446/1979 is hereby converted and established as the Regional District Animal Control Service.

Boundaries

2. The boundaries of the service area are the boundaries of the Salt Spring Island Electoral Area, Southern Gulf Islands Electoral Area, and Juan de Fuca Electoral Area.

Participating Areas

3. The participants in the service are the Salt Spring Island Electoral Area, Southern Gulf Islands Electoral Area, and Juan de Fuca Electoral Area.

Cost Recovery

4. As provided in Section 378 of the *Local Government Act*, the annual costs of providing the Service, net of grants and revenue, shall be recovered by one or more of the following:

   (a) property value taxes imposed in accordance with Division 3 [*Requisition and Tax Collection*], Part 11 of the *Local Government Act*;

   (b) Fees and charges imposed under Section 397 of the *Local Government Act;*

   (c) Revenues raised by other means authorized under the *Local Government Act* or another Act;

   (d) Revenues received by agreement, enterprise, gift, grant or otherwise.

Cost Apportionment

5. The annual cost of the service, net of grants and other revenues, shall be apportioned on the basis of the converted value of land and improvements in the service area among the participating areas of the service.

Service Powers

6. In providing the service established by this Bylaw, the Regional District may, without limiting the generality of section 1 and in accordance with its powers under the *Local Government Act* and other applicable enactments:

   (a) Acquire, design, construct, operate, maintain, and administer pounds, kennels, and other animal impoundment or containment facilities;

   (b) Enter into an agreement with a municipality or public authority on such terms as are mutually agreed to provide animal control services to that municipality or public authority;

   (c) Make regulations for the purpose of animal control;

   (d) Operate a system of dog licensing;

   (e) Seize, impound, detain, and sell unlicensed dogs, and dogs and other animals unlawfully at large which the Regional District has the authority to regulate; and

   (f) Declare dogs dangerous in accordance with the *Community Charter* and other applicable enactments.

Citation

7. This Bylaw may be cited for all purposes as “Animal Control Service Establishing Bylaw, 2021".

READ A FIRST TIME THIS	__	day of	20__
READ A SECOND TIME THIS	__	day of	20__
READ A THIRD TIME THIS	__	day of	20__
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	__	day of	20__
APPROVED BY TWO-THIRDS OF PARTICIPANTS THIS	__	day of	20__
ADOPTED THIS	__	day of	20__

CHAIR	CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4417

****

A BYLAW TO ESTABLISH A LIVESTOCK INJURY COMPENSATION SERVICE FOR THE JUAN DE FUCA ELECTORAL AREA

****

WHEREAS:

A. Under *Animal Regulation and Impounding Bylaw No. 1*, 1986 (Bylaw No. 1465), the Capital Regional District has a program to compensate livestock owners whose animals are injured or killed by a dog over the age of four months, whose owner cannot be identified after diligent search and where the livestock owner has taken all reasonable precautions to avoid the loss as permitted by the *Local Government Act*;

B. Whereas the Capital Regional District wishes to continue this program as three separate services, one for each electoral area, while maintaining a single animal control service;

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

Definitions

1 In this Bylaw unless the context otherwise requires, the definitions set out in the *Animal Regulation and Impounding Bylaw No. 1*, 1986 (Bylaw No. 1465), as amended, apply.

Livestock Injury Compensation Service

2 A service is established for payment of claims of the owners of livestock killed or injured by a dog over the age of four months, the owner of which is unknown and, after diligent inquiry, cannot be found, as permitted by the *Local Government Act*.

Boundaries

3 The boundaries of the service area are those of the Juan de Fuca Electoral Area.

Participating Area

4 The participating area is the entirety of the Juan de Fuca Electoral Area.

Cost Recovery

5 As provided in Section 378 of the *Local Government Act*, the annual costs of providing the service may be recovered by one or more of the following:

a) property value taxes imposed in accordance with Division 3 [*Requisition and Tax Collection*], Part 11 of the *Local Government Act*;

b) revenues raised by other means authorized under the *Local Government Act* or another Act;

c) revenues received by agreement, enterprise, gift, grant or otherwise.

Citation

6 This Bylaw may be cited for all purposes as “Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021".

READ A FIRST TIME THIS	__	day of	20__
READ A SECOND TIME THIS	__	day of	20__
READ A THIRD TIME THIS	__	day of	20__
APPROVED BY THE ELECTORAL AREA DIRECTOR THIS	__	day of	20__
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	__	day of	20__
ADOPTED THIS	__	day of	20__

CHAIR

CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4418

****

A BYLAW TO ESTABLISH A LIVESTOCK INJURY COMPENSATION SERVICE FOR SALT SPRING ISLAND

****

WHEREAS:

A. Under *Animal Regulation and Impounding Bylaw No. 1*, 1986 (Bylaw No. 1465), the Capital Regional District has a program to compensate livestock owners whose animals are injured or killed by a dog over the age of four months, whose owner cannot be identified after diligent search and where the livestock owner has taken all reasonable precautions to avoid the loss as permitted by the *Local Government Act*;

B. Whereas the Capital Regional District wishes to continue this program as three separate services, one for each electoral area, while maintaining a single animal control service;

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

Definitions

1 In this Bylaw unless the context otherwise requires, the definitions set out in the Animal Regulation and Impounding Bylaw No. 1, 1986 (Bylaw No. 1465), as amended, apply.

Livestock Injury Compensation Service

2 A service is established for payment of claims of the owners of livestock killed or injured by a dog over the age of four months, the owner of which is unknown and, after diligent inquiry, cannot be found, as permitted by the *Local Government Act*.

Boundaries

3 The boundaries of the service area are those of the Salt Spring Island Electoral Area.

Participating Area

4 The participating area is the entirety of the Salt Spring Island Electoral Area.

Cost Recovery

5 As provided in Section 378 of the *Local Government Act*, the annual costs of providing the service may be recovered by one or more of the following:

a) property value taxes imposed in accordance with Division 3 [*Requisition and Tax Collection*], Part 11 of the *Local Government Act*;

b) revenues raised by other means authorized under the *Local Government Act* or another Act;

c) revenues received by agreement, enterprise, gift, grant or otherwise.

Citation

6 This Bylaw may be cited for all purposes as “Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021".

READ A FIRST TIME THIS	__	day of	20__
READ A SECOND TIME THIS	__	day of	20__
READ A THIRD TIME THIS	__	day of	20__
APPROVED BY THE ELECTORAL AREA DIRECTOR THIS	__	day of	20__
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	__	day of	20__
ADOPTED THIS	__	day of	20__

CHAIR

CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4419

****

A BYLAW TO ESTABLISH A LIVESTOCK INJURY COMPENSATION SERVICE FOR THE SOUTHERN GULF ISLANDS

****

WHEREAS:

A. Under *Animal Regulation and Impounding Bylaw No. 1*, 1986 (Bylaw No. 1465), the Capital Regional District has a program to compensate livestock owners whose animals are injured or killed by a dog over the age of four months, whose owner cannot be identified after diligent search and where the livestock owner has taken all reasonable precautions to avoid the loss as permitted by the *Local Government Act*;

B. Whereas the Capital Regional District wishes to continue this program as three separate services, one for each electoral area, while maintaining a single animal control service;

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

Definitions

1 In this Bylaw unless the context otherwise requires, the definitions set out in the *Animal Regulation and Impounding Bylaw No. 1*, 1986 (Bylaw No. 1465), as amended, apply.

Livestock Injury Compensation Service

2 A service is established for payment of claims of the owners of livestock killed or injured by a dog over the age of four months, the owner of which is unknown and, after diligent inquiry, cannot be found, as permitted by the *Local Government Act*.

Boundaries

3 The boundaries of the service area are those of the Southern Gulf Islands Electoral Area.

Participating Area

4 The participating area is the entirety of the Southern Gulf Islands Electoral Area.

Cost Recovery

5 As provided in Section 378 of the *Local Government Act*, the annual costs of providing the service may be recovered by one or more of the following:

a) property value taxes imposed in accordance with Division 3 [*Requisition and Tax Collection*], Part 11 of the *Local Government Act*;

b) revenues raised by other means authorized under the *Local Government Act* or another Act;

c) revenues received by agreement, enterprise, gift, grant or otherwise.

Citation

6 This Bylaw may be cited for all purposes as “Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021".

READ A FIRST TIME THIS	__	day of	20__
READ A SECOND TIME THIS	__	day of	20__
READ A THIRD TIME THIS	__	day of	20__
APPROVED BY THE ELECTORAL AREA DIRECTOR THIS	__	day of	20__
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	__	day of	20__
ADOPTED THIS	__	day of	20__

CHAIR

CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4264

****

A BYLAW TO AMEND THE ANIMAL REGULATION AND IMPOUNDING BYLAW (BYLAW NO. 1465)

****

WHEREAS:

A. Under Animal Regulation and Impounding Bylaw No. 1, 1986 (Bylaw No. 1465), the Capital Regional District has a program to compensate livestock owners whose animals are injured or killed by a dog over the age of four months, whose owner cannot be identified after diligent search and where the livestock owner has taken all reasonable precautions to avoid the loss;

B. Whereas the Capital Regional District wishes to continue this program as three separate services, one for each electoral area, while maintaining a single animal control service;

C. Whereas the Board of the Capital Regional District wishes to amend Bylaw No. 1465 to remove this program on a date the service establishment bylaws for the three new services are adopted;

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

1. Bylaw No. 1465, Animal Regulation and Impounding Bylaw No. 1, 1986 is hereby amended as follows:

   (a) As of January 1, 2022, by replacing sections 19 to 23 in their entirety with the following:

<u>COMPENSATION SERVICES IN EACH ELECTORAL AREA</u>

19. (1) Three separate services are established for livestock injury compensation as set out in the *Local Government Act* (collectively the "Compensation Services"):

   (a) Juan de Fuca Electoral Area – Livestock Injury Compensation Service (Juan de Fuca) Bylaw No. 1, 2021 (Bylaw No. 4417);

   (b) Salt Spring Island Electoral Area – Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021 (Bylaw No. 4418); and

   (c) Southern Gulf Islands Electoral Area – Livestock Injury Compensation Service (Southern Gulf Islands) Bylaw No. 1, 2021 (Bylaw No. 4419).

19. (2) For each Compensation Service, the Regional Board shall pay compensation to the owner of any sheep, goat, poultry for the purpose of providing meat and eggs, domestic rabbits, animals of the bovine species, swine, horses or fur-bearing animals as defined in the *Fur Farm Act* (the "Livestock") killed or injured by any dog apparently over the age of four (4) months, the owner of which is unknown, and after diligent enquiry cannot be found in the amount of the lesser of:

   (a) SEVENTY-FIVE (75%) PERCENT of the decrease in the market value of the animal as a result of its death or injury, or

(b) SEVEN HUNDRED AND FIFTY ($750) DOLLARS.

20. The total annual maximum payable in each Service Area for these Compensation Services shall be as follows:

(a) The Juan de Fuca Compensation Service: $3,000

(b) The Salt Spring Island Compensation Service: $3,000

(c) The Southern Gulf Islands Compensation Service: $3,000

21. (1) All claims pursuant to the provisions of this Bylaw shall be filed with the Animal Control Officer within three business days of the discovery of the animal's injuries in the form attached hereto as Schedule "D".

21. (2) No claim shall be authorized under this Bylaw unless:

(a) The Regional Board is satisfied that the owner submitting the claim has taken all reasonable precautions for protecting such Livestock;

(b) The loss is reported to the Animal Control Officer within three (3) business days of the discovery of the animal's injury in the appropriate form; and

(c) In the event the claim is more than the amount the Animal Control Officer is permitted to authorize under Section 22, confirmation from a veterinary professional that the injuries were caused by a dog over the age of four months.

22. The Animal Control Officer is hereby authorized to approve any claim under this Bylaw up to the amount of TWO HUNDRED AND FIFTY ($250) DOLLARS. Any claim in excess of that amount shall be referred to the Regional Board.

23. Claims properly filed under the former compensation program shall be paid by the Regional Board in accordance with sections 19 to 22 if the injury was properly reported on or before December 31, 2021. Claims reported on or after January 1, 2022 shall be handled as claims under the respective Compensation Services.

2. This Bylaw may be cited for all purposes as "Animal Regulation and Impounding Bylaw No. 1, 1986, Amendment Bylaw No. 11, 2021".

READ A FIRST TIME THIS	day of	2021
READ A SECOND TIME THIS	day of	2021
READ A THIRD TIME THIS	day of	2021
ADOPTED THIS	day of	2021

CHAIR

CORPORATE OFFICER

Making a difference...together

ERM 21-22

REPORT TO ENVIRONMENTAL SERVICES COMMITTEE
MEETING OF WEDNESDAY, MAY 19, 2021

SUBJECT **Amendment to the Hartland Landfill Tipping Fee and Regulation Bylaw (Bylaw No. 3881)**

ISSUE SUMMARY

To amend Bylaw No. 3881, the Hartland Landfill Tipping Fee and Regulation Bylaw No. 6, 2013, to adjust the kitchen scraps tipping fee rate.

BACKGROUND

At its meeting of March 10, 2021, the Capital Regional District (CRD) Board approved a motion directing that Bylaw No. 3881, the Hartland Landfill Tipping Fee and Regulation Bylaw No. 6, 2013 be amended to set the tipping fee rate for kitchen scraps at $140 per tonne beginning January 1, 2022 to offset kitchen scraps hauling and processing costs. The amendment Bylaw No. 4420 can be found as Appendix A.

ALTERNATIVES

Alternative 1

The Environmental Services Committee recommends to the Capital Regional District Board:

1. That Bylaw No. 4420, "Hartland Tipping Fee and Regulation Bylaw No. 6, 2013, Amendment Bylaw No. 3, 2021", be introduced and read a first, second time and third time; and
2. That Bylaw No. 4420 be adopted.

Alternative 2

That staff come back with more information.

IMPLICATIONS

Financial Implications

Adjusting the tipping fee for kitchen scraps received at the Hartland landfill transfer station to $140 per tonne will bring the revenues generated through the provision of this service into alignment with the costs of hauling and processing the material.

Intergovernmental Implications

Kitchen scraps collected by the municipalities of Esquimalt, Sidney and View Royal have historically been managed through CRD kitchen scraps hauling and processing contracts. Increasing the tipping fee for kitchen scraps under Alternative 1 will likely require these municipalities to increase the budgets for their programs, and delaying the increase in the fee

until January 1, 2022 should provide them with sufficient time to do so. Victoria, Oak Bay and Saanich have separate arrangements for the processing of their kitchen scraps.

Environmental Implications

The diversion of kitchen scraps for composting saves landfill space and reduces greenhouse gas emissions by avoiding methane generation as they decompose in the landfill. The finished compost produced from kitchen scraps can also help reduce the use of fossil-fuel based fertilizers when used in agriculture. The higher tipping fee posed under Alternative 1 may serve as a disincentive to divert kitchen scraps. Alternative 2 will help to facilitate the diversion of kitchen scraps by maintaining a subsidized kitchen scraps diversion option to both public and private haulers using the Hartland transfer station.

CONCLUSION

At its meeting of March 10, 2021, the Capital Regional District Board directed that the tipping fee rate for kitchen scraps be set at $140 per tonne beginning January 1, 2022 to offset kitchen scraps hauling and processing costs. Approving the amendment to Bylaw 3881 will complete this directive and align kitchen scraps hauling and processing costs with the tipping fees levied to receive these materials at Hartland. Having the $140 per tonne fee begin January 1, 2022 will allow sufficient time for both public and private sector users to adjust their budgets and/or fees in preparation for this change.

RECOMMENDATION

The Environmental Services Committee recommends to the Capital Regional District Board:

1. That Bylaw No. 4420, “Hartland Tipping Fee and Regulation Bylaw No. 6, 2013, Amendment Bylaw No. 3, 2021”, be introduced and read a first, second time and third time; and
2. That Bylaw No. 4420 be adopted.

Submitted by:	Russ Smith, Senior Manager, Environmental Resource Management
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Bylaw No. 4420, Hartland Landfill Tipping Fee and Regulation Bylaw No. 6, 2013, Amendment Bylaw No. 3, 2021

APPENDIX A

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4420

****

A BYLAW TO AMEND BYLAW NO. 3881 BEING "HARTLAND LANDFILL TIPPING FEE AND REGULATION BYLAW NO. 6, 2013, AMENDMENT BYLAW NO. 3, 2021"

****

WHEREAS the Board of the Capital Regional District wishes to change the tipping fee levied for Kitchen Scraps at the Hartland landfill;

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

1. Bylaw No. 3881, "Hartland Landfill Tipping Fee and Regulation Bylaw No. 6, 2013", is amended by replacing Schedule "C" with the Schedule "C" attached to this bylaw.

2. This bylaw may be cited for all purposes as "Hartland Landfill Tipping Fee and Regulation Bylaw No. 6, 2013, Amendment Bylaw No. 3, 2021".

READ A FIRST TIME THIS	th	day of	20__
READ A SECOND TIME THIS	th	day of	20__
READ A THIRD TIME THIS	th	day of	20__
ADOPTED THIS	th	day of	20__

CHAIR

CORPORATE OFFICER

SCHEDULE "C"

TIPPING FEES

CAPITAL REGIONAL DISTRICT

BYLAW NO. 3881

FEES

1. The fees for depositing solid waste at the Disposal Site are:

Waste Type	Disposal Site Designated Location	Tipping Fee (per tonne)	Other Fees	Minimum Tipping Fee
Asbestos Containing Material	As directed by CRD staff	$157		$20
Bicycle tires and tubes	Public Drop Off Area	No fee	$6 recycling area entry fee	No fee
Bulky Waste	Active Face	$254		$10
Clean Wood Waste	As directed by CRD staff	$110	$10 bin fee	
Controlled Waste	As directed by CRD staff	As listed in Schedule "E"		$20
Cooking oil and grease	Public Drop Off Area	No fee		No fee
Extended Producer Responsibility Product listed in Schedule "G" (excluding tires on rims)	Public Drop Off Area	No fee		No fee
Extended Producer Responsibility Product listed in Schedule "G" tires on rims	Public Drop Off Area	No fee	$6 recycling area entry fee	No fee
Household Hazardous Waste	Public Drop Off Area	No fee		No fee
Kitchen Scraps until December 31, 2021	Kitchen Scraps Transfer Station	$120		
Kitchen Scraps effective January 1, 2022	Kitchen Scraps Transfer Station	$140		

Waste Type	Disposal Site Designated Location	Tipping Fee (per tonne)	Other Fees	Minimum Tipping Fee
Mattresses and boxsprings	Public Drop Off Area	$110	$10 bin fee	
Propane tanks and fire extinguishers	Public Drop Off Area	No fee		No fee
Recyclable Material excluding Scrap Metal, mattresses and boxsprings, Yard and Garden Material and Clean Wood Waste (by non-commercial hauler)	Public Drop Off Area	No fee	$6 recycling area entry fee $20 per white good which contains or contained refrigerant	No fee
Recyclable Material excluding Scrap Metal, mattresses and boxsprings, Yard and Garden Material and Clean Wood Waste (by Commercial Hauler)	Public Drop Off Area	No fee	$26 recycling area entry fee $20 per white good which contains or contained refrigerant	No fee
Refuse	Active Face	$110		$10
Refuse	Public Drop Off Area	$110	$10 bin fee	
Scrap Metal	Public Drop Off Area	No fee	No fee	
Small Load Uncontaminated Demolition Waste	Public Drop Off Area	$110	$10 bin fee	
Stumps and Branches	As directed by CRD staff	$110		$10
Waste Asbestos which originates outside the CRD until December 31, 2016	As directed by CRD staff	$311		$20
Waste Asbestos which originates outside the CRD effective January 1, 2017	As directed by CRD staff	$500		$20
Weeds (Source separated)	Active Face	$59		$10
Weeds (not Source –separated in Refuse)	Active Face	$110		$10
Weeds (not Source –separated in Refuse)	Public Drop Off Area	$110	$10 bin fee	
Weeds (Source separated)	Public Drop Off Area	$59		$10
Yard and Garden Materials	As directed by CRD staff	$59		$10
Uncovered or unsecured loads	All fees applicable to the Load are doubled			

Making a difference...together

REPORT TO GOVERNANCE COMMITTEE
MEETING OF WEDNESDAY, JUNE 02, 2021

SUBJECT **Family Court Committee – Update of Review of Status and Governance**

ISSUE SUMMARY

To inform the Board of a resolution from the Victoria Family Court and Youth Justice Committee (the "Committee") and to seek direction on establishing a delegated commission for the service.

BACKGROUND

Resolution at Victoria Family Court and Youth Justice Committee Meeting of April 21, 2021

On November 18, 2020, the CRD Board passed a motion that staff be directed to report back on the process to restructure the Committee in accordance with the delegation and governance structure recommendations set out in that report. The Board further directed that staff work with the Committee on the proposed governance recommendations, and that the report be referred out to all member municipalities.

Staff reported out to the member municipalities on January 21, 2021 to inform them of the motion and the upcoming planned consultation dates. A copy of the correspondence is included at Appendix A. No substantive response was received from the participants.

On January 27, 2021, CRD staff attended a Committee meeting and canvassed the Committee's history and challenges (many of which are held in common with other family court committees). Staff further discussed the grant-making issue, and provided some general options for resolving structure and governance issues. On February 3, 2021, CRD staff went through each recommendation in the earlier CRD report and sought general input from Committee members through discussion.

Following these discussions, and considering comments and feedback from the members who participated, CRD staff drafted a letter dated February 26, 2021, enclosing a list of mandatory and optional governance recommendations that would rectify some of the issues faced by the committee, primarily, compliance with open meeting and record keeping legislation; ensuring the ability to provide grants to community groups without delay; and address meeting and governance conflicts. In order to gauge interest in moving forward with recommendations, CRD staff requested the Committee, acting as a whole, endorse a delegated commission model and recommend the CRD Board direct staff to proceed further with engagement and implementation. A copy of that correspondence is attached at Appendix B.

At the Committee's regular meeting of April 21, 2021, the following motion was endorsed:

> *That the Victoria Family Court and Youth Justice Committee recommend to the Capital Regional District Board:*
>
> 1. *Consider creation of a delegated commission, rather than an advisory committee or commission, to continue the work of the Victoria Family Court and Youth Justice Committee;*

2. *Direct staff to continue to engage with the Committee to work to implement certain mandate, governance, and structure changes in accordance with the recommendations set out in the CRD's letter of February 26, 2021.*

ALTERNATIVES

Alternative 1
The Governance Committee recommends to the Capital Regional District Board:

1. That staff report back with a draft Commission Bylaw that delegates an administrative level of authority to the Victoria Family Court and Youth Justice Committee, including the power to issue grants, and that the Commission Bylaw addresses the mandate, governance and structural changes recommended by the CRD in its letter of February 26, 2021; and
2. That staff consider additional resources and support to assist the Committee with meeting management in the 2022 Service Planning process.

Alternative 2
That this report be referred back to staff for additional information.

IMPLICATIONS

Service Delivery Implications

The committee's primary work is to educate government of all levels on the work of youth and family justice organizations and initiatives in the region, and identify gaps where service providers or additional funding resources can intervene. Unlike other such committees, the Committee has used its service requisition to fund small youth justice projects for nearly 20 years. A regional district must clearly delegate granting powers under 263(1)(c) of the *Local Government Act*,[1] and it cannot delegate to an unincorporated association or corporation, but only to an individual (typically staff or volunteer) or to a delegated commission.

Staff have heard from Committee members that should the grant-making ability be eliminated, this would have an impact on youth projects in the community, particularly those offered to or targeted at school age students. Should the service as a whole be eliminated, the CRAT program would also lose funding. CRAT provides direct programming in schools to reach youth who may be at risk of prostitution and exploitation.

Concerns Raised at April 21, 2021 Committee Meeting

CRD's Manager of Legal Services attended the meeting at the request of the Committee Chair. The tone of the discussion was that the Committee wishes to move on and return to the business of surveying community needs and granting at the earliest opportunity. Its membership is in favour of moving forward with the broadest delegation possible in order to return to its work, with CRD supports that are available.

Individual Committee members raised the following issues and concerns during discussion:

[1] *Local Government Act*, section 263 (1)(c) Subject to the specific limitations and conditions established under this or another Act, the corporate powers of a board include the following … to provide assistance for the purpose of benefiting the community or any aspect of the community;

- The Committee should be able to issue grants in an independent, unbiased manner as it has for some time;
- That a delegated commission model would cause changes to the Committee's scope of business and affect its ability to meet confidentially;
- Concerns of the inability to perform the legislated functions of a *Provincial Court Act* or *Youth Criminal Justice Act* youth justice committee were raised, and members want to ensure these wouldn't be restricted with a delegated commission; and
- Concerns were raised relating to the potential expense of CRD supports to the Committee.

Staff explained how the *Local Government Act* requires a delegation to enable grant-making, the nature of a delegated commission, and provided examples of grant-making and other administrative functions within the CRD. It was also explained that even as a delegated commission that the Committee could continue to discharge its legislated duties, if called upon by the Court, as confidentiality of some matters is mandated by legislation and the *Community Charter* permits closure in certain relevant circumstances.

Implications as to Consultation

Individual committee members differ in their concerns on this point. Some members were content to leave the crafting of the delegated commission bylaw to CRD, without the need for further consultation, while others wished to review the bylaw and provide feedback in advance of adoption. Engaging in this consultation may address concerns raised by some Committee members, however, it is anticipated this would be a lengthy and time-consuming process for staff, and is unlikely to result in a full consensus from Committee members. Ongoing consultation with the Committee on the form of the bylaw could be a significant time commitment and could not be absorbed into current service levels.

If a delegated commission bylaw is passed, the Committee would have authority to issue grants; clear procedural rules for running Committee meetings; the Committee's statutory mandate would be clearly set out in a bylaw; its members and volunteers would be appropriately protected under the *Local Government Act* indemnities and the CRD's volunteer insurance policy, as applicable; and the Committee and the CRD could continue to work to craft changes to that governance bylaw as necessary should problems be identified after adoption.

If no action is taken, the Committee will be unable to issue grants without an explicit referral to the CRD Board. Its work will likely continue to be delayed and without adequate supports. The governance issues it is experiencing may result in its membership dwindling and eventual withdrawal of certain participants from the service and the Committee.

Committee's Own Actions Post-Review

The Committee has taken active steps to resolve issues identified in the 2020 review. Its 2020 annual report, a point of contention in 2019 and prior, has been shortened; its website, containing its constating documents and background information, is now operational; its agendas now include specific times for resource members to present (who may then leave meetings); it is attempting to limit speaking times, keep speakers on topic, and run orderly meetings consistent with a working board; and it has provided past minutes for 2020 to the CRD for the purposes of the *Community Charter* access to records provisions and continues to assemble prior minutes.

However, the Committee is volunteer run and has not had regular CRD support since the early 2000s. It continues to struggle with administration and would benefit from support to assist in setting agendas, documenting minutes, taking attendance, and running online meetings, leaving the members of the Committee free to focus on the mandate of surveying resources in the community and the function of reviewing funding applications. Such services are provided to the Vancouver and Richmond committees by their respective local governments.

Staffing Implications

CRD's Legal Services staff have spent significant time on this matter, both in the initial review and recent engagement and consultation. Further time will need to be spent by Legal Services, Legislative Services and the Finance department to gather feedback, implement supports, and provide additional training for the Committee if it becomes a delegated commission under bylaw. There is limited capacity to meet the support needs of the Committee with existing staffing levels, however, the Committee may benefit from contracted support for its meetings in the form of clerk to assist with procedural advice and to administer online meetings.

CONCLUSION

The Committee is interested in formalizing its relationship with the CRD as a delegated commission and accessing supports, if available. To continue with the collaborative approach between service participants at the CRD and current and long-standing members at the Committee, it is recommended that the CRD Board direct staff to prepare a delegated Commission bylaw.

RECOMMENDATION

The Governance Committee recommends to the Capital Regional District Board:

1. That staff report back with a draft Commission Bylaw that delegates an administrative level of authority to the Victoria Family Court and Youth Justice Committee, including the power to issue grants, and that the Commission Bylaw addresses the mandate, governance and structural changes recommended by the CRD in its letter of February 26, 2021; and
2. That staff consider additional resources and support to assist the Committee with meeting management in the 2022 Service Planning process.

Submitted by:	Steven N. Carey, B.Sc., J.D., Manager, Legal Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: January 21, 2021 CRD Letter to Service Participants and School Districts (Example)
Appendix B: February 26, 2021 Letter from CRD to Committee

Making a difference...together

Corporate Services
625 Fisgard Street, PO Box 1000
Victoria, BC, V8W 2S6

T: 250.360.3638
www.crd.bc.ca

January 21, 2021

File: 0360-20

Town of View Royal
Attention: Sarah Jones, Corporate Officer
Via email: sjones@viewroyal.ca

Dear Ms. Jones:

RE: CRD REVIEW OF YOUTH AND FAMILY COURT COMMITTEE SERVICE

On November 18, 2020, the CRD Board directed staff to engage with the Victoria Youth and Family Court Committee (the "Committee") on its delegation and governance structure, and to provide a copy of the enclosed staff report to service participants, such as your municipality, discussing the history of and potential improvements to the Committee's governance.

Since the late 1960s, the Committee has provided elected official and volunteer-run youth and family justice services, including grant-making, community coordination among family and justice groups, and until the closure of the Southern Vancouver Island Youth Custody Centre, supervision of youth remand care and facilitation of family member visitation. The Committee's focus is on ensuring youth and family interests in the family court system are adequately represented and understood by local government, and on diverting youth from negative involvement with the justice system. The Capital Regional Action Team for Sexually Exploited Youth, also funded by the service's requisition, provides programming in schools.

Discussion and consultation with the Committee's membership is scheduled for January 27 and February 3, 2021, from 10 a.m. to noon. CRD staff will collaborate with the Committee's membership on what they see as areas for improvement, and discuss whether the Committee and participants would be better served by the creation of an independent entity, such as a society.

Should you have questions, comments, or concerns, please contact Steven Carey, Manager, Legal Services by e-mail, scarey@crd.bc.ca, or at the direct line, 250-360-3128.

Yours sincerely,

Kristen Morley, J.D.
General Manager, Corporate Services and Corporate Officer

Attachment: November 18, 2020 Staff Report and Appendices, YFCC Constitution and Terms of Reference

cc: Cynthia Day, Chair, Victoria Youth and Family Court Committee
View Royal Mayor and Council

Making a difference...together
Corporate Services
625 Fisgard Street, PO Box 1000
Victoria, BC, V8W 2S6
T: 250.360.3128
www.crd.bc.ca

February 26, 2021

VIA E-MAIL

Victoria Youth and Family Court Committee

Attn: Members of the Committee

Dear Sirs/Mesdames:

Re: CRD Review of Youth and Family Court Committee Service: Recommendations as a result of consultation

Further to our consultation at Victoria Youth and Family Court Committee (the "Committee") meetings January 27, 2021 and February 3, 2021, we write to request the Committee's membership, by resolution passed in open meeting properly assembled, confirm it is interested in continuing with the process as outlined in this letter.

On January 27, 2021, we canvassed the Committee's history, problems faced by it and other family court committees, how grants can be made, and options for resolving structure and governance issues. On February 3, 2021, we went through each recommendation in the CRD report. Discussion occurred on public meeting and record keeping requirements, the role of the Provincial Ombudsperson, and on delegated versus advisory commissions. At this meeting, CRD was prepared to present a delegated commission model, but was informed January 26, 2021 by the Committee's Chair that it was not ready for further consultation and would not be ready until after an orientation session in February had been held for new members.

Suggested Motion Language

We ask that you consider a motion, in open meeting assembled, showing a group intention to continue with this process. We suggest the following:

> *That the Victoria Youth and Family Court Committee recommend to the Capital Regional District Board:*
>
> 1. *Consider creation of a delegated commission, rather than an advisory committee or commission, to continue the work of the Victoria Youth and Family Court Committee;*
> 2. *Direct staff to continue to engage with the Committee to work to implement certain mandate, governance, and structure changes in accordance with the recommendations set out in the CRD's letter of February 26, 2021.*

Recommended Structure – Delegated Commission

A delegated commission will provide independence over administration and operation of the service, similar to how the Committee currently operates, but with a delegation of grant-making authority and a clear mandate set out in a bylaw. Similar commissions exist already at CRD: no

new model would need to be created. This has the least burden in time, monetary cost, and personal financial risk to appointees. A draft commission bylaw has been prepared to implement certain recommendations set out in this letter. Please note that though it would be a delegated commission, the Committee name would not change: "commission" is a legal status.

An advisory commission is not recommended. It would cause unnecessary delays relating to grant-making, would require additional Board referrals, and increase use of Board and staff time. Committee issues are specialized, funding applications are received throughout the year (particularly from youth) and the Committee is ideally staffed with persons able to advise on community need, something it has done in the capital region since the 1960s.

A society is not recommended. The administrative burden and need for additional insurance and other materials (risk, privacy, work safety, human rights policies) would quickly deplete resources. Volunteers who provide assistance to the Committee and certain local government appointments undertaking Committee work between meetings are likely be ineligible for the *Local Government Act* indemnity and would not be covered by CRD's insurance.

Recommendations

Recommendations are organized into "must" or "may" categories and additional considerations contained in the below table.

Mandatory Recommendations - Structure

The following are recommendations based on legislative requirements and best practices.

Recommendation	Must / May	Reasoning
Set out mandate and delegation in a bylaw	Must	A commission bylaw sets out delegation for grant-making and a clear mandate to guide the Committee in its business. A proposed mandate, compared to prior mandates and legislation is Schedule "A". The Committee should examine its mandate to ensure it is accurately reflecting both its historical purpose per the *PCA* and the broader work it does. Quorum is currently set to seven members, the same number as CRD appointments. This is appropriate based on attendance and is approximately 30% of membership.
Comply with *Community Charter (Formalize meetings)*	Must	As a body of a local government, meetings and any sessions where decisions are made must be in open. Does not apply to work by volunteers or sub-committees, provided they are not making final decisions for the Committee.
Public minutes and agendas unless in closed *(Formalize meetings)*	Must	*Community Charter* requires these to be published within a certain time, and to be publicly available or inspected on request. Publication could be met by online publication through CRD; prior minutes could be made available by CRD to meet requirements for public inspection. *YCJA* provides confidentiality provisions, if ever requested as a conference by the Court.

Maintain records consistent with the obligations of a public authority	Must	Required by *Community Charter* and *FIPPA.* Covered by CRD records and privacy policies, use of Corporate Officer and FOI Manager for FOI requests. Records should be stored at CRD. A CRD e-mail address should be provided. Meeting minutes should be publicly accessible and available.
Procedures bylaw compliance *(Formalize meetings)*	Must	To resolve the existing complaints faced by the Committee, it should ensure: • Agenda items can be raised with Chair in advance of meeting, or at a meeting itself by Notice of Motion; • Meetings have set times, with resolution required to continue them; • Speakers and delegations have set times, with resolution to extend; • Alternating speakers' lists are used to keep matters on topic, ensure small voices can be heard – members should not have wide-ranging discussions on topics outside the floor; • Compliance with Robert's Rules. While a Priorities sub-committee can assist in preparing an agenda, it should not bump items from prior meetings or items raised by Notice of Motion. It should not be deciding agenda items without the full committee. Decisions should be made in an open, properly constituted meeting.
Institute term limits	Must	Representatives should exit after a certain time to ensure fulsome representation by other members and others sought to fill their roles as part of a transition plan. Two year terms are proposed, with a maximum of three consecutive terms. After one year, a Committee member is eligible for re-appointment. Staggered terms are also recommended for community appointments (e.g. CRD appointments). For transition, existing committee members who are beyond their term limits should receive the balance of their term plus the option for one additional two years term. A further term of two years can be provided at appointing organization's option with consent of Committee. Past long-time volunteers can be non-voting resource members or participate as volunteers, a practice formerly used by the Committee.
Consolidate finances in CRD	Must	There is no need to have separate bank account. Approved grants, honoraria, and reimbursements of expenses can be issued directly from CRD. Can be included in CRD financial checks and audit.

Follow existing policies rather than create its own	Must	As a body of the CRD, the Committee should follow CRD policies, such as those relating to expenses; records management; standards of conduct; respectful workplace; and the like. If necessary, specific policies or exceptions can be developed in accordance with CRD's Policy Framework.
Re-arrange agenda items	Must	Agenda items should be re-arranged such that resource members speak at a dedicated time in the meeting (done).

Non-Mandatory Recommendations – Governance

The following are non-mandatory governance recommendations. Implementing a few would likely resolve many of the conflicts and issues faced by the Committee relating to its work.

Reduce or restructure meetings	May	Consider (non-exhaustively, and based on needs): - Setting a topic-based schedule for potential meetings, set in the January or February meeting of each year in advance - Aiming for the required four meetings per year to focus on family and youth resources in the region, with specific mandates for each meeting - Two grant intake and review meetings per year - Two resource member coordination meetings per year (Fall and Spring, for example), which may result in a greater focus on these organizations and greater attendance Reducing the number of meetings annually may improve attendance and free-up member time to work on specific projects or volunteer tasks.
Set specific mandates for sub-committees with dates for deliverables (reduce or restructure meetings)	May	Sub-committee creation and appointments should be at the call of the Board, not at the call of the Chair, to ensure consistent direction. Consider reducing the number of sub-committees, depending on the projects and workloads is advisable. When creating such groups, set a mandate, time limit, and staff with volunteers (who do not need to be Committee members) – did this historically. Using time or mandate-limited sub-committees, will allow work to get done to be reported up to the Committee as a whole example: e.g. Court Watch 2021, goal to attend court a certain number of times, visit a certain number or type of proceedings, report on a set future date. e.g. Working groups specific to certain issues, such as youth services on the West Shore, family services on the peninsula, with a set mandate and a time for reporting
Look at membership composition *(reduce numbers and appoint family-and-*	May	The Committee may wish to consider: • requesting CRD not utilize all seven of its community appointments, to reduce the numbers of voting members unless quorum or workload becomes an issue;

youth-involved individuals)		• requesting each municipal member appoint an elected official and a community member, such that they can act in each other's absence and collaborate on the municipalities needs; • methods and recruitment to ensure a majority of members must have experience in "education, health, probation, and welfare"; • look to actively recruit successors for long-time members, as well as new resource members; and • establishing a qualifications matrix, to determine what skill sets are missing on the Committee. CRD can also assist in coordinating appointments with service participants, such as developing standards advertisement language, setting reminders for intake periods, and the like.
Grant intake procedure and grant agreement form	May	May set grant-intakes per year and reserve some amount for applications that come up between meetings. May wish to establish non-exhaustive criteria for grants. Can still review grants through sub-committee, with recommendations and summary to Committee for approval. Have a conflicts recusal procedure to avoid allegations of bias or impropriety (as with other CRD granting bodies). Before any funding is provided, a grant-agreement must be entered into to protect funds (simple, mandatory).
Maintain a volunteer registry	May	This is strongly recommended if the Committee intends to continue to perform work outside properly constituted meetings, such as Court Watch, facility visits, or assistance to individual youth and families. The *Local Government Act* indemnity only applies to elected officials when working within their role, not when doing hands-on volunteer work (say court watching) not typically the duty of a local government official; for individual appointments and volunteers, it only applies when under the local government's direction: the Committee would need to specifically mandate tasks to its volunteers and sub-committees (if any) by resolution to ensure works are being properly supervised. It can do this by specific, mandated resolutions or by utilizing a volunteer coordinator, similar to how other delegated commissions operate. To qualify for insurance for their own injuries, volunteers must also register with CRD's Risk and Insurance Department. Individuals working with vulnerable youth should have a recent valid criminal record check on file with CRD. This will satisfy an insurer should a claim arise relating to misconduct involving youth.

Additional Recommendations Arising

From the questions asked by members and others since the July CRD report, the following items are recommendations arising.

Annual work plan	May	The Committee may wish to consider setting an annual work plan, similar to the City of Vancouver's committee. While the Committee does do forward planning, planning of the year may help it remain focused.
Continued online meetings	May	Local Government bodies, even post-COVID health orders, can host electronic meetings. CRD has facilities to do so via WebEX and Microsoft Teams; some use Zoom depending on the circumstances. This will facilitate attendance and engagement.
Maintain a region-wide focus	Must	On January 27, it was brought to the attention of the writer that the Committee had previously engaged in suicide watch of a vulnerable young person. This is outside the mandate of the committee and the insurance and indemnity of the individual members. Specific policies are available for this work but only where doing so when properly trained, registered, and with appropriate supports in place, none of which the Committee has. Committee members also attended a First Nations Court sentencing hearing in Duncan and participated in sentencing. As it is work outside the regional district, this may be outside the mandate of the committee. Any court appearances on behalf of the Committee should first be instigated by a direct request from the Court or a specific individual seeking assistance.

Conclusion

This review was conducted on the basis of the documents available and interviews with Committee members. Despite requests, the writer remains without access to past minutes and agendas. The Committee's 2021 annual report has not been finalized or distributed. If available, these documents may affect our opinion relating to certain governance recommendations.

Should you have questions, please contact the writer by e-mail, scarey@crd.bc.ca, or at the direct line, 250-360-3128.

Best regards,

Steven N. Carey, B.Sc, J.D.
Manager, Legal Services
Lawyer and Trademark Agent

cc. Cynthia Day, Chair, Victoria Youth and Family Court Committee; Robert Lapham, Chief Administrative Officer; Kristen Morley, General Manager, Corporate Services
Encl. Schedule "A" – Mandate Samples

Schedule "A"
Mandate and Objectives Summaries

Objectives

Suggested by CRD	Existing Committee Objective/Mandate
The Committee has the following objectives: (a) to identify, inform, assess, educate, and report on regional resources for youth justice and family court issues and related needs; (b) to act as a resource for the public and youth and family organizations; and (c) to encourage collaboration between and visibility of community services.	N/A The current Committee Constitution and Terms of Reference make no mention of mandate or purposes, though there are references to the *PCA* and *YCJA.*

Comments: The Committee should clearly identify objectives to guide it in its core work.

Additional Activities of the Committee

Suggested by CRD	Existing Committee Objective/Mandate
The Committee may, within its mandate: (a) take positions on policy initiatives, legislation, and services affecting families and youth justice in the region, in the name of the "Victoria Family Court and Youth Justice Committee"; and (b) undertake other activities consistent with the activities of a family court and youth justice committee, as permitted by law. Subject to bylaws, policies, and procedures, the Committee may: (a) establish advisory groups to examine specific issues, who will report on their work; (b) contract for support services, volunteer coordination, communications, feasibility studies, and other services and goods related to its mandate; (c) undertake necessary, incidental, or ancillary administrative tasks in order to effect its work.	The Family Court Committee can: a) Be a force in educating the public on issues related to Family Court; b) Sit in on court hearings to monitor the actions of all officials concerned with the welfare of youth and to assist judges upon request; c) Inform the Intermunicipal and the Capital Regional Electoral District Committees of the problems which are of concern to the community; d) Enter and monitor both open and closed custody facilities as concerned members of the public; e) Comment upon legislation concerning families and youth; f) Make recommendations to appropriate legislative bodies concerning any matters deemed to be covered by our several mandates; g) Be visible within the community and recognized as the appropriate body to whom complaints can be made, and to whom recommendations can be proposed for improvement. *[1985 Constitution Summary]*

Comments: Concerns were raised by the Committee's Chair about losing the ability to perform certain work as a body of CRD. The suggested mandate is broad enough to encompass historical tasks and undertake future obligations consistent with its objectives.

PCA Language Summary

Suggested	***Provincial Court Act***
The Committee is hereby tasked with the following duties: (a) to meet at least four times per year to: i. consider and examine community resources for family and children's matters; ii. make recommendations to the court, the Attorney General, or others; iii. solicit and consider applications for receipt of grant-funding;* and iv. connect family-and-justice-involved individuals, service providers, and government in a way that encourages collaboration and identifies service gaps; (b) if requested by the court, to act a resource or assist as directed; and (c) report annually to its member local governments and the Attorney General on activities and recommendations.	(6) The family court committee must do the following: (a) meet at least 4 times a year to consider and examine the resources of the community for family and children's matters, to assist the court when requested and generally, and to make the recommendations to the court, the Attorney General or others it considers advisable; (b) assist the officers and judges of the court, if requested, to provide a community resource or assistance in individual cases referred to the committee; (c) report annually to the municipalities involved and to the Attorney General respecting their activities during the past year.

Comments: A plain-language *PCA* reproduction, with grant-making and collaboration added.

YCJA Language Summary

Suggested by CRD	***Youth Criminal Justice Act***
Not considered necessary to reproduce due to length. Encompassed in the "act as a resource or as directed", "undertake other activities", and mandate.	(a) in the case of a young person alleged to have committed an offence, (i) giving advice on the appropriate extrajudicial measure to be used in respect of the young person, (ii) supporting any victim of the alleged offence by soliciting his or her concerns and facilitating the reconciliation of the victim and the young person, (iii) ensuring that community support is available to the young person by arranging for the use of services from within the community, and enlisting members of the community to provide short-term mentoring and supervision, and (iv) when the young person is also being dealt with by a child protection agency or a community group, helping to coordinate the interaction of the agency or group with the youth criminal justice system; (b) advising the federal and provincial governments on whether the provisions of this Act that grant rights to young persons, or provide for the protection of young persons, are being complied with;

	(c) advising the federal and provincial governments on policies and procedures related to the youth criminal justice system; (d) providing information to the public in respect of this Act and the youth criminal justice system; (e) acting as a conference; and (f) any other functions assigned by the person who establishes the committee.

Other Mandate Language

Richmond

- Mandate copies the *PCA*;
- RFCC functions as a link between the Court and City Council whereby:
    - Court personnel and clients may draw on the concern and support of the community;
    - Family and youth resources may be monitored; and
    - Community may become educated about the justice system and its effects on children, youth and families;

Vancouver

- Provides input to City Council and staff about issues of concern;
- Considers any matters which may referred to the Committee by Council or staff and take under consideration matters proposed by the Vancouver Board of Education;
- Reviews and advises Council and staff on the development, implementation and assessment of City policies and services related to children, youth and families;
- Advocates for the best interests of children, youth and families;
- Identifies opportunities and empowers children and youth to have a voice in civic decision making;
- Provides recommendations to staff and Council on issues affecting children, youth and families;
- May take positions on policy initiatives from other levels of government within the mandate of the Committee; and
- Acts as a family court committee under the BC *Provincial Court Act …* or a youth justice committee under the *Youth Criminal Justice Act*.
- Works co-operatively with other agencies whose activities affect constituent communities, including initiating and developing relevant projects;
- Acts as a resource for staff doing public involvement processes and civic events;
- Exchanges information with constituent communities and the general public about relevant programs and areas of interest; and
- Engages in outreach to disseminate information and encourage participation from constituent communities.

Making a difference...together

REPORT TO HOSPITALS AND HOUSING COMMITTEE
MEETING OF WEDNESDAY, JUNE 02, 2021

SUBJECT **3656 Raymond Street Housing Agreement Rescission Bylaw**

ISSUE SUMMARY

The Capital Regional District (CRD) needs to approve a bylaw that repeals Bylaw No. 4402 because the developer-initiated housing development proposed for 3656 Raymond Street South was not supported by the District of Saanich Council.

BACKGROUND

The CRD's Regional Housing Division, through discussions with the District of Saanich staff and Abstract Developments (the Developer), agreed to enter into a housing agreement for a development located at 3656 Raymond Street South in the District of Saanich.

At its March 10, 2021 meeting, the CRD Board approved Bylaw No. 4402 to support the CRD entering into a Housing Agreement with Abstract Developments to administer resales of six below-market units within the development.

On April 21, 2021, Abstract Developments informed the CRD in writing that the proposed development was not supported by District of Saanich Council, and that Abstract Developments was withdrawing its application.

ALTERNATIVES

Alternative 1
The Hospitals and Housing Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4427, "Resale Control and Housing Agreement Rescission Bylaw (3656 Raymond Street South), 2021" be introduced and read a first, second and third time; and
2. That Bylaw No. 4427 be adopted.

Alternative 2
That the 3656 Raymond Street Housing Agreement and Bylaw report be referred back to staff for additional information based on Hospitals and Housing Committee direction.

IMPLICATIONS

Service Delivery Implications
This decision will relieve the CRD of its statutory obligations outlined in CRD Bylaw No. 4402.

CONCLUSION

The CRD agreed to enter into a Housing Agreement with Abstract Developments in order to administer resales of below-market housing units. The project was not supported by District of Saanich Council and the CRD needs to rescind Bylaw No. 4402 in order to relieve itself of its commitments under the Bylaw.

RECOMMENDATION

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

1. That Bylaw No. 4427, "Resale Control and Housing Agreement Rescission Bylaw (3656 Raymond Street South), 2021" be introduced and read a first, second and third time; and
2. That Bylaw No. 4427 be adopted.

Submitted by:	Don Elliott, MUP, Senior Manager, Regional Housing
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Bylaw 4427

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4427

****

A BYLAW TO REPEAL A HOUSING AGREEMENT
FOR 3656 RAYMOND STREET SOUTH (BYLAW NO. 4402)

****

WHEREAS:

A. The owner of land legally described as Lot E (D.D. 386779I) of Section 14, Victoria District, Plan 14121, PID: 004-356-993 planned to develop it in the District of Saanich to provide, among a strata development of market housing, six units of affordable housing, in the form of one studio, four one-bedroom, and one two-bedroom units, and the Capital Regional District entered into a housing agreement, option to purchase and restrictive covenant relating to said affordable units by bylaw;

B. The owner of land was unable to secure appropriate zoning permissions from the applicable local government and no longer wishes to proceed with the housing agreement, option to purchase and restrictive covenant; and

C. The Capital Regional District Board must discharge such a housing agreement and covenant by bylaw;

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

1. Bylaw No. 4402, “Resale Control and Housing Agreement Bylaw (3656 Raymond Street South), 2021”, is hereby repealed.

2. This Bylaw may be cited for all purposes as “Resale Control and Housing Agreement Rescission Bylaw (3656 Raymond Street South), 2021”.

READ A FIRST TIME THIS	__	day of	2021
READ A SECOND TIME THIS	__	day of	2021
READ A THIRD TIME THIS	__	day of	2021
ADOPTED THIS	__	day of	2021

Chair

Corporate Officer

Making a difference...together

REPORT TO THE LAND USE COMMITTEE
MEETING OF TUESDAY, MAY 18, 2021

SUBJECT **Juan de Fuca Development Fees and Procedures Bylaw Amendment**

ISSUE SUMMARY

To consider an amendment to the Juan de Fuca Development Fees and Procedures Bylaw No. 3885 to establish fees for Official Community Plan (OCP) and zoning amendment applications where Agricultural Land Reserve (ALR) exclusion is also requested.

BACKGROUND

Bylaw No. 3885, the Juan de Fuca Development Fees and Procedures Bylaw, was adopted in 2019. Applications for land development in the ALR are included in the scope of Bylaw No. 3885. The CRD Board approved the Juan de Fuca ALR Application Policy BRD05 at their December 9, 2020 meeting and passed the following resolution:

> *"That the staff be directed to initiate an amendment to the Juan de Fuca Electoral Area Development Fees and Procedures Bylaw, 2018, Bylaw No. 3885, to increase the application fees for OCP and zoning amendment applications where exclusion from the ALR is also required or requested."*

Staff have prepared an amendment to Bylaw No. 3885 to increase the applicable OCP and zoning bylaw amendment fee by $2,000 where ALR exclusion is required. Proposed Bylaw No. 4385 is included as Appendix A.

ALTERNATIVES

Alternative 1:
The Juan de Fuca Land Use Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4385, "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021" be introduced, read a first, a second and a third time; and
2. That Bylaw No. 4385 be adopted.

Alternative 2:
The Juan de Fuca Land Use Committee recommends to the Capital Regional District Board that Bylaw No. 4385, "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021" not proceed.

IMPLICATIONS

Legislative
Section 460 of the *Local Government Act (LGA)* requires that a local government that has adopted an OCP bylaw or zoning bylaw must, by bylaw, define procedures under which an owner of land may apply for an amendment to the plan or bylaw or the issuance of a permit under Part 14 of the *LGA*. Bylaw No. 3885 establishes the fees and procedures for development applications in the Juan de Fuca Electoral Area.

Section 29 of the *Agricultural Land Commission (ALC) Act* came into force on September 30, 2020, and specifies that only government, First Nations or a prescribed body may apply to have land excluded from the ALR. Therefore, in cases where an individual land owner wished to have land excluded, they would request that the local government apply on their behalf. With the exception of exclusion applications, the application fee for ALR applications is $1,500. From this fee, the affected local government is entitled to retain $750 and the remaining $750 is forwarded to the ALC along with

the local government resolution of support or non-support. With regards to exclusion applications, the amendments to the *ALC Act* only include the $750 fee to be remitted by the local government submitting the application.

The powers of the Juan de Fuca Land Use Committee, as stated by Bylaw No. 3166, include making recommendations to the CRD Board on matters for the Electoral Area regarding Part 14 of the *LGA* and other specific matters, including ALR applications.

Financial
The application fee levied upon local governments by the ALC for review of an ALR exclusion application is $750. In addition, the ALR application process undertaken by staff would require additional planning review, analysis, reporting and administration. Additional public notification, consultation and hearing costs would also be incurred prior to submitting the application to the ALC. Since an OCP and zoning bylaw amendment would be required in conjunction with exclusion requests, staff recommend that the fee specified by Bylaw No. 3885 for OCP and zoning amendment applications be increased by $2,000 in order to recover costs associated with ALR exclusion applications. Staff have prepared Bylaw No. 4385 for consideration.

Public Consultation
This is an administrative bylaw; therefore, public consultation is not required. However, notice of the Land Use Committee meeting and agenda will be posted on the CRD website prior to the consideration of this item by the Committee.

CONCLUSION

Where an individual land owner wishes to have land excluded from the ALR, they would request that the local government apply on their behalf. The fee levied by the ALC upon local governments to apply for exclusion is $750. In addition to the application fee, additional staff resources would be required to make application on behalf of a private land owner. Since exclusion requests would require a concurrent OCP and zoning amendment application, staff recommend that a portion of these additional costs be recovered through an increase to the OCP and zoning bylaw amendment application fee. Bylaw No. 4385 has been prepared to increase the OCP and zoning bylaw amendment application fee associated with a request for ALR exclusion by $2,000.

RECOMMENDATION

The Juan de Fuca Land Use Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4385, "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021" be introduced, read a first, a second and a third time; and
2. That Bylaw No. 4385 be adopted.

Submitted by:	Iain Lawrence, MCIP, RPP, Manager Juan de Fuca Community Planning
Concurrence:	Kevin Lorette, P.Eng., MBA, General Manager, Planning and Protective Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services and Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Proposed Bylaw No. 4385

Appendix A: Proposed Bylaw No. 4385

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4385

****

A BYLAW TO AMEND BYLAW NO. 3885, THE "JUAN DE FUCA DEVELOPMENT FEES AND PROCEDURES BYLAW"

****

The Capital Regional District Board, in open meeting assembled, enacts as follows:

1. Bylaw No. 3885 being the "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018" is hereby amended as follows:

    (a) By replacing Schedule B with the Schedule B attached hereto.

This bylaw may be cited as "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021".

READ A FIRST TIME THIS	9th	day of	June	, 2021.
READ A SECOND TIME THIS	9th	day of	June	, 2021.
READ A THIRD TIME THIS	9th	day of	June	, 2021.
ADOPTED THIS	9th	day of	June	, 2021.

CHAIR

CORPORATE OFFICER

Schedule B of Bylaw No. 3885

Application Type or Planning Service	Fee	Additional Fees
OCP Amendment	$3,750	$500 for each public hearing $2,000 where land is also required to be excluded from the ALR
Land Use Bylaw Amendment resulting in less than 3 additional lots	$3,750	$500 for each public hearing
Land Use Bylaw Amendment resulting in 3 or more additional lots	$4,250	$500 for each public hearing
Combined OCP and Land Use Bylaw Amendment	$4,250	$500 for each public hearing $2,000 where land is also required to be excluded from the ALR
Development Permit	$550	$250 for each additional parcel created or included to a maximum total fee of $1,300
Development Permit Amendment	$225	
Floodplain Exemption	$550	$250 for each additional parcel included to a maximum total fee of $1,300
Development Permit with Floodplain Exemption	$750	$250 for each additional parcel created or included to a maximum total fee of $1,500
Frontage Exemption	$750	$250 for each additional parcel included to a maximum total fee of $1,500
Development Variance Permit	$750	$250 for each additional parcel included to a maximum total fee of $1,500
Development Permit with Variance	$1,000	$250 for each additional parcel created or included to a maximum total fee of $1,750
Temporary Use Permit	$2,500	$500 for each newspaper notice
Temporary Use Permit Renewal	50% of the original Permit fee	

Subdivision	$750	$400 for each additional parcel created to a maximum total fee of $1,950
Building Conversion to Strata	$1,500	$400 for each strata parcel created to a maximum total fee of $2,700
Agricultural Land Reserve	In accordance with *ALC Act*	
Liquor License	$1,500	
Cannabis Retail	$1,500	
Radio Communication Towers and Broadcasting Antennas	$2,500	
Application Renewal	$500	
Legal Services Deposit	$500	
Planning Services	$100/hr	

6. Administrative Bylaws

a) Bylaw No. 4385, "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021" (Agricultural Land Reserve Exclusions)

Iain Lawrence spoke to the staff report and proposed Bylaw No. 4385 which would establish fees for Official Community Plan (OCP) and zoning amendment applications where Agricultural Land Reserve (ALR) exclusion is also requested.

Iain Lawrence advised that:
- the application fee levied upon local governments by the Agricultural Land Commission for review of an ALR exclusion application is $750
- an ALR exclusion application would require an OCP and zoning bylaw amendment
- as directed by the CRD Board, Bylaw No. 4385 has been drafted to increase fees for OCP and zoning amendment applications by $2,000 in order to recover costs associated with ALR exclusion applications
- costs include staff time associated with application review, public notification and hearing expenses

Iain Lawrence responded to questions from the LUC advising that:
- in past, private property owners could submit ALR exclusion applications
- the *Agricultural Land Commission Act* now specifies that only government, First Nations or a prescribed body may apply to have land excluded from the ALR
- private property owners are still able to submit ALR inclusion applications and ALR subdivision applications
- the Building Division is permitted to charge $30 for realtor property information reports (Bylaw No. 3741)
- there is degree of expectation that land use information is a basic level of service and that such information should be provided at no cost
- application fees for the Juan de Fuca Community Planning Division were last amended in 2019

The Chair stated support for proposed Bylaw No. 4385 as it would reduce tax payer subsidy. The Chair further stated that fees for soil removal and deposit applications are under review and that he continues to support review of financial separation of Building Inspection Services for each of the Electoral Areas.

MOVED by Sandy Sinclair, **SECONDED** by Roy McIntyre that the Juan de Fuca Land Use Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4385, "Juan de Fuca Development Fees and Procedures Bylaw No. 3, 2018, Amendment Bylaw No. 1, 2021" be introduced, read a first, a second and a third time; and
2. That Bylaw No. 4385 be adopted.

CARRIED

b) Bylaw No. 4412, "Land Use Bylaw for the Rural Resource Lands, Bylaw No. 1, 2009, Amendment Bylaw No. 8, 2021" and Bylaw No. 4413, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 151, 2021" (Outdoor Recreation)

Iain Lawrence spoke to the staff report and proposed Bylaw Nos. 4412 and 4413 which would delete the outdoor recreation definition and permitted use from the Land Use Bylaw for the Rural Resource Lands, Bylaw No. 3602, and from the Juan de Fuca Land Use Bylaw, Bylaw No. 2040.

Making a difference...together

REPORT TO REGIONAL HOUSING TRUST FUND COMMISSION
MEETING OF WEDNESDAY, MAY 26, 2021

SUBJECT **Prosser Application**

ISSUE SUMMARY

A recommendation to the Capital Regional District (CRD) Board is needed in response to a request from the Capital Region Housing Corporation (CRHC) for a grant of $615,000 from the Regional Housing Trust Fund (RHTF) in order to support 41 units of affordable rental housing within the proposed development that also includes an additional 10 units with rents set at the BC Income Assistance Shelter Rate Level at 1909 Prosser Road, located in Central Saanich.

BACKGROUND

The Capital Regional District (CRD) and the CRHC have partnered with BC Housing in an affordable rental housing project at 1909 Prosser Road. This partnership allows for the provision of 51 affordable rental housing units in an area of Central Saanich which is in great need of additional housing options. The Saanichton Village Design Plan outlines the vision of the larger village area to include density and diversity of housing, accommodating people throughout their lifespan which also supports a vibrant village core.

This affordable housing building is also part of a larger development that includes a 40 unit supportive housing building on the adjacent lot that will be owned by BC Housing and operated by an approved housing organization. The total unit and rental structure for the project is presented in Table 1.

Table 1 – Unit Summary

Unit Type	Affordability Level	# of Units		% of Units		Proposed Rent
Studio	Very Low / Deep Subsidy	8	10	16%	20 %	$375
1 Bedroom	Very Low / Deep Subsidy	2		4%		$375
1 Bedroom	Moderate / Affordable	29	41	57%	80 %	$1,345
2 Bedroom	Moderate / Affordable	12		23%		$1,715

The proponent is requesting the consideration of a grant in the amount of $615,000, or $15,000 for each of the 41 affordable rental units proposed for the project. This project was approved by the CRD Board for RHFP funding at its meeting on April 14, 2021. Further details of the project are presented in the Proposal presented in Appendix A.

The project was presented to the Regional Housing Trust Fund Advisory Committee for evaluation where it received a score of 213 out of a total of 235, and the Advisory Committee is recommending approval of the project for grant funding.

ALTERNATIVES

Alternative 1
The Regional Housing Trust Fund (RHTF) Commission recommends to the Capital Regional District Board:
That a grant in the amount of $615,000 to the Capital Region Housing Corporation be approved to support the development of 41 units of affordable rental housing at 1909 Prosser Road, Central Saanich, subject to meeting the terms of the RHTF Grant Funding Agreement.

Alternative 2
That the Prosser Application report be referred back to staff for additional information based on Regional Housing Trust Fund Commission direction.

IMPLICATIONS

Financial Implications
The status report of the RHTF service provided in Table 3 demonstrates that the fund has the capacity to fulfill this request.

Table 2 - RHTF Service Financial Status

Current RHTF Status	**Amount**
Total Funds Available in 2021	$4,209,929
Grant Funds Approved for Other Projects	
Croftonbrook (IWAV)	($264,000)
Cedar Grove (Cool Aid Society)	($600,000)
Charters (M'akola Housing)	($330,000)
Drennan and Sooke (M'akola Housing)	($765,000)
Michigan Square I (CRHC)	($570,000)
Michigan Square 2 (CRHC)	($525,000)
Sub Total	($3,054,000)
Total Remaining for New Grants	**$1,155,929**

Payments on all outstanding grant approvals are expected in the coming fiscal year as each project advances toward construction commencement over the next few months.

Social Implications
This project will provide 10 units of independent housing to help address the needs of people experiencing chronic homelessness in the region. Providing a grant to support the development of the 41 affordable rental units will help address the needs of low and moderate income populations as defined by the RHFP Definitive Agreement, many of whom continue to experience substantial hardship within the current rental market.

Service Delivery Implications
Management and operation of these additional units of housing will be the responsibility of the CRHC and increases in service delivery demands are being facilitated through CRD and CRHC corporate and budget planning processes.

CONCLUSION

The RHTF Commission has limited Letters of Intent and applications for grants to RHFP projects. The CRHC, through the redevelopment of 1909 Prosser Road, is providing an opportunity to expand its existing affordable housing stock and include units at provincial assistance shelter rates to address chronic homelessness. The mixed-market approach outlined in the application aligns with the RHFP model. The proponent's experience and long history in the development and operation of affordable housing makes this an appropriate project to be funded.

RECOMMENDATION

The Regional Housing Trust Fund (RHTF) Commission recommends to the Capital Regional District Board:
That a grant in the amount of $615,000 to the Capital Region Housing Corporation be approved to support the development of 41 units of affordable rental housing at 1909 Prosser Road, Central Saanich, subject to meeting the terms of the RHTF Grant Funding Agreement.

Submitted by:	John Reilly, MSW RSW, Manager Housing Initiatives and Programs
Concurrence:	Don Elliott, MUP, Senior Manager, Regional Housing
Concurrence:	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT

Appendix A: Prosser RHTF Application

CRHC
The Capital Region's Housing Corporation

Capital Region Housing Corporation
631 Fisgard Street
Victoria, BC, Canada V8W 1R7

T 250.388.6422
F 250.361.4970
www.crd.bc.ca/housing

April 22, 2021

Regional Housing Trust Fund Commission
c/o Capital Regional District Housing Planning & Programs
625 Fisgard Street, Victoria, BC V8W 1R7
ATTN: Sarah Potts, Chair, RHTF Commission

RE: Prosser Affordable Housing Application for Regional Housing Trust Fund

We are pleased to submit this application for grant funding through the Regional Housing Trust Fund (RHTF) for the Prosser Affordable Housing Project, located at 1909 Prosser Road in the Saanichton Village area of Central Saanich, BC. The Capital Region Housing Corporation (CRHC) is seeking a $615,000 contribution for this project to enable the construction of 51 new units of quality affordable housing under the Regional Housing First Program.

The Prosser Affordable Housing project has been designed to primarily accommodate low to moderate income individuals and families and those at risk of homelessness. These units will remain affordable over the long term and offer priority through the tenant selection process to indigenous people experiencing homelessness, youth experiencing homelessness, and women fleeing violence. Five of the units (10% of total units) provided will be accessible in order to accommodate individuals with disabilities who are able to live independently without additional on-site supports. The unit type and affordability levels are outlined further below and within the attached application package.

Unit Type	# of Units	Affordability Level	Monthly Rent
Studio	8	Shelter Rate	$375
1 bedroom	2	Shelter Rate	$375
1 Bedroom	29	Moderate ($53,800 annually)	$1,345
2 Bedroom	12	Moderate ($68,600 annually)	$1,715
TOTAL	51		

Please contact us if you require any further information or have any questions. Thank you for your consideration.

Sincerely,

Don Elliott, Senior Manager, Regional Housing, CRD and CRHC

Prosser Affordable Housing Project

1909 Prosser Road, Central Saanich, BC

Regional Housing Trust Fund (RHTF)

April 22nd 2021

CRHC
The Capital Region's Housing Corporation

Submitted by:

Don Elliott, Senior Manager, Regional Housing, CRD

Table of Contents

1.1 Summary Information.....Page 2

2.1 Society Capacity.....Page 3

3.1 Project Rationale: Business Case.....Page 6

4.1 Housing Concept.....Page 9

5.1 Society & Community Contributions.....Page 11

6.1 Capital Budget.....Page 11

7.1 Services Concept.....Page 11

8.1 Operating Budget: Housing.....Page 12

9.1 Schedule.....Page 13

Appendices

Appendix A: Site Plan and Building Design.....Page 14

Appendix B: Landscape Plans.....Page 30

Appendix C: Detailed Budget.....Page 31

1.1 Summary Information

Sponsor Information:

Name of Society:	Capital Region Housing Corporation
Mailing Address:	631 Fisgard St. Victoria BC, V8W 1R7
Telephone:	250-381-6422
Date of Incorporation:	December 10, 1982
CRA Charity Number:	100799642RT001
GST Registration #:	100799642

Contact Information:

Project Manager:	Kimberly Lemmon
Title:	Manager, Planning & Development Capital Region Housing Corporation
Telephone:	250-360-5675
Email:	klemmon@crd.bc.ca

Proposal Summary

The Capital Regional District (CRD) and the Capital Region Housing Corporation (CRHC) has partnered with BC Housing for this affordable rental housing project at 1909 Prosser Road. This partnership allows for the provision of 51 affordable rental housing units in the Saanichton area of Central Saanich, which is in great need of additional housing options. The Saanichton Village Design Plan outlines the vision of the larger village area to include density and diversity of housing, accommodating people throughout their lifespan which also supports a vibrant village core. This project aligns with and will form an important part of this community plan. This 51-unit affordable housing building will be functionally independent once subdivided, but is a part of a larger comprehensive development site at 1909 Prosser Road that includes an adjacent 39-unit supportive housing building that will be owned by the Provincial Rental Housing Corporation (PRHC). The combined development will provide a significant contribution to support the diverse housing needs of the Saanichton community. In order to lessen the projects impact on the environment, it will target a higher energy performance standard than what is required by the BC building code. The project will be designed and constructed to achieve BC Energy Step Code – Step 2.

Table 1 provided below shows a breakdown of the unit types, mix, sizes and rent levels anticipated within the 51 unit RHFP building.

Table 1: Affordable Housing Unit Type, Mix, Size and Rents

Unit Type	Income	# of Units	% of Units	Unit Size (sf)	Rent*
Studio (Deep Subsidy)	Very Low	8	16%	300	$375
1 BR (Deep Subsidy)	Very Low	2	4%	560	$375
1 BR (Affordable)	Moderate	29	57%	560	$1,345
2 BR (Affordable)	Moderate	12	23%	775	$1,715

Project Status

The project has obtained the required municipal approvals and is in the process of finalizing building permit approvals. The 51 unit affordable rental housing building will be separated from the 39 unit supportive housing building through a fee simple subdivision. Provisional project approval is complete and CRD board approval to proceed with the project and allocate $3M in grant funding via the Regional Housing First Program (RHFP) has occurred.

Target Clientele

The Prosser affordable rental housing project has been designed to primarily accommodate low to moderate income individuals and be affordable to people at risk of experiencing homelessness in the region. Priority through the tenant selection process is given to indigenous people experiencing homelessness, youth experiencing homelessness, and women fleeing violence. The housing needs identified for the local area also include families and seniors. Family structures that are primarily supported include small and single parent families with children. Units also target single occupant households including individuals leaving transitional and supportive housing, and youth leaving the care system. Five of the units (10% of total units) provided will be accessible in order to accommodate individuals with disabilities who are able to live independently without additional on-site supports.

Target Occupancy Date

The Prosser affordable rental housing development is anticipated to be complete in March 2022 with occupancy to occur immediately following through the spring of 2022.

2.1 Society Capacity

The CRHC is a wholly-owned subsidiary of the Capital Regional District (CRD). The Corporation is governed by a 24 person Board of Directors comprised of directors of the CRD Board and currently chaired by the mayor of Victoria. The CRHC Board is committed to improving and expanding housing opportunities in the years to come and has adopted the following Value Statement:

We value honestly, integrity, reliability and openness. We work collaboratively with the stakeholders,

community partners and our tenants to build safe, vibrant and accessible communities where our tenants can feel a sense of pride and belonging.

The CRD Board's 2019-2022 Corporate Plan includes four strategic priorities: Community Wellbeing – Transportation & Housing; Climate Action & Environmental Stewardship; First Nations Reconciliation; and Advocacy, Governance & Accountability. The Board's strategic initiative includes a mandate to create and deliver more affordable housing across the region in a manner aligned with the Regional Growth Strategy in order to address the needs of a diverse and growing population, including vulnerable residents.

CRHC Experience

As the largest social housing provider in the capital region, the CRHC delivers affordable, inclusive, sustainable housing. The CRHC provides low to moderate income families with safe, suitable homes that remain affordable as their lives and families change and grow. The CRHC also provides affordable housing for low income seniors and people living on government disability pensions. Table 2 below outlines recently complete and currently underway projects where development has been undertaken directly by the CRHC.

Table 2: Current or Recently Complete CRHC Developments

CRHC Affordable Housing Projects	*Total*	*Funding Program*	*Status*
Millstream Ridge	132		Complete (2019)
Westview	73	RHFP	Complete (2020)
Spencer Close	130	RHFP	Complete (2020)
West Park	152	RHFP	Complete (2020)
Hockley House	120	RHFP	Construction (2021)
2780 Spencer Road	58	CHF	Design (2022)*
Caledonia	158	CHF	Planning/Design (2023)*
Michigan Square	97	CHF, RHFP	Planning/Design (2023)*

* anticipated completion date / RHFP - Regional Housing First Program / CHF - Community Housing Fund

CRHC Organization

The primary activities of the CRHC are the day-to-day property and asset management of affordable rental housing, as well as providing services to residents who live in over 47 housing complexes across seven municipalities. The CRHC has been operating housing for over 37 years in the capital region. By March 2021, the CRHC will own and operate 1,893 units. The CRHC has annualized preventative maintenance programs, unit inspections, portfolio wide service contracts, and 5 year capital plans for all of its properties. The CRHC also has a dedicated staff of property managers and caretakers to manage and address property maintenance. In order to support the new

housing at 1909 Prosser Road, the CRHC will increase its staffing component accordingly. CRHC Senior Staff and CRHC Board of Directors are responsible for the implementation of successful projects, and together have a combined relevant experience of over 200 years. Please refer to Table 3 & 4 below.

Table 3: CRHC Senior Staff

Title	Name	Role & Responsibility	Years' Experience	Affiliation
Chief Administrative Officer	Robert Lapham	CRD, CRHD & CRHC	35	CRD
Chief Financial Officer	Nelson Chan	CRD, CRHD & CRHC	20	CRD
General Manager	Kevin Lorette	Planning & Protective Services	25	CRD
Senior Manager, Regional Housing	Don Elliott	Management and Oversight of Regional Housing	10	CRD, CRHC
Manager of Construction & Capital Projects	Rob Fowles	Management of construction and renewal projects & team	18	CRD, CRHC
Manager, Planning & Development	Kimberly Lemmon	Management of planning & development projects & team	14	CRD, CRHC
Senior Project Coordinator	Colin Merriam	Coordination of planning & development projects	13	CRD, CRHC
Senior Project Coordinator	Kyle Teschke	Coordination of construction and renewal projects	15	CRD, CRHC
Manager of Operations	Sharon Grigg	Ongoing operations of the CRHC & management of Tenant Engagement	20	CRHC
Senior Manager, Communications	Andy Orr	Management of CRD Communications	25	CRD, CRHC
Communications Coordinator	Jean Pakvis	Coordination of Communications	12	CRD, CRHC

Table 4: CRHC Board of Directors Leadership Positions

Title	Name
Chair	Lisa Helps, Mayor, City of Victoria
Vice-Chair	David Screech, Mayor, Town of View Royal

Partnerships

The CRHC has a long history of partnering with organizations where CRHC provides housing and the partnering organizations provides supports. Through these partnerships, the CRHC developed the

"Supports in Social Housing (SSH)" program. CRHC holds these agreements with Island Health, Community Living Victoria, Pacifica Housing, The Cridge Centre for the Family, Our Place Society, and the Aboriginal Coalition to End Homelessness.

The Regional Housing First Program units' tenants are chosen through the Coordinated Access and Assessment (CAA) process. The CAA is a partnerships between BC Housing, Island Health and CRD in collaboration with non-profit housing providers.

SSH agreements will be established with Support Providers for the tenants that are placed into Prosser through the CAA process.

Current & Ongoing CRHC Affordable Housing Projects

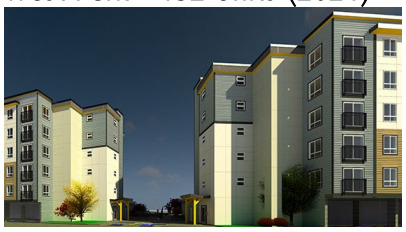
Westview – 73 Units (2020)

Hockley – 120 Units (2021)

Caledonia - 158 Units (2023)

Spencer – 130 Units (2020)

West Park – 152 Units (2021)



Michigan Square - 97 Units (2023)

3.1 Project Rationale: Business Case

Community Need

The Capital Regional District through the Regional Housing Affordability Strategy (2018) identifies the current demographic and housing supply needs of the region. The region is experiencing ongoing population and household growth pressures, with growth of more than 38,000 individuals (17,000 households) over the past 10 years. This growth rate has been higher than the provincial average over the past five years. There is an estimated shortfall of 6,200 rental housing units in the capital region. This includes approximately 3,000 units that are affordable to households with an average annual income of $22,378 (households in Core Housing Need) as well as approximately 3,000 units that are affordable to households with an average annual income of $55,551.

CMHC data (2016 census) for the related census track within Central Saanich indicates that 23.5% of households that rent in this area are in Core Housing Need. This is a significantly higher rate than the regional average of 14.2% (across all household types). The highest rates within this group are single parent households (at 66.7%), seniors (at 40%), and one person households (at 36.4%). This CMHC data further reinforces the need for increased affordable rental options for seniors, families (including small families with single parent households), and low to moderate income single occupant households, in addition to those at risk of homelessness.

The CRD Housing Needs Assessment for Central Saanich also highlights some specific pressures on rental affordability in the District. The average household income among renters is $47,782 which when compared against the population of owners is less than half ($98,393). With this average annual income for renters, the threshold for affordability (at 30% household income) requires rental rates which are much lower than the current average in the district. The rental rates proposed are well below these market rates which aligns this new housing with what is affordable to a much greater population of renters in the area. The district is also experiencing a very low vacancy rate at 0.6% which demonstrates a great need for additional supply such as this development.

Location

The site is located at 1909 Prosser Road in an area of Central Saanich within 1 km of the village of Saanichton. Major bus routes run directly in front of the building along East Saanich Road and along Wallace Drive within 250 metres of the building. This proximity to bus routes makes public transportation a convenient option for residents. The village of Saanichton is 1 km north of the subject site and contains local commercial amenities including grocery, restaurant/cafes, pharmacy, bank and municipal hall. The subject lands are in close proximity to a variety of regional and local parks, including 200 metres to Centennial Park and 3.7 km to John Dean Park. Table 5 below outlines further site information and Figure 1 below that shows the site location and context of the surrounding area.

Table 5: Site Details

Site Location	1909 Prosser Road, Saanichton, BC
Legal Description	Lot B Section 7 Range 2E South Saanich District Plan V1P77742
Current Owner/Developer	WestUrban Developments Ltd.
Surrounding Land Uses	Residential, Open Space
Utilities	Connected to municipal water, storm and sanitary sewer (upgrade required)
Total site size (ha / sq.ft.)	0.25 / 27,017

Proximity to Community Amenities	Situated in the village of Saanichton; Located at the corner of Prosser Rd & East Saanich Rd; 1 km to Thrifty Foods & Saanichton Commercial Centre; 2.5 km to Brentwood Elementary School; 4 km to Bayside Middle School; 1.3 km to Stelly's Secondary School; 200 meters to Centennial Park
Proximity to Public Transit	Directly adjacent to primary transit bus stop; secondary transit bus stop within 150 meters on Wallace Drive

Figure 1: Site Location

4.1 Housing Concept

Building Design

Based on the housing needs identified for the area, the development has been designed to primarily accommodate low to moderate income individuals and be affordable to people at risk of experiencing homelessness in the region. Priority through the tenant selection process is given to indigenous people experiencing homelessness, youth experiencing homelessness, and women fleeing violence. The housing needs identified for the local area also include families and seniors. Families targeted include small families such as single parent families (and specifically women with children). Units also target single occupant households including individuals leaving transitional and supportive housing, and youth leaving the care system. Table 1 outlines this unit mix based on unit type and affordability level. Approximately 25% of the units are 2 bedroom units and are proportioned across different levels of affordability. These unit types provide a much needed increase in housing options for families within the community. The other 75% of the units contain 1 bedroom or less and are also across a variety of affordability levels. These unit types cater to seniors and single occupant households as outlined above. These units sizes are also planned to give residents a comfortable amount of space for long term livability while also being efficient in order to keep them affordable. Table 1 also outlines anticipated rent levels for the various unit types.

Table 6 below outlines general building details and Figure 2 outlines the general size and configuration of the building (Building A) on the site, illustrated at the ground level. The main entrance and vehicle access is along East Saanich Road. Figure 3 below shows the building at a typical floor level. Typical floors have 13 units at a variety of unit types.

Table 6: Building Details – Building A

Building size (sq.ft.)	31,355
Building description	4 storey wood frame construction
Number of residential units	51
On-Site Parking	61 stalls (underground)
Site Access	Vehicle Access from East Saanich Road

Figure 2: Site Layout & Ground Level Plan

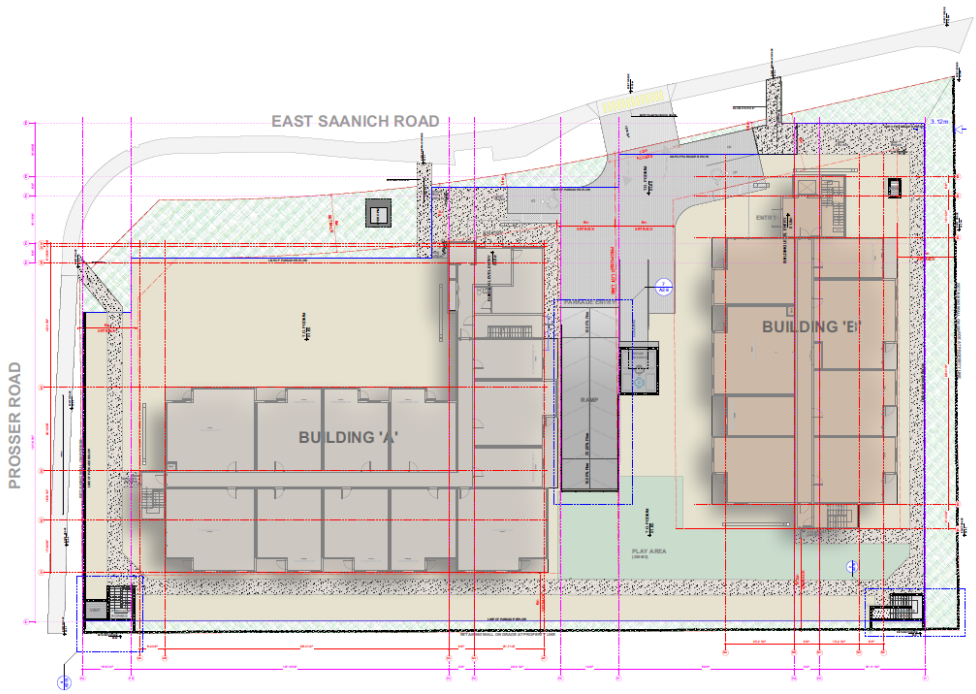
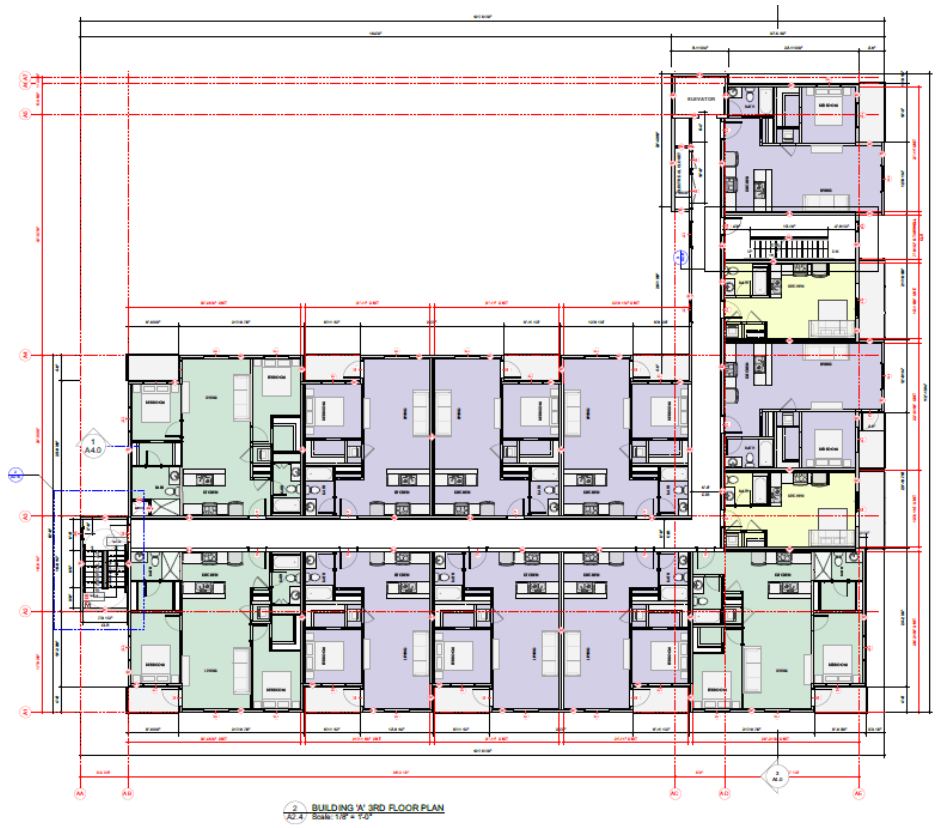


Figure 3: Typical Affordable Housing Level Plan



5.1 Society & Community Contributions

The CRD is purchasing the affordable rental housing project as a turn-key building to be constructed by WestUrban Developments Ltd. with a total cost of $16.9M. The CRD will in turn enter into a long-term lease with the CRHC for $10.1M who will then be the owner/operator of the 51 affordable rental units.

The project has received grant funding support through the Regional Housing First Program (RHFP) for $3M, the Investment in Housing Initiative (IHI) program for $3.25M and anticipate additional funding through the Regional Housing Trust Fund (RHTF) for $615,000. These funding sources outlined in the table below will offset the Capital Cost to a level that allows the CRHC to provide the units at an affordable rental rate while also achieving ample debt coverage to ensure long term financial viability for the project.

Table 7: Project Equity

	Project Equity
RHFP Grant	$3,000,000
RHTF Grant	$615,000
IHI Grant	$3,250,000
Total Equity	$6,865,000

6.1 Capital Budget

The Capital Costs for this project are $16,981,555 and a high-level capital budget is provided in the table below. A detailed version is contained within Appendix C.

Table 8: High Level Capital Costs

	Projected Costs
Purchase Price	$15,932,800
Soft Costs	$948,755
Contingency	$100,000
Total Project Costs	$16,981,555

7.1 Services Concept

Community Impacts & Benefits

The project's vision is to provide inclusive housing opportunities that are in close proximity to important commercial and community amenities, and convenient public transportation options. The project is in

close proximity to the village of Saanichton which includes other multi-unit residential buildings as well as commercial businesses. There are major bus routes along East Saanich Road, which is directly in front of the building, as well as Wallace Drive which is a short distance away. The Saanichton Village Design Plan outlines the vision of the larger village area to include density and diversity of housing, accommodating people throughout their lifespan which also supports a vibrant village core. The project fits well within this community context and the village nature of the area will help serve to integrate the residents with the broader community.

The project is in close proximity to the village of Saanichton which includes other multi-unit residential buildings and commercial amenities. The project fits well within this community context and the village nature of the area will help serve to integrate the residents with the broader community.

There is currently a private single family residence on the site. Therefore there are no existing rental tenants that are being displaced with this redevelopment that require relocation.

Target Population Impacts & Benefits

Based on the housing needs identified for the area, the development has been designed to primarily accommodate low to moderate income individuals and be affordable to people at risk of experiencing homelessness in the region. Priority through the tenant selection process is given to indigenous people experiencing homelessness, youth experiencing homelessness, and women fleeing violence. The housing needs identified for the local area also include families and seniors. Families targeted include small families such as single parent families (and specifically women with children). Units also target single occupant households including individuals leaving transitional and supportive housing, and youth leaving the care system. Table 1 outlined previously in this proposal shows the unit mix based on unit type and affordability level.

8.1 Operating Budget: Housing

Monthly debt servicing and operating expenses are covered by the rental and parking income generated with a Net Cash Flow achieving a 1.1 Debt Coverage Ratio (DCR). A high-level operating budget outlining this is provided on the table below and detailed in Appendix C.

Table 9: Operating Budget – Revenue & Expenses

	Projected Revenue
Tenant Rent Revenue	$760,020
Parking Revenue	$18,360
Less 2.5% Vacancy Loss	$19,460
Total Project Revenue	$758,921

	Projected Expenses
Operating Expenses	$244,188
Replacement Reserve Contribution	$45,288
Net Operating Income	$469,455
Annual Mortgage Debt Servicing	$426,747
Net Cash Flow	$42,698
Debt Service Ratio	1.1

9.1 Schedule

A high-level project schedule has been provided below. Construction is anticipated to commence in spring 2021, completed within 12 months in spring 2022 with occupancy occurring in April 2022.

Table 10: Project Timeline

Phase	Timeline	Detailed Activities
Development Phase	October 2020	Development Permit with Variances Approved
	December 2020	Building Permit Application
	March 2020	Final Project Commitment/Grant Funding Approval
Construction Phase	March 2021	Demolition & Building Permit Issuance
	March 2021	Excavation
	April 2021	Building Construction Commences
	March 2022	Construction Completion
Occupancy Phase	January 2022	Tenant Selection Begins
	March 2022	Closing Date
	March 2022	Mortgage Takeout & Insurance
	April 2022	Occupancy & Full Operation Commences

Appendix A

PROSSER MULTIFAMILY

1909 PROSSER ROAD, SAANICH, BC

PREPARED BY

THUJA ARCHITECTURE STUDIO LTD.

NOVEMBER 2020

SET NO.

ISSUED FOR BUILDING PERMIT

THUJA
architecture + design

PROJECT DATA

LEGAL ADDRESS:
LOT B SECTION 7 RANGE 2E
SOUTH SAANICH DISTRICT PLAN V1P77742

CIVIC ADDRESS:
1909 PROSSER RD, SAANICH BC

ZONING:
RM5

TOTAL LOT SIZE
+/- 4380 SQ.M.

CHILDREN'S PLAY AREA:
TWO BEDROOM: 23*(10 SQ.M.) = 230 SQ.M.
THREE BEDROOM: 0*(20 SQ.M.) = 0 SQ.M.
TOTAL SITE AREA PROVIDED: 230 SQ.M.

PARKING:

REQUIRED	LOT 1: 1.2 PER UNIT (50) =	61
(PER EXIST. DP)	LOT 2: 1.05 PER UNIT (40) =	42
TOTAL REQUIRED		**103**

PROVIDED

STANDARD:	67
HANDICAP STALLS	5
EV CHARGING STALLS	6
SMALL CAR (MAX 30%)	25
TOTAL	**103**

BICYCLE PARKING:

LOT 1:	1.5 PER UNIT (50) = 75
LOT 2:	0.8 PER UNIT (40) = 33
TOTAL REQUIRED:	**108**

\+ SHORT TERM BICYCLE PARKING
(1 PER 10 PKG STALLS) 10

PROVIDED: 38 VERTICAL STORAGE
80 HORIZONTAL STORAGE
118 (+2 - 6 BIKE CLASS 2)

(INCLUDING 2 BIKE / SCOOTER CHARGING AREAS)

LOT 1 - BUILDING 'A":

PROPOSED LOT AREA: 2510 SQ.M.

BUILDING AREA:
PROPOSED FOOTPRINT: 939.2 SQ.M (INCLUDES DECKS)

PARKADE AREA: 3662.2 SQ.M.

FLOOR AREAS:

MAIN	678.9 SQ.M.
SECOND	744.6 SQ.M.
THIRD	744.6 SQ.M.
FOURTH	744.6 SQ.M.
TOTAL (NET)	**2912.7 SQ.M. EXCLUDING PARKADE**

COMMON (MAIN)	197.1 SQ.M.
COMMON (SECOND)	128.1 SQ.M.
COMMON (THIRD)	128.1 SQ.M.
COMMON (FOURTH)	128.1 SQ.M.
TOTAL (NET)	**581.4 SQ.M. EXCLUDING PARKADE**
TOTAL (GROSS)	**3494.1 SQ.M. EXCLUDING PARKADE**

FLOOR AREA RATIO:
ALLOWABLE: 1.6
PROPOSED: 1.39

DENSITY:
PROPOSED: LOT 1 - 50 UNITS

LOT COVERAGE:
45% ALLOWABLE
37.4% PROPOSED

BUILDING HEIGHT:
4 STOREYS

UNIT COUNT:	MAIN	2ND-4TH	BUILDING
STUDIO BEDROOM	1	2 (*3)	7
ONE BEDROOM	6	8 (*3)	30
TWO BEDROOM	4	3 (*3)	13
TOTAL	**11**	**13**	**50**

SETBACKS	**ALLOWABLE / PROPOSED**
FRONT	6.0M / 6.4M
REAR	6.0M / 6.0M
SIDE	6.0M / 6.0M
SIDE (EXTERIOR)	6.0M / 7.0M

LOT 2 - BUILDING 'B':

PROPOSED LOT AREA: 1870 SQ.M.

BUILDING AREA:
PROPOSED FOOTPRINT: 616.8 SQ.M (INCLUDES DECKS)

FLOOR AREAS:

MAIN	441.3 SQ.M.
SECOND	441.3 SQ.M.
THIRD	441.3 SQ.M.
FOURTH	441.3 SQ.M.
FIFTH	441.3 SQ.M.
TOTAL (NET)	**2206.5 SQ.M. EXCLUDING PARKADE**

COMMON (MAIN)	139.3 SQ.M.
COMMON (SECOND)	139.3 SQ.M.
COMMON (THIRD)	139.3 SQ.M.
COMMON (FOURTH)	139.3 SQ.M.
COMMON (FIFTH)	139.3 SQ.M.
TOTAL (NET)	**696.5 SQ.M EXCLUDING PARKADE**
TOTAL (GROSS)	**2903 SQ.M EXCLUDING PARKADE**

FLOOR AREA RATIO:
ALLOWABLE: 1.6
PROPOSED: 1.55

DENSITY:
PROPOSED: LOT 2 - 40 UNITS

LOT COVERAGE:
45% ALLOWABLE
33.0% PROPOSED

BUILDING HEIGHT:
5 STOREYS

UNIT COUNT:	MAIN-5TH	BUILDING
STUDIO BEDROOM	2 (*5)	10
ONE BEDROOM	4 (*5)	20
TWO BEDROOM	2 (*5)	10
TOTAL	**8 (*5)**	**40**

SETBACKS	**ALLOWABLE / PROPOSED**
FRONT	6.0M / 6.34M
REAR	10.5M / 10.5M
SIDE	6.0M / 6.0M
SIDE	6.0M / 9.8M

CONSULTANT LIST

DEVELOPER/OWNER
WESTURBAN DEVELOPMENTS LTD.
Sean Roy, CEO
1-1170 Shoppers Row, Campbell River BC V9W 2C8
250.914.8485
sroy@westurban.ca

ARCHITECT
THUJA ARCHITECTURE STUDIO LTD.
Tanis Schulte, Architect AIBC, LEEP AP
41289 Horizon Dr. Squamish BC V8B 0Y7
250.650.7901
info@thujaarchitecture.ca

LANDSCAPE ARCHITECT
LAZZARIN SVISDAHL LANDSCAPE ARCHITECTS
Laurelin Svisdahl
202- 1300 St Ave, Prince George BC, V2L 2Y3
250.563.6158
laurelin.la@outlook.com

STRUCTURAL ENGINEER
HEROLD ENGINEERING LTD.
Kate Ulmer, P.Eng.
1051 Vancouver Street, Victoria, BC V8T 4T6
250-590-4875
KUlmer@heroldengineering.com

MECHANICAL ENGINEER
AVALON MECHANICAL
Johathan Edgell, P.Eng.
250-940-2975

ELECTRICAL ENGINEER
TRIUMPH ELECTRICAL CONSULTING ENGINEERING LTD.
Steve Cooke, P. Eng.
5056 Cordova Bay Road, Victoria, BC V8Y 2K4

CIVIL ENGINEER
HEROLD ENGINEERING LTD
1051 Vancouver Street, Victoria, BC V8T 4T6
250-590-4875
SCampden@heroldengineering.com

DRAWING INDEX 38 SHEETS

A0.0 COVER PAGE
A1.0 SITE PLAN & PROJECT DATA
A1.1 PODIUM & SITE SURFACES / DRAINAGE PLAN
A1.1 CODE REVIEW & WALL / FLOOR ASSEMBLIES

A2.0 PARKADE OVERALL FLOOR PLAN
A2.1 MAIN SLAB PLAN
A2.2 BLDG 'A' B' MAIN OVERALL FLOOR PLAN
A2.3 BLDG 'A' B' 2ND OVERALL FLOOR PLANS
A2.4 BLDG 'A' B' 3RD OVERALL FLOOR PLANS
A2.5 BLDG 'A' B' 4TH OVERALL FLOOR PLAN
A2.6 BLDG 'B' 5TH OVERALL FLOOR PLAN
A2.7 BLDG 'A' 'B' ROOF PLAN
A2.8 BLDG 'A' 'B' ROOF PLAN
A2.9 BLDG 'A' A-1 STAIRPLAN, PARKADE RAMP PLAN
S2.10 BLDG 'A' A-2 STAIRPLANS
A2.11 BLDG 'B' B-1 STAIRPLANS
A2.12 BLDG 'B' B-2 STAIRPLANS
A2.13 PARKADE EGRESS STAIRPLANS
A2.14 STAIR REQUIREMENTS - DETAILS
A2.15 UNIT PLANS - 2 BDRM
A2.16 UNIT PLANS - 1 BDRM, STUDIO

A3.0 ELEVATIONS
A3.1 ELEVATIONS

A4.0 BUILDING SECTIONS

A5.0 FOUNDATION DETAILS
A5.1 FOUNDATION DETAILS
A5.2 ROOF DETAILS
A5.3 ROOF DETAILS - DRAINAGE
A5.4 BLDG 'A' ENTRY CANOPY DETAILS
A5.5 BLDG 'B' ENTRY CANOPY DETAILS
A5.6 EXTERIOR WALL DETAILS
A5.7 WALL DETAILS
A5.8 UNIT EXTERIOR WALL DETAILS
A5.9 UNIT EXTERIOR WALL DETAILS
A5.10 FLASHING DETAILS
A5.11 FLASHING DETAILS

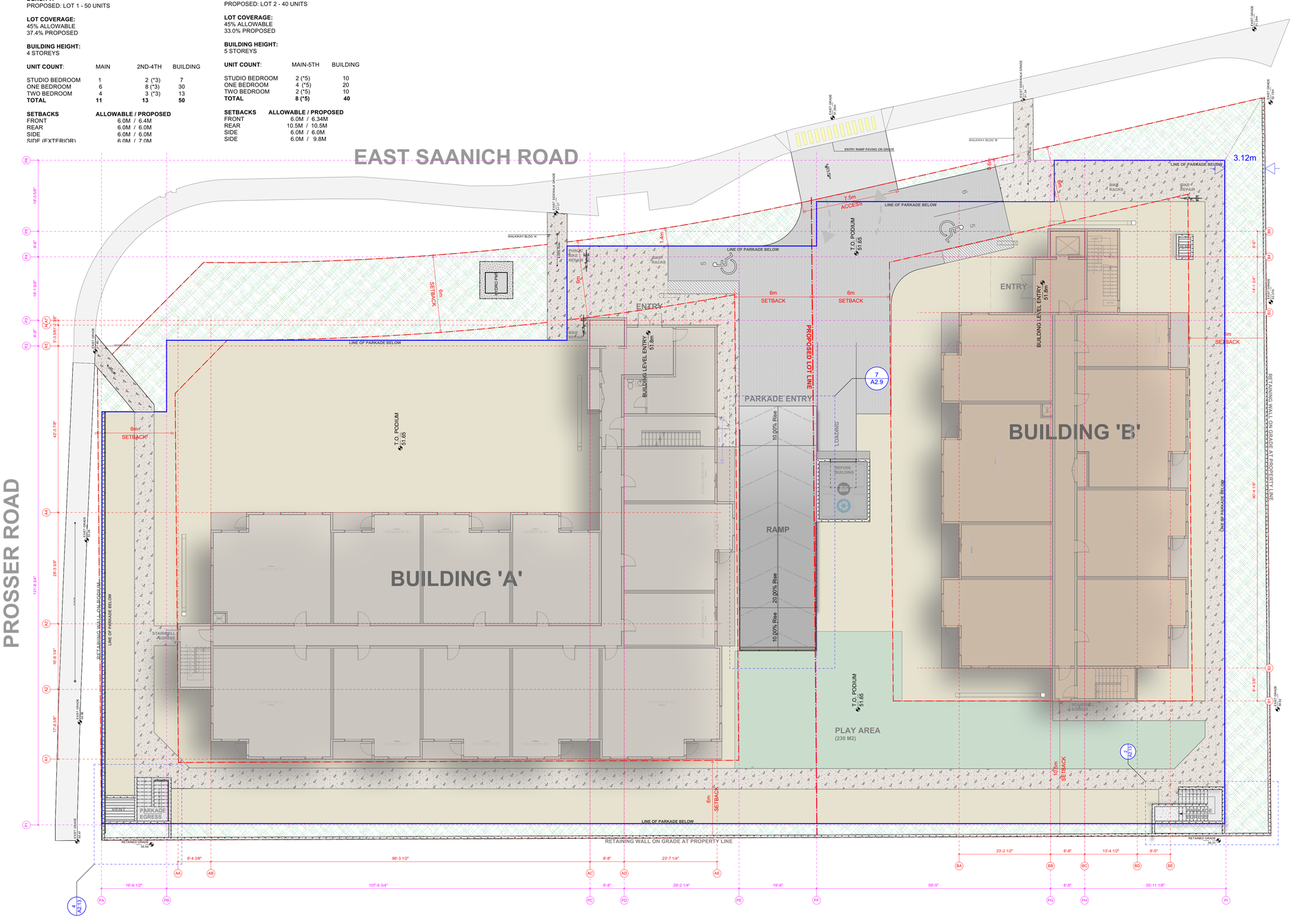
A6.0 DOOR & WINDOW SCHEDULE
A6.1 DOOR & WINDOW SCHEDULE

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT TANIS ERIN SCHULTE BRITISH COLUMBIA

NOV. 23, 2020



NORTH 1 A1.0 SITE PLAN
Scale: 1:150

PPS-RH-2021-20-Appendix A

THUJA architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

SITEPLAN

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A1.0

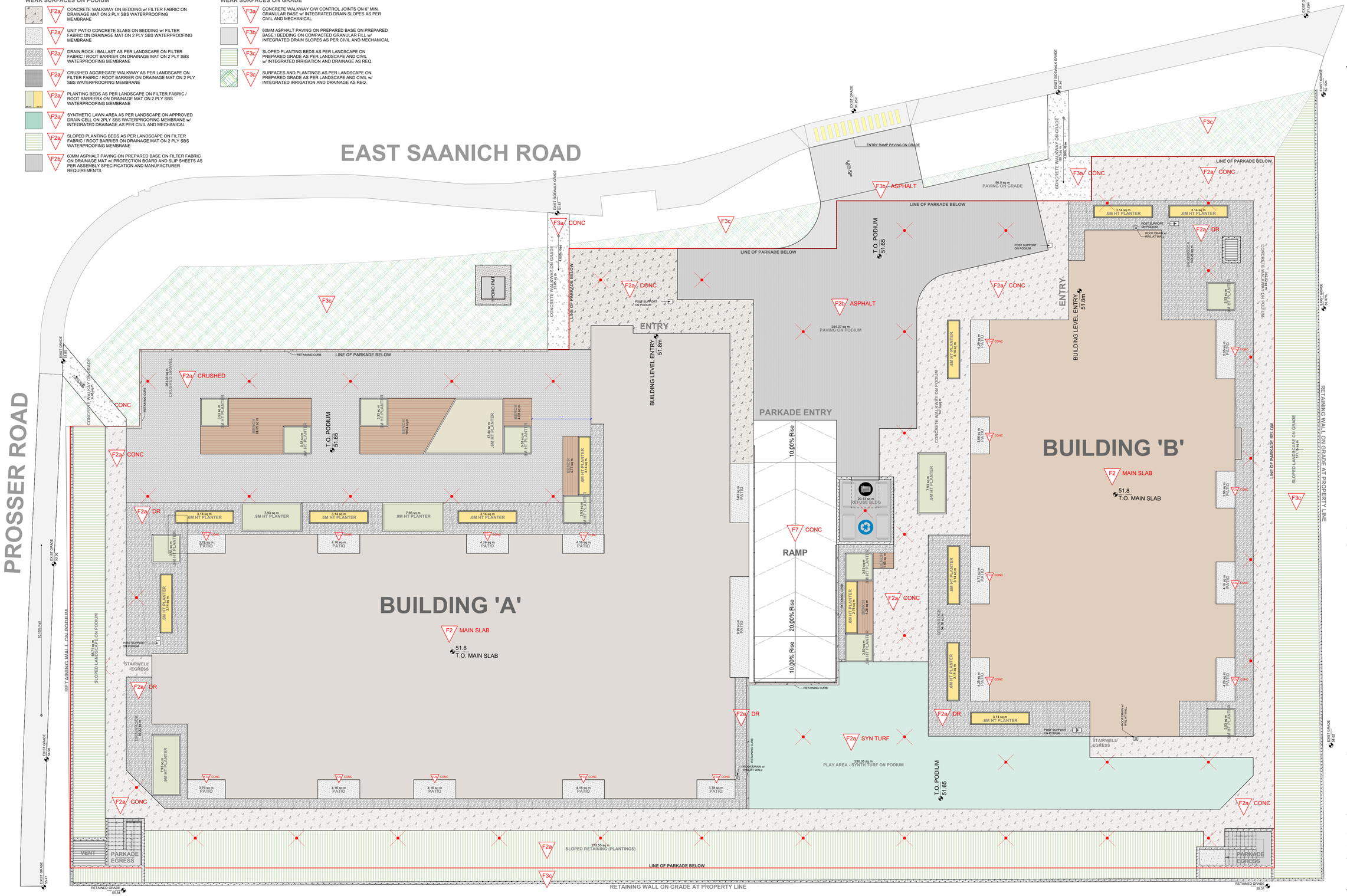
PODIUM DRAIN - AS PER MECHANICAL
AVERAGED 2% SLAB SLOPE TO DRAIN

WEAR SURFACES ON PODIUM

- F2a — CONCRETE WALKWAY ON BEDDING w/ FILTER FABRIC ON DRAINAGE MAT ON 2 PLY SBS WATERPROOFING MEMBRANE
- F2a — UNIT PATIO CONCRETE SLABS ON BEDDING w/ FILTER FABRIC ON DRAINAGE MAT ON 2 PLY SBS WATERPROOFING MEMBRANE
- F2a — DRAIN ROCK / BALLAST AS PER LANDSCAPE ON FILTER FABRIC / ROOT BARRIER ON DRAINAGE MAT ON 2 PLY SBS WATERPROOFING MEMBRANE
- F2a — CRUSHED AGGREGATE WALKWAY AS PER LANDSCAPE ON FILTER FABRIC / ROOT BARRIER ON DRAINAGE MAT ON 2 PLY SBS WATERPROOFING MEMBRANE
- F2a — PLANTING BEDS AS PER LANDSCAPE ON FILTER FABRIC / ROOT BARRIERX ON DRAINAGE MAT ON 2 PLY SBS WATERPROOFING MEMBRANE
- F2a — SYNTHETIC LAWN AREA AS PER LANDSCAPE ON APPROVED DRAIN CELL ON 2PLY SBS WATERPROOFING MEMBRANE w/ INTEGRATED DRAINAGE AS PER CIVIL AND MECHANICAL
- F2a — SLOPED PLANTING BEDS AS PER LANDSCAPE ON FILTER FABRIC / ROOT BARRIER ON DRAINAGE MAT ON 2 PLY SBS WATERPROOFING MEMBRANE
- F2b — 60MM ASPHALT PAVING ON PREPARED BASE ON FILTER FABRIC ON DRAINAGE MAT w/ PROTECTION BOARD AND SLIP SHEETS AS PER ASSEMBLY SPECIFICATION AND MANUFACTURER REQUIREMENTS

WEAR SURFACES ON GRADE

- F3a — CONCRETE WALKWAY C/W CONTROL JOINTS ON 6" MIN. GRANULAR BASE w/ INTEGRATED DRAIN SLOPES AS PER CIVIL AND MECHANICAL
- F3b — 60MM ASPHALT PAVING ON PREPARED BASE ON PREPARED BASE / BEDDING ON COMPACTED GRANULAR FILL w/ INTEGRATED DRAIN SLOPES AS PER CIVIL AND MECHANICAL
- F3c — SLOPED PLANTING BEDS AS PER LANDSCAPE ON PREPARED GRADE AS PER LANDSCAPE AND CIVIL w/ INTEGRATED IRRIGATION AND DRAINAGE AS REQ.
- F3c — SURFACES AND PLANTINGS AS PER LANDSCAPE ON PREPARED GRADE AS PER LANDSCAPE AND CIVIL w/ INTEGRATED IRRIGATION AND DRAINAGE AS REQ.


EAST SAANICH ROAD
PROSSER ROAD
EXIST GRADE 51.65
EXIST SIDEWALK GRADE 51.37
EXIST GRADE 51.45m
EXIST GRADE 51.39m
EXIST GRADE 51.18m
EXIST GRADE 50.58m
EXIST GRADE 50.36
EXIST GRADE 49.99
EXIST GRADE 49.47
EXIST GRADE 54.42
ENTRY RAMP PAVING ON GRADE
56.5 sq m PAVING ON GRADE
CONCRETE WALKWAY ON GRADE 4.00% Rise
CONCRETE WALKWAY ON GRADE 4.00% Rise
CONCRETE WALKWAY ON GRADE 10.00% Rise
CONCRETE WALKWAY ON GRADE 10.00% Rise
CONCRETE WALKWAY ON GRADE 10.00% Rise
CONCRETE WALKWAY ON GRADE 10.00% Rise
CONCRETE WALKWAY ON GRADE 4.00% Rise
CONCRETE WALKWAY ON GRADE 4.00% Rise
CONCRETE WALKWAY ON GRADE 4

PROSSER APARTMENT A - CODE ANALYSIS

3.1.2 BUILDING CLASSIFICATION:

3.1.2.1 CLASSIFICATION BY OCCUPANCY

LEVELS P1 :	GROUP F3 LOW HAZARD INDUSTRIAL
LEVELS 1-4:	GROUP C RESIDENTIAL

3.1.3 MULTIPLE OCCUPANCY REQUIREMENTS:

3.1.3.1. SEPARATION OF MAJOR OCCUPANCIES:

EXIT FACILITIES ON P1	2H FRR
PARKING BIKE STORAGE (CHAINLINK)	NONE
REFUSE TO PARKING	1.5HR FRR
MECH/ELEC. TO PARKING	1.5HR FRR
PARKING LEVEL P1 TO L1 MAIN	2HR FRR
ENCLOSED EXIT FACILITIES ON L1	1HR FRR
L1 TO L4 RESIDENTIAL SUITES TO CORRIDOR	1HR FRR
L1 TO L4 RESIDENTIAL SUITES ADJACENT	1HR FRR

3.1.17 OCCUPANT LOAD

1), b) RESIDENTIAL: 2 PERSONS PER SLEEPING ROOM
126 PERSONS PER BUILDING

3.2.2 BUILDING SIZE & CONSTRUCTION:

3.2.2.6 MULTIPLE MAJOR OCCUPANCIES:
THE BUILDING HAS BEEN DESIGNED TO THE MOST RESTRICTED MAJOR OCCUPANCY
3.2.2.10 STREETS:
BUILDING FACES 1 STREET (EAST SAANICH RD) AND PROVIDES ACCESS AS PER 3.2.5

3.2.2.51 GROUP C, UP TO 4 STOREYS, SPRINKLERED

1), c), iv) IT HAS A BUILDING AREA NOT MORE THAN 1,800 M. SQ.

2) BUILDING TO BE OF COMBUSTIBLE/NON-COMBUSTIBLE CONSTRUCTION

2), a) FLOOR ASSEMBLIES SHALL BE FIRE SEPARATIONS WITH A FIRE RESISTANCE RATING NOT LESS THAN 1 H

2), c) LOAD BEARING WALLS SHALL HAVE A FIRE RESISTANCE RATING NOT LESS THAN THAT REQUIRED FOR THE SUPPORTED ASSEMBLY (1 H FIRE RESISTANCE)

3.2.2.84 GROUP F DIV.3, UP TO 4 STOREYS, SPRINKLERED

1), c), iv) IT HAS A BUILDING AREA NOT MORE THAN 3,600 M. SQ.

2) BUILDING TO BE OF COMBUSTIBLE/NON-COMBUSTIBLE CONSTRUCTION

2), a) FLOOR ASSEMBLIES SHALL BE FIRE SEPARATIONS WITH A FIRE RESISTANCE RATING NOT LESS THAN 1 H

2), c) LOAD BEARING WALLS SHALL HAVE A FIRE RESISTANCE RATING NOT LESS THAN THAT REQUIRED FOR THE SUPPORTED ASSEMBLY (1 H FIRE RESISTANCE)

ARTICLE 3.2.3.1. D SPATIAL SEPARATION AND EXPOSURE PROTECTION

NORTH WALL

LIMITING DISTANCE (LD) = 8.66 M (STREET FACING)
EXPOSED BUILDING FACE (EBF) = 227.11 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 100 %
UNPROTECTED OPENING (ACTUAL) =8% (18.3 SQ.M)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING
= COMBUSTIBLE/NON-COMBUSTIBLE

SOUTH WALL

LIMITING DISTANCE (LD) = 7.33 M
EXPOSED BUILDING FACE (EBF) = 342 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 66%
UNPROTECTED OPENING (ACTUAL) = 20% (69.5 SQ.M.)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING
= COMBUSTIBLE/NON-COMBUSTIBLE

EAST WALL

LIMITING DISTANCE (LD) = 7.54 M (STREET FACING)
EXPOSED BUILDING FACE (EBF) = 108 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 100%
UNPROTECTED OPENING (ACTUAL) = 9% (9.78 SQ.M)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING
= NON-COMBUSTIBLE

WEST WALL

LIMITING DISTANCE (LD) = 6.32 M
EXPOSED BUILDING FACE (EBF) = 435 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 52 %
UNPROTECTED OPENING (ACTUAL) = 19.8% (86.4 SQ.M)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING
= NON-COMBUSTIBLE

3.2.4. FIRE ALARMS & DETECTION SYSTEMS:

3.2.4.1) FIRE ALARMS REQUIRED
3.2.4.3.1)d) PERMITTED TO BE SINGLE STAGE OR 2 STAGE SYSTEM
3.2.4.7. CENTRAL MONITORING REQUIRED
3.2.4.8 ANNUNCIATOR AND ZONE INDICATION REQUIRED
F/A PANEL INSIDE RESIDENTIAL LOBBY AT PRINCIPLE ENTRY.
3.2.4.17 MANUAL PULL STATIONS PROVIDED AT EVERY EXIT AND PRINCIPLE ENTRY

3.2.5 PROVISIONS FOR FIRE FIGHTING

3.2.5.4 FIRE DEPARTMENT ACCESS ROUTE REQUIRED PROVIDED VIA SOUTH ISLAND HIGHWAY
3.2.5.5.1) LOCATED WITHIN 15M MEASURED HORIZONTALLY
3.2.5.5.2) a) APPLIES FOR THE TRUCK
3.2.5.5.2) c) APPLIES TO THE PATH OF TRAVEL FOR FIREFIGHTER (45M)
3.2.5.13 AUTOMATIC SPRINKLER SYSTEM REQUIRED
3.2.5.16 FIRE DEPARTMENT CONNECTION REQUIRED

3.2.7. LIGHTING & EMERGENCY POWER SYSTEMS

3.2.7.1 MINIMUM LIGHTING REQUIRED AT ALL EXITS AND CORRIDORS PROVIDING ACCESS TO EXITS
3.2.7.3. EMERGENCY LIGHTING: EXITS, SERVICE ROOMS, CORRIDORS
3.2.7.4. EMERGENCY POWER FOR ALL LIGHTING (BATTERY PACKS MIN. 30 MINS)
3.2.7.8 EMERGENCY POWER FOR FIRE ALARM SYSTEMS (BATTERY PACKS MIN. 30 MINS WITH 24HR STANDBY)

3.3 SAFETY WITHIN FLOOR AREAS

3.3.4.2 FIRE SEPARATIONS

1) SUITES SEPARATED FROM EACH OTHER AND REMAINDER OF BUILDING BY A FIRE SEPARATION HAVING A FIRE RESISTANCE RATING NOT LESS THAN 1 H

3.4.2.1 MINIMUM NUMBER OF EXITS

1) NUMBER EXITS PROVIDED 2

3.4.2.3 DISTANCE BETWEEN EXITS

1) THE LEAST DISTANCE BETWEEN THE TWO EXITS FROM A FLOOR AREA SHALL BE ONE HALF THE MAXIMUM DIAGONAL DIMENSION OF THE FLOOR AREA, BUT NEED NOT BE MORE THAN 9M FOR A FLOOR AREA HAVING A PUBLIC CORRIDOR.

3.4.2.4 TRAVEL DISTANCE

1), c) TRAVEL DISTANCE BETWEEN EXITS 45 M (148 FT.) 45M X 2 = 90M

3.4.3.2 EXIT WIDTH

126 PERSON CAPACITY
1/2 FOR UPPER FLOORS (SERVED BY TWO EXITS)
63 MULTIPLIED BY 6.1MM FOR DOOR & CORRIDOR = 384.3MM
63 MULTIPLIED BY 8MM FOR STAIRS = 504MM
TABLE 3.4.3.2.A. MINIMUM WIDTH OF STAIRS = 1100MM (3'-7")

3.4.3.3 EXIT WIDTH REDUCTION

4). HANDRAILS ARE PERMITTED TO PROJECT INTO THE REQUIRED WIDTH OF MEANS OF EGRESS BY NOT MORE THAN 100MM (4") ON EACH SIDE OF THE REQUIRED WIDTH.

3.4.4.1 FIRE-RESISTANCE RATING OF EXIT SEPARATION

EXIT STAIR ENCLOSURE 1 H FIRE SEPARATION

3.4.4.2 EXITS THROUGH LOBBIES

EXIT LOBBY 1 H FIRE SEPARATION

3.5 VERTICAL TRANSPORTATION

ELEVATOR SHAFT REQUIRED: 1 H FIRE SEPARATION
ELEVATOR SHAFT PROVIDED: 1.5 H FIRE SEPARATION

ELEVATOR MACHINE ROOM REQUIRED: 1 H FIRE SEPARATION
ELEVATOR MACHINE ROOM PROVIDED: 1 H FIRE SEPARATION

ELEVATOR SIZE 2642 MM X 1829 MM PROVIDED

3.8 ACCESSIBILITY

3.8.2.1 ACCESS PROVIDED TO ALL PUBLIC AREAS
3.8.2.3. ACCESSIBLE PARKING STALLS PROVIDED (2 IN TOTAL)
3.8.2.27. APARTMENT BUILDING ACCESSIBILITY

1) APARTMENT *BUILDINGS* NEED NOT COMPLY WITH SENTENCE 3.8.2.3.(1), BUT ACCESS SHALL BE PROVIDED
a) FROM THE STREET TO MAIN ENTRANCE CONFORMING TO ARTICLE 3.8.3.5.,
b) FROM A PRIVATE PARKING AREA TO AN ENTRANCE CONFORMING TO ARTICLE 3.8.3.5., AND
c) WHERE AN ELEVATOR IS PROVIDED, FROM THE MAIN ENTRANCE IN CLAUSE (a), OR THE ENTRANCE IN CLAUSE (b), TO AN ELEVATOR CONFORMING TO ARTICLE 3.5.2.1.(3).

*Note that access is required to and including the elevator. Therefore, the path of travelto the elevator must be accessible.

5.8.1.1 REQUIRED PROTECTION FROM NOISE

WALLS REQUIRED: STC 50
WALLS PROVIDED: STC 51 (CORRIDOR) STC 57 (PARTY WALL)

FLOORS REQUIRED: STC 50
FLOORS PROVIDED: STC 55

ELEVATOR WALL REQUIRED: STC 55
ELEVATOR WALL PROVIDED: STC 55

PROSSER APARTMENT B - CODE ANALYSIS

3.1.2 BUILDING CLASSIFICATION:

3.1.2.1 CLASSIFICATION BY OCCUPANCY

LEVELS P1 :	GROUP F3 LOW HAZARD INDUSTRIAL
LEVELS 1-5:	GROUP C RESIDENTIAL

3.1.3 MULTIPLE OCCUPANCY REQUIREMENTS:

3.1.3.1. SEPARATION OF MAJOR OCCUPANCIES:

EXIT FACILITIES ON P1	2H FRR
PARKING BIKE STORAGE (CHAINLINK)	NONE
REFUSE TO PARKING	1.5HR FRR
MECH/ELEC. TO PARKING	1.5HR FRR
PARKING LEVEL P1 TO L1 MAIN	2HR FRR
ENCLOSED EXIT FACILITIES ON L1	1HR FRR
L1 TO L5 RESIDENTIAL SUITES TO CORRIDOR	1HR FRR
L1 TO L5 RESIDENTIAL SUITES ADJACENT	1HR FRR

3.1.17 OCCUPANT LOAD

1), b) RESIDENTIAL: 2 PERSONS PER SLEEPING ROOM
100 PERSONS PER BUILDING

3.2.2 BUILDING SIZE & CONSTRUCTION:

3.2.2.6 MULTIPLE MAJOR OCCUPANCIES:
THE BUILDING HAS BEEN DESIGNED TO THE MOST RESTRICTED MAJOR OCCUPANCY
3.2.2.10 STREETS:
BUILDING FACES 1 STREET (SOUTH ISLAND HIGHWAY) AND PROVIDES ACCESS AS PER 3.2.5

3.2.2.50 GROUP C, UP TO 6 STOREYS, SPRINKLERED

1), c), iv) IT HAS A BUILDING AREA NOT MORE THAN 1,800 M. SQ.

2) BUILDING TO BE OF COMBUSTIBLE/NON-COMBUSTIBLE CONSTRUCTION

2), a) FLOOR ASSEMBLIES SHALL BE FIRE SEPARATIONS WITH A FIRE RESISTANCE RATING NOT LESS THAN 1 H

2), c) LOAD BEARING WALLS SHALL HAVE A FIRE RESISTANCE RATING NOT LESS THAN THAT REQUIRED FOR THE SUPPORTED ASSEMBLY (1 H FIRE RESISTANCE)

3.2.2.80 GROUP F DIV.3, UP TO 6 STOREYS, SPRINKLERED

1), c), iv) IT HAS A BUILDING AREA NOT MORE THAN 10,800 M. SQ.

2) BUILDING TO BE OF COMBUSTIBLE/NON-COMBUSTIBLE CONSTRUCTION

2), a) FLOOR ASSEMBLIES SHALL BE FIRE SEPARATIONS WITH A FIRE RESISTANCE RATING NOT LESS THAN 1 H

2), c) LOAD BEARING WALLS SHALL HAVE A FIRE RESISTANCE RATING NOT LESS THAN THAT REQUIRED FOR THE SUPPORTED ASSEMBLY (1 H FIRE RESISTANCE)

ARTICLE 3.2.3.1. D SPATIAL SEPARATION AND EXPOSURE PROTECTION

NORTH WALL

LIMITING DISTANCE (LD) = 9.97 M
EXPOSED BUILDING FACE (EBF) = 382.4 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 100 %
UNPROTECTED OPENING (ACTUAL) = 21% (81.5 SQ.M)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING
= COMBUSTIBLE/NON-COMBUSTIBLE

SOUTH WALL

LIMITING DISTANCE (LD) = 6.36 M
EXPOSED BUILDING FACE (EBF) = 467 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 52%
UNPROTECTED OPENING (ACTUAL) = 18% (84.5 SQ.M.)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING
= COMBUSTIBLE/NON-COMBUSTIBLE

EAST WALL

LIMITING DISTANCE (LD) = 13.6 M (STREET FACING)
EXPOSED BUILDING FACE (EBF) = 223 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 100%
UNPROTECTED OPENING (ACTUAL) = 4% (9 SQ.M)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING = NON-COMBUSTIBLE

WEST WALL

LIMITING DISTANCE (LD) = 13.88 M
EXPOSED BUILDING FACE (EBF) = 224.9 SQ. M
UNPROTECTED OPENING (ALLOWABLE) = 100 %
UNPROTECTED OPENING (ACTUAL) = 10% (22.5 SQ.M)
FRR = 3/4 (hr)
ARTICLE 3.2.3.7 CONSTRUCTION AND CLADDING = NON-COMBUSTIBLE

3.2.4. FIRE ALARMS & DETECTION SYSTEMS:

3.2.4.1 1.) FIRE ALARMS REQUIRED
3.2.4.3.1)d) PERMITTED TO BE SINGLE STAGE OR 2 STAGE SYSTEM
3.2.4.7. CENTRAL MONITORING REQUIRED
3.2.4.8 ANNUNCIATOR AND ZONE INDICATION REQUIRED
F/A PANEL INSIDE RESIDENTIAL LOBBY AT PRINCIPLE ENTRY.
3.2.4.17 MANUAL PULL STATIONS PROVIDED AT EVERY EXIT AND PRINCIPLE ENTRY

3.2.5 PROVISIONS FOR FIRE FIGHTING

3.2.5.4 FIRE DEPARTMENT ACCESS ROUTE REQUIRED PROVIDED VIA SOUTH ISLAND HIGHWAY
3.2.5.5.1) LOCATED WITHIN 15M MEASURED HORIZONTALLY
3.2.5.5.2) a) APPLIES FOR THE TRUCK
3.2.5.5.2) c) APPLIES TO THE PATH OF TRAVEL FOR FIREFIGHTER (45M)
3.2.5.13 AUTOMATIC SPRINKLER SYSTEM REQUIRED
3.2.5.16 FIRE DEPARTMENT CONNECTION REQUIRED

3.2.7. LIGHTING & EMERGENCY POWER SYSTEMS

3.2.7.1 MINIMUM LIGHTING REQUIRED AT ALL EXITS AND CORRIDORS PROVIDING ACCESS TO EXITS
3.2.7.3. EMERGENCY LIGHTING: EXITS, SERVICE ROOMS, CORRIDORS
3.2.7.4. EMERGENCY POWER FOR ALL LIGHTING (BATTERY PACKS MIN. 30 MINS)
3.2.7.8 EMERGENCY POWER FOR FIRE ALARM SYSTEMS (BATTERY PACKS MIN. 30 MINS WITH 24HR STANDBY)

3.3 SAFETY WITHIN FLOOR AREAS

3.3.4.2 FIRE SEPARATIONS

1) SUITES SEPARATED FROM EACH OTHER AND REMAINDER OF BUILDING BY A FIRE SEPARATION HAVING A FIRE RESISTANCE RATING NOT LESS THAN 1 H

3.4.2.1 MINIMUM NUMBER OF EXITS

1) NUMBER EXITS PROVIDED 2

3.4.2.3 DISTANCE BETWEEN EXITS

1) THE LEAST DISTANCE BETWEEN THE TWO EXITS FROM A FLOOR AREA SHALL BE ONE HALF THE MAXIMUM DIAGONAL DIMENSION OF THE FLOOR AREA, BUT NEED NOT BE MORE THAN 9M FOR A FLOOR AREA HAVING A PUBLIC CORRIDOR.

3.4.2.4 TRAVEL DISTANCE

1), c) TRAVEL DISTANCE BETWEEN EXITS 45 M (148 FT.) 45M X 2 = 90M

3.4.3.2 EXIT WIDTH

100 PERSON CAPACITY
1/2 FOR UPPER FLOORS (SERVED BY TWO EXITS)
50 MULTIPLIED BY 6.1MM FOR DOOR & CORRIDOR = 305MM
50 MULTIPLIED BY 8MM FOR STAIRS = 400MM
TABLE 3.4.3.2.A. MINIMUM WIDTH OF STAIRS = 1100MM (3'-7")

3.4.3.3 EXIT WIDTH REDUCTION

4). HANDRAILS ARE PERMITTED TO PROJECT INTO THE REQUIRED WIDTH OF MEANS OF EGRESS BY NOT MORE THAN 100MM (4") ON EACH SIDE OF THE REQUIRED WIDTH.

3.4.4.1 FIRE-RESISTANCE RATING OF EXIT SEPARATION

EXIT STAIR ENCLOSURE 1 H FIRE SEPARATION

3.4.4.2 EXITS THROUGH LOBBIES

EXIT LOBBY 1 H FIRE SEPARATION

3.5 VERTICAL TRANSPORTATION

ELEVATOR SHAFT REQUIRED: 1 H FIRE SEPARATION
ELEVATOR SHAFT PROVIDED: 1.5 H FIRE SEPARATION

ELEVATOR MACHINE ROOM REQUIRED: 1 H FIRE SEPARATION
ELEVATOR MACHINE ROOM PROVIDED: 1 H FIRE SEPARATION

ELEVATOR SIZE 2642 MM X 1829 MM PROVIDED

3.8 ACCESSIBILITY

3.8.2.1 ACCESS PROVIDED TO ALL PUBLIC AREAS
3.8.2.3. ACCESSIBLE PARKING STALLS PROVIDED (2 IN TOTAL)
3.8.2.27. APARTMENT BUILDING ACCESSIBILITY

1) APARTMENT *BUILDINGS* NEED NOT COMPLY WITH SENTENCE 3.8.2.3.(1), BUT ACCESS SHALL BE PROVIDED
a) FROM THE STREET TO MAIN ENTRANCE CONFORMING TO ARTICLE 3.8.3.5.,
b) FROM A PRIVATE PARKING AREA TO AN ENTRANCE CONFORMING TO ARTICLE 3.8.3.5., AND
c) WHERE AN ELEVATOR IS PROVIDED, FROM THE MAIN ENTRANCE IN CLAUSE (a), OR THE ENTRANCE IN CLAUSE (b), TO AN ELEVATOR CONFORMING TO ARTICLE 3.5.2.1.(3).

*Note that access is required to and including the elevator. Therefore, the path of travel to the elevator must be accessible.

5.8.1.1 REQUIRED PROTECTION FROM NOISE

WALLS REQUIRED: STC 50
WALLS PROVIDED: STC 51 (CORRIDOR) STC 57 (PARTY WALL)

FLOORS REQUIRED: STC 50
FLOORS PROVIDED: STC 55

ELEVATOR WALL REQUIRED: STC 55
ELEVATOR WALL PROVIDED: STC 55

WALL ASSEMBLIES

W1 — **EXTERIOR WALL** - F.R.R. 1HR
BCBC A-9.10.1.A EW1a

FIBRE CEMENT PANEL (REFER TO ELEVATIONS)
1/2"x 1 1/2" P.T. PLYWOOD STRAPPING @ 16" O.C.
TYVEK COMMERCIAL WRAP SEALED AT ALL TERMINATIONS
TO PROVIDE CONTINUOUS AIR BARRIER
1/2" OSB SHEATHING (REFER TO STRUCTURAL)
2x6 WOOD STUDS (REFER TO STRUCTURAL)
R-20 BATT INSULATION
6 MIL. POLY VAPOUR BARRIER
5/8" TYPE "X" GWB

W2 — **EXTERIOR WALL** - DECK DIVIDING WALL

FIBRE CEMENT PANEL (REFER TO ELEVATIONS)
1/2"x 1 1/2" P.T. PLYWOOD STRAPPING @ 16" O.C.
TYVEK COMMERCIAL WRAP SEALED AT ALL TERMINATIONS
TO PROVIDE CONTINUOUS AIR BARRIER
1/2" SHEATHING (REFER TO STRUCTURAL)
2x6 WOOD STUDS (REFER TO STRUCTURAL)
TYVEK COMMERCIAL WRAP SEALED AT ALL TERMINATIONS
TO PROVIDE CONTINUOUS AIR BARRIER
1/2"x 1 1/2" P.T. PLYWOOD STRAPPING @ 16" O.C.
FIBRE CEMENT PANEL (REFER TO ELEVATIONS)

W3 — **ELEVATOR SHAFTWALL**
TO MAIN SLAB
- F.R.R. 2HR BCBC D-2.1.1

CONCRETE WALL (REFER TO STRUCTURAL DRAWINGS)

W3a — **ELEVATOR PIT SHAFTWALL**
TO PARKADE SLAB
- F.R.R. 2HR BCBC D-2.1.1

CONCRETE WALL (REFER TO STRUCTURAL DRAWINGS)
WATERPROOFING MEMBRANE, DRAINAGE MAT w/ GEOTEXTILE

W4 — **CORRIDOR WALL** - F.R.R. 1HR/STC 56
BCBC A-9.10.3.1.A , W8a

2 LAYERS 5/8" TYPE "X" GBW
2x4 STUDS @ 8" O/C STAGGERED W/ 2x6 TOP &
BTM PLATES (REFER TO STRUCTURAL)
89MM (3.5") BATT INSULATION ONE SIDE OR
65MM (2.5") EACH SIDE
5/8" TYPE "X" GWB

W4a — **CORRIDOR WALL** - F.R.R. 1HR/STC 54
BCBC A-9.10.3.1.A, W4a

2 LAYERS 5/8" TYPE "X" GBW
1/2" RESILIENT CHANNEL
2x4 WOOD STUDS @ 16" o.c.
(REFER TO STRUCTURAL)
89MM (3.5") BATT INSULATION
5/8" TYPE "X" GWB

W5 — **LOAD BEARING** - F.R.R. 1HR

5/8" GWB TYPE "X"
2x6 OR 2x4 WOOD STUDS
(REFER TO STRUCTURAL FOR SHEAR REQ.)
5/8" GWB TYPE "X"

W5a — **PLUMBING WALL**

1/2" GWB
2x6 WOOD STUDS
1/2" GWB

W5b — **PLUMBING WALL**
WET WALL

1/2" GWB
2x6 WOOD STUDS

W6 — **INTERIOR PARTITION WALL**

1/2" GWB
2x4 WOOD STUDS (REFER TO STRUCTURAL)
1/2" GWB

W7 — **PARTY WALL** - F.R.R. 1HR/ STC 57
BCBC A-9.10.3.1.A W13a, NOTE APPENDIX D

5/8" TYPE "X" GWB
2x4 STUDS @ 16" O/C MAX W/ 2x4 TOP & BOTTOM PLATES
(REFER TO STRUCTURAL)
R-12 BATT INSULATION
1" AIR SPACE
1/2" PLYWOOD AS REQ. - REFER TO STRUCTURAL
FOR SHEAR WALL REQUIREMENTS
R12 BATT INSULATION
2x4 STUDS @ 16" O/C W/ 2x4 TOP & BOTTOM PLATES
(REFER TO STRUCTURAL)
5/8" TYPE "X" GWB

W8 — **ELEVATOR SHAFTWALL** - F.R.R. 1.5HR/STC 55
BCBC A-9.10.3.1.A W6a,b

2 LAYERS 5/8" TYPE "X" GWB
1/2" RESILIENT CHANNEL
WOOD STUDS (REFER TO STRUCTURAL)
R-20 BATT INSULATION
6 MIL. POLY VAPOUR BARRIER
2 LAYERS 5/8" TYPE "X" GWB

W9 — **CONCRETE WALL**
- F.R.R. 2HR BCBC D-2.1.1

CONCRETE WALL (REFER TO STRUCTURAL DRAWINGS)

W10 8" **W11** 10" **W12** 12"

CONCRETE WALL
- F.R.R. 2HR BCBC D-2.1.1

CONCRETE FOUNDATION WALL (REFER TO STRUCTURAL)
WATERPROOFING MEMBRANE,
DRAINAGE MAT W/GEOTEXTILE TO GRADE
BREATHABLE WP FINISH ABOVE GRADE

FLOOR ASSEMBLIES

F1 — **2ND/6TH FLOOR ASSEMBLY** - F.R.R. 1HR/STC 66
BCBC A-9.10.3.1.B F15d

FINISHED FLOORING
1 1/2" CONCRETE TOPPING (GYPCRETE OR SIMILAR)
PLYWOOD SHEATHING (REFER TO STRUCTURAL)
6" NOMINAL ACOUSTIC BATT INSULATION
WOOD FLOOR JOISTS (REFER TO STRUCTURAL)
1/2" RESILIENT CHANNEL
2 LAYERS 5/8" TYPE "X" GWB

F1a — **3RD/4TH CORRIDOR FLOOR ASSEMBLY** - F.R.R. 1HR/STC 48
BCBC A-9.10.3.1.B F17a

FINISHED FLOORING
1 1/2" CONCRETE TOPPING (GYPCRETE OR SIMILAR)
PLYWOOD SHEATHING (REFER TO STRUCTURAL)
2x6 WOOD FLOOR JOISTS (REFER TO STRUCTURAL)
w/ 6" NOMINAL ACOUSTIC BATT INSULATION
2 LAYERS 5/8" TYPE "X" GWB
METAL FURRING (MECHANICAL CHASE)
1 LAYER 1/2" GWB

F1b — **STAIRWELL FRAMING**

FINISHED FLOORING
PLYWOOD SHEATHING (REFER TO STRUCTURAL)
WOOD FLOOR JOISTS (REFER TO STRUCTURAL)
1 LAYERS 5/8" TYPE "X" GWB

F2 R20 — **BUILDING 'A' MAIN FLOOR ASSEMBLY** - F.R.R. 2HR/STC 52

FINISHED FLOORING
CONCRETE STRUCTURAL FLOOR (REFER TO STRUCTURAL)
R-20 CONTINUOUS MONOGLASS INSULATION
(24" BEYOND CONDITIONED SPACE ABOVE)

F2 R24 — **BUILDING 'B' MAIN FLOOR ASSEMBLY** - F.R.R. 2HR/STC 52

FINISHED FLOORING
CONCRETE STRUCTURAL FLOOR (REFER TO STRUCTURAL)
R-24 CONTINUOUS MONOGLASS INSULATION
(24" BEYOND CONDITIONED SPACE ABOVE)

F2a — **MAIN FLOOR - PODIUM OVER PARKADE ASSEMBLIES**
BCBC A-9.10.3.1.B P1b

WEAR SURFACES AS PER CIVIL AND LANDSCAPE PLANS
(CONCRETE, PLANTINGS, TURF, DECORATIVE GRAVEL)
ON DRAINAGE MAT w/ FILTER FABRIC w/ ROOT BARRIER (AS REQ.)
ON 2 PLY SBS WATERPROOFING MEMBRANE ON REINFORCED CONCRETE SLAB
(REFER TO STRUCTURAL) w/ INTEGRATED DRAIN SLOPES AS PER MECHANICAL
AND STRUCTURAL w/ MONOGLASS INSULATION AS REQUIRED

F2b — **PARKING OVER PODIUM - ASPHALT SURFACE ASSEMBLY**

ASPHALT PAVING (MIN. 60MM) ON PREPARED BASE
ON 1/2" PROTECTION BOARD
ON 6MIL POLY SLIP
ON SOPREMA 'TRAFIKROCK' SBS WATERPROOFING MEMBRANE (REFER TO
MANUFACTURER SPECIFICATIONS FOR SYSTEM COMPONENTS)
ON SUSPENDED CONCRETE SLAB (REFER TO STRUCTURAL)
w/ INTEGRATED DRAIN SLOPES AS PER MECHANICAL AND STRUCTURAL
w/ MONOGLASS INSULATION AS REQUIRED

F3a — **EXTERIOR SLAB - AT GRADE**

CONC. SLAB C/W CONTROL JOINTS
6" MIN. GRANULAR FILL
(REFER TO STRUCTURAL)

F3b — **ASPHALT PAVING - AT GRADE**

ASPHALT PAVING (MIN. 60MM) ON PREPARED BASE
ON COMPACTED GRANULAR FILL
w/ INTEGRATED DRAIN SLOPES AS PER CIVIL AND MECHANICAL

F3c — **LANDSCAPE - AT GRADE**

SURFACES AS PER LANDSCAPE PLAN
ON PREPARED GRADE AS PER LANDSCAPE AND CIVIL
w/ INTEGRATED IRRIGATION AND DRAINAGE AS REQ.

F4 — **BALCONY FLOOR ASSEMBLY**

MIN. 80 MIL PVC (DURADECK)
5/8" TONGUE AND GROOVE PLYWOOD SHEATHING
WOOD FLOOR JOISTS W/2% SLOPE
(REFER TO STRUCTURAL)
PERFORATED METAL SOFFIT

F11 — **MAIN FLOOR BALCONY**

CANTILEVER CONCRETE
SLAB BALCONY w/ LIQUID
APPLIED MEMBRANE
(SEE STRUCTURAL)

PARKADE FLOOR ASSEMBLIES

F3 — **PARKADE FLOOR ASSEMBLY**

CONCRETE STRUCTURAL FLOOR (REFER TO STRUCTURAL)
10MIL POLY V.B.
COMP. GRANULAR FILL

F6 — **ELEVATOR PIT SLAB**
AS PER DETAIL 1 / A5.1

CONCRETE SLAB (REFER TO STRUCTURAL)
(REFER TO CIVIL)

F7 — **RAMP SLAB**

CONCRETE STRUCTURAL FLOOR (REFER TO STRUCTURAL)
10MIL POLY V.B.
COMP. GRANULAR FILL

ROOF ASSEMBLIES

R1 R30 — **BUILDING 'A' R1 ROOF ASSEMBLY** - MAIN & LOW SLOPE ROOF ASSEMBLIES F.R.R. 1 HR BCBC A-9.10.3.1 -B M2

2-PLY SBS ROOF MEMBRANE
MIN 5/8" PLYWOOD SHEATHING
PRE-ENGINEERED ROOF TRUSS (REFER TO STRUCTURAL)
R-30 FIBERGLASS BATT INSULATION
6 MIL. POLY
2 LAYERS 5/8" TYPE "X" GWB
RSI= 5.28 CLASS A
PROVIDE ENGINEERED SHOP DRAWINGS

R1 R40 — **BUILDING 'B' R1 ROOF ASSEMBLY** - MAIN & LOW SLOPE ROOF ASSEMBLIES F.R.R. 1 HR BCBC A-9.10.3.1 -B M2

2-PLY SBS ROOF MEMBRANE
MIN 5/8" PLYWOOD SHEATHING
PRE-ENGINEERED ROOF TRUSS (REFER TO STRUCTURAL)
R-40 FIBERGLASS BATT INSULATION
6 MIL. POLY
2 LAYERS 5/8" TYPE "X" GWB
RSI= 7 CLASS A
PROVIDE ENGINEERED SHOP DRAWINGS

R2 — **R2 ROOF ASSEMBLY** - MAIN ROOF OVERHANGS / ENTRY CANOPIES

2-PLY SBS ROOF MEMBRANE
MIN 5/8" PLYWOOD SHEATHING
PRE-ENGINEERED ROOF TRUSS (REFER TO STRUCTURAL)
ALUMINUM 'TIMBERLINE' SOFFIT BY 'CEDAR SOLUTIONS'
PROVIDE ENGINEERED SHOP DRAWINGS

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT — TANIS ERIN SCHULTE — BRITISH COLUMBIA

NOV. 23, 2020

THUJA architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

CODE REVIEW
WALL FLOOR ASSEMBLIES

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A1.2

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

PARKADE

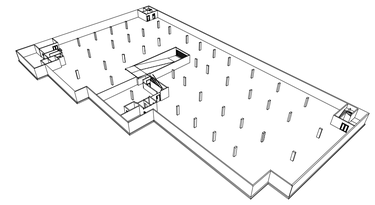
TOP OF SLAB DATUM 48.65M

99 VEHICLE PARKING STALLS
31 SMALL CAR
1 ACCESSIBLE
6 EV STATIONS

118 BICYLE PARKING SPACES
108 WITHIN BIKE ROOMS
10 SHORT TERM SPACES
2 EV STATIONS

LINE OF BUILDING 'A' ABOVE

LINE OF BUILDING 'B' ABOVE



NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

PARKADE OVERALL FLOOR PLAN

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.0

NORTH

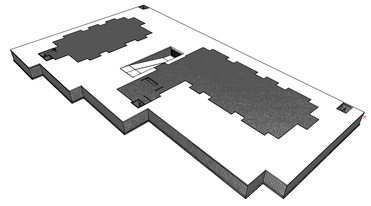
1 A2.0 PARKADE PLAN
Scale: 3/32" = 1'-0"

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
CRAIG ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020



THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

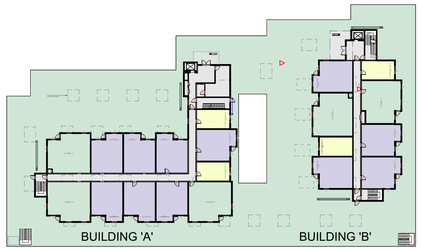
MAIN SLAB PLAN

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

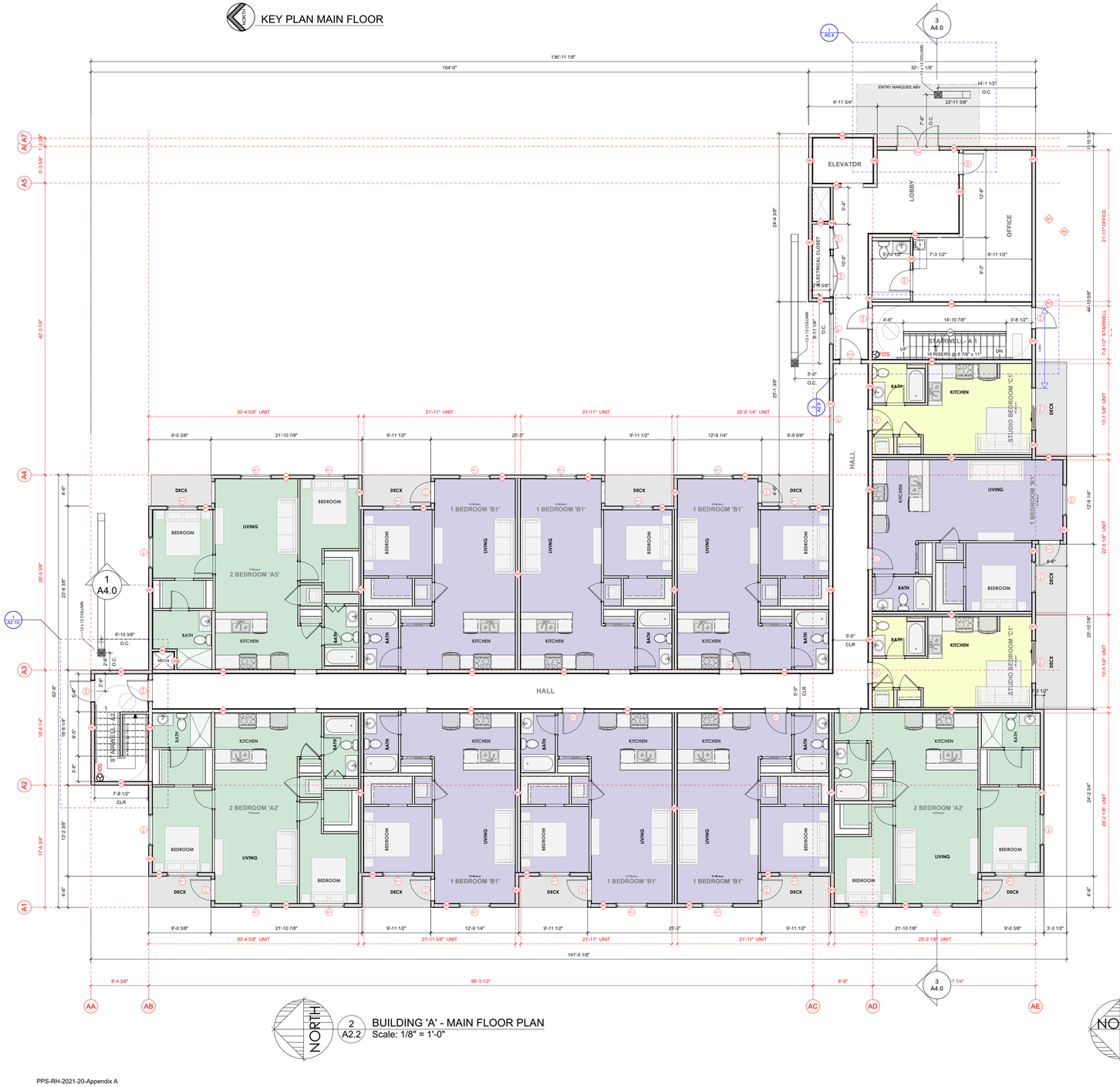
SHEET

A2.1

1 A2.1 MAIN SLAB PLAN
Scale: 3/32" = 1'-0"



KEY PLAN MAIN FLOOR



NORTH 2 A2.2 BUILDING 'A' - MAIN FLOOR PLAN
Scale: 1/8" = 1'-0"

NORTH 1 A2.2 BUILDING 'B' - MAIN FLOOR PLAN
Scale: 1/8" = 1'-0"

PPS-RH-2021-20-Appendix A

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
CRAIG ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

MAIN OVERALL FLOOR PLANS
BLDG 'A' - BLDG 'B'

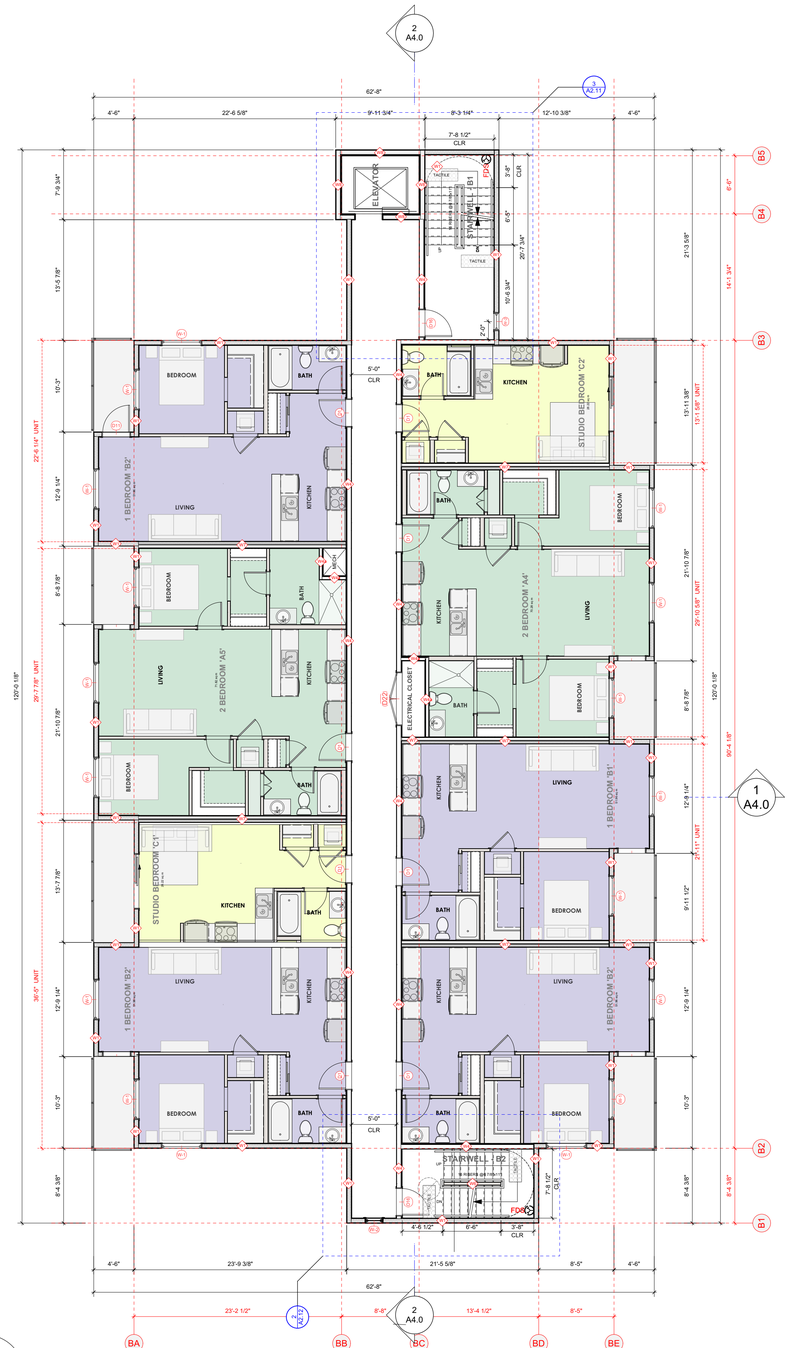
SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.2

KEY PLAN

NORTH 2 A2.3 BUILDING 'A' 2ND FLOOR PLAN
Scale: 1/8" = 1'-0"



NORTH 1 A2.3 BUILDING 'B' 2ND FLOOR PLAN
Scale: 1/8" = 1'-0"

PPS-RH-2021-20-Appendix A

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
TANIS ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE
ISSUED FOR REVIEW	JAN 22 2020
ISSUED FOR REVIEW	FEB 05 2020
ISSUED FOR REVIEW	JUNE 20 2020
ISSUED FOR REVIEW	JUNE 27 2020
ISSUED FOR REVIEW	JULY 21 2020
ISSUED FOR REVIEW	AUG 14 2020
ISSUED FOR COORD	SEPT 23 2020
ISSUED FOR COORD	OCT 27 2020
ISSUED FOR B.P.	NOV 23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

BLDG 'A' 2ND FLOOR PLAN
BLDG 'B' 2ND FLOOR PLAN

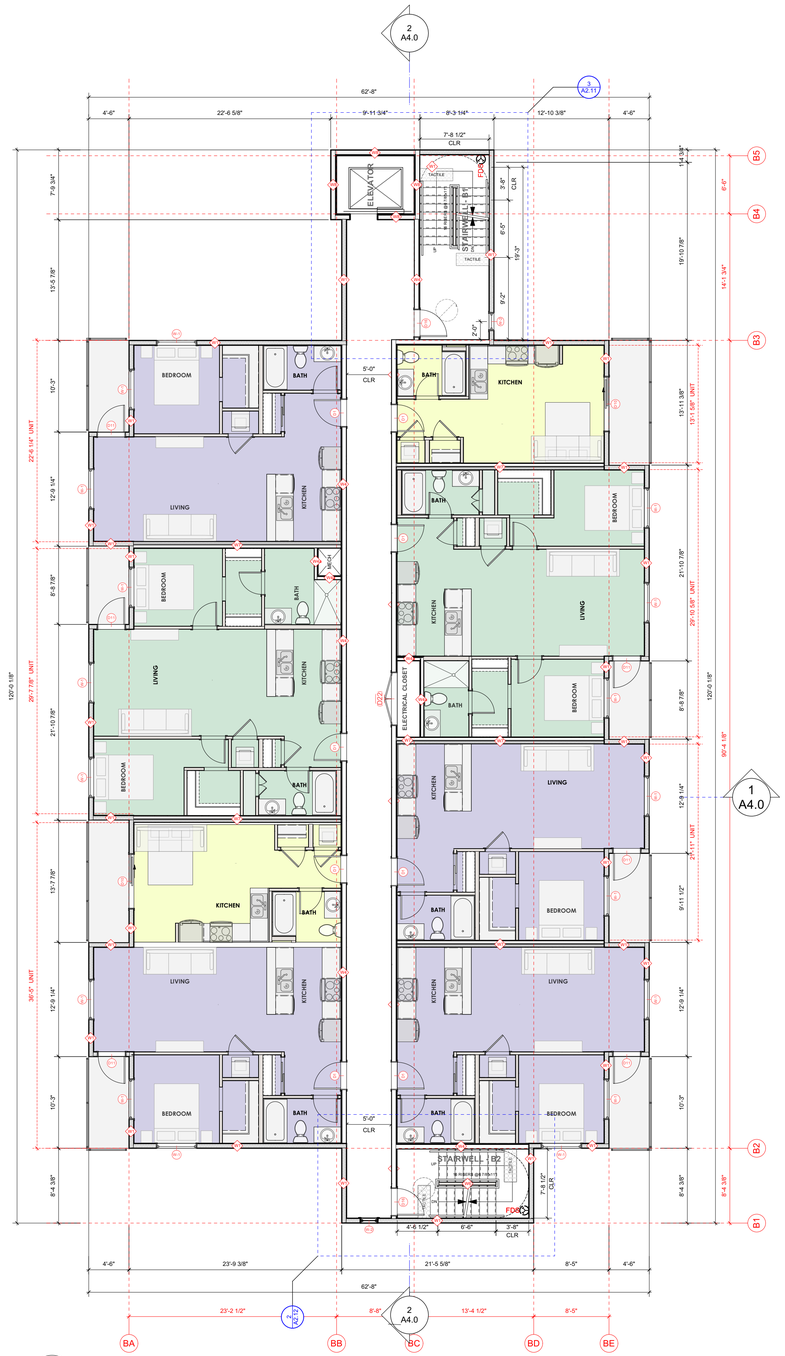
SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.3

KEY PLAN - 3RD FLOOR

2 A2.4 BUILDING 'A' 3RD FLOOR PLAN
Scale: 1/8" = 1'-0"



1 A2.4 BUILDING 'B' 3RD FLOOR PLAN
Scale: 1/8" = 1'-0"

PPS-RH-2021-20-Appendix A

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
CRAIG ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE
ISSUED FOR REVIEW	JAN 22 2020
ISSUED FOR REVIEW	FEB 05 2020
ISSUED FOR REVIEW	JUNE 20 2020
ISSUED FOR REVIEW	JUNE 27 2020
ISSUED FOR REVIEW	JULY 21 2020
ISSUED FOR REVIEW	AUG 14 2020
ISSUED FOR COORD	SEPT 23 2020
ISSUED FOR COORD	OCT 27 2020
ISSUED FOR B.P.	NOV 23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

BLDG 'A' 3RD FLOOR PLAN
BLDG 'B' 3RD FLOOR PLAN

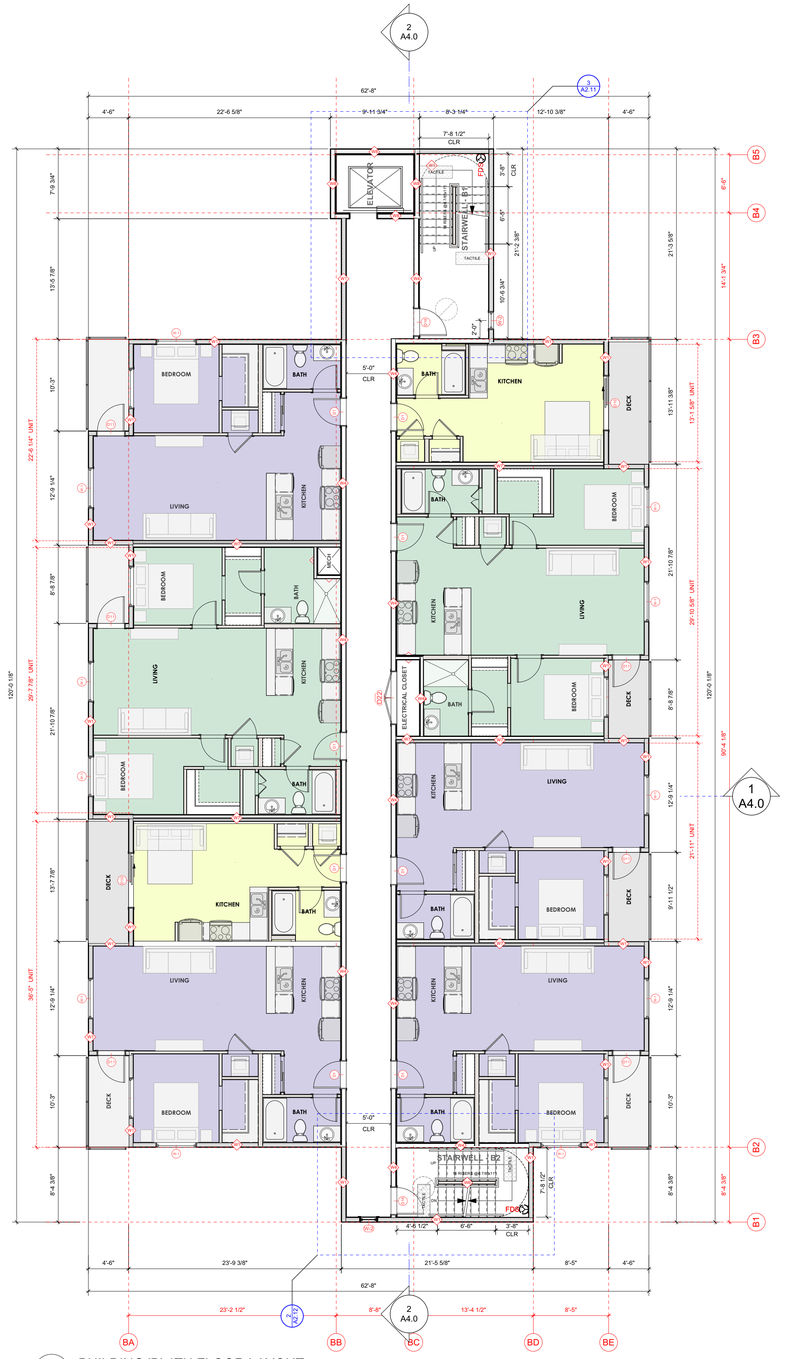
SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.4

KEY PLAN 4TH FLOOR

2 BUILDING 'A' 4TH FLOOR LAYOUT
A2.5 Scale: 1/8" = 1'-0"



1 BUILDING 'B' 4TH FLOOR LAYOUT
A2.5 Scale: 1/8" = 1'-0"

PPS-RH-2021-20-Appendix A

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
CRAIG ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.		DATE
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

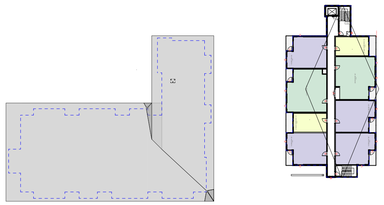
DRAWING

BLDG 'A' 4TH FLOOR PLAN
BLDG 'B' 4TH FLOOR PLAN

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

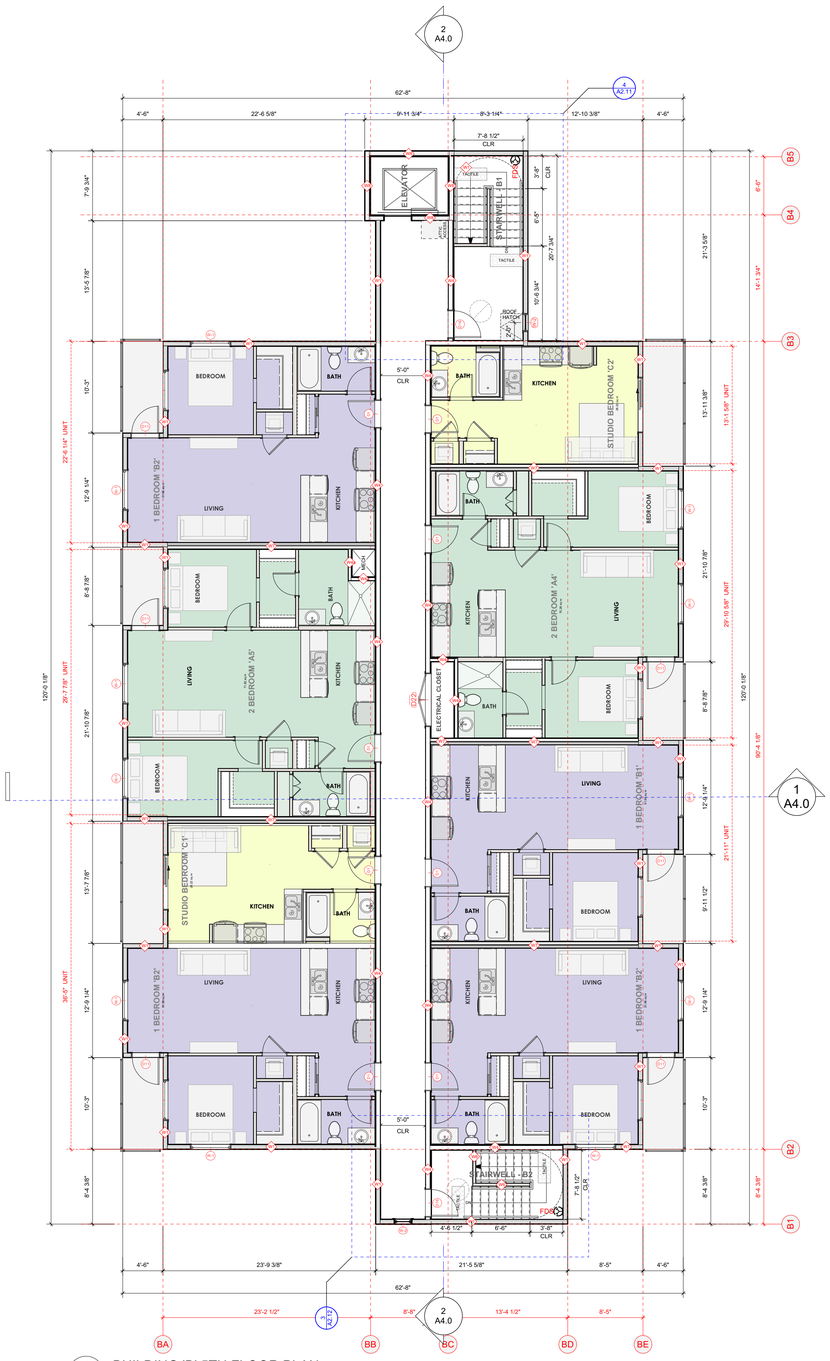
A2.5



KEY PLAN 5TH FLOOR BLDG 'B'

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.



1 A2.6 BUILDING 'B' 5TH FLOOR PLAN
Scale: 1/8" = 1'-0"

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

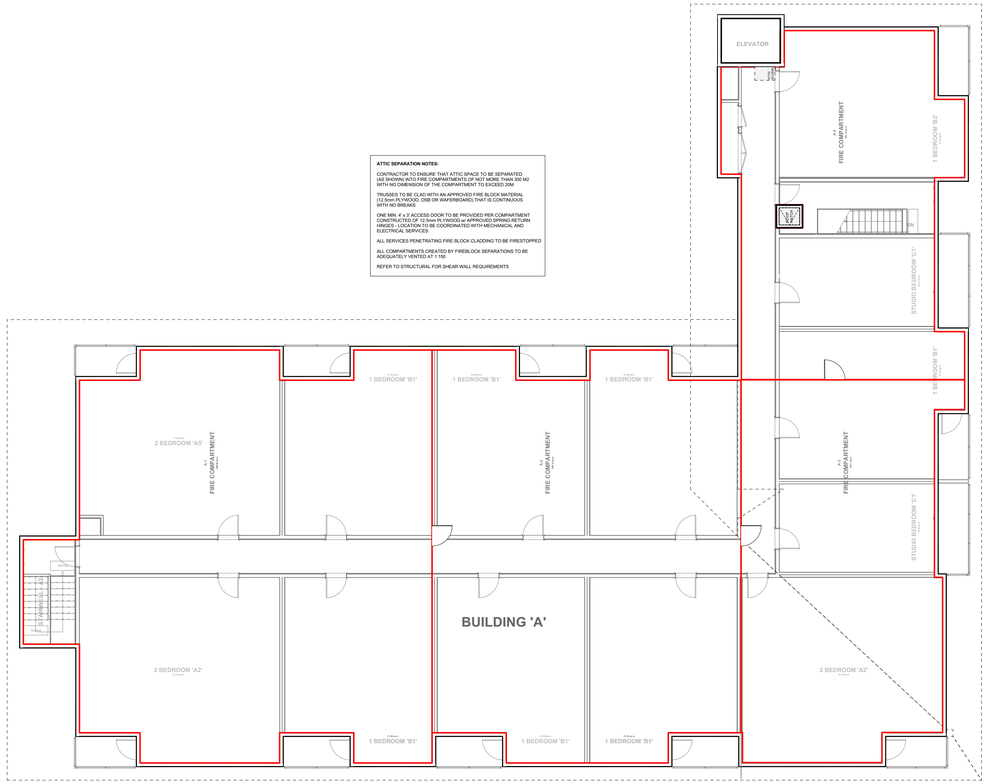
DRAWING

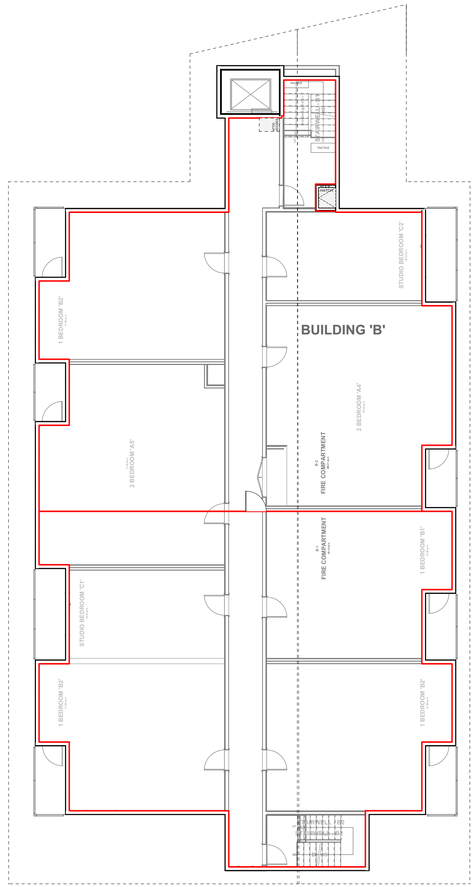
BLDG 'B' 5TH FLOOR PLAN

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.6





NORTH 1 A2.7 ATTIC PLAN
Scale: 3/32" = 1'-0"

ATTIC SEPARATION NOTES:

CONTRACTOR TO ENSURE THAT ATTIC SPACE TO BE SEPARATED (AS SHOWN) INTO FIRE COMPARTMENTS OF NOT MORE THAN 300 M2 WITH NO DIMENSION OF THE COMPARTMENT TO EXCEED 25M

TRUSSES TO BE CLAD WITH AN APPROVED FIRE BLOCK MATERIAL (12.5mm PLYWOOD, OSB OR WAFERBOARD) THAT IS CONTINUOUS WITH NO BREAKS

ONE MIN. 4' x 3' ACCESS DOOR TO BE PROVIDED PER COMPARTMENT CONSTRUCTED OF 12.5mm PLYWOOD w/ APPROVED SPRING RETURN HINGES. LOCATION TO BE COORDINATED WITH MECHANICAL AND ELECTRICAL SERVICES

ALL SERVICES PENETRATING FIRE BLOCK CLADDING TO BE FIRESTOPPED

ALL COMPARTMENTS CREATED BY FIREBLOCK SEPARATIONS TO BE ADEQUATELY VENTED AT 1:150

REFER TO STRUCTURAL FOR SHEAR WALL REQUIREMENTS

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
CHRISTINA ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

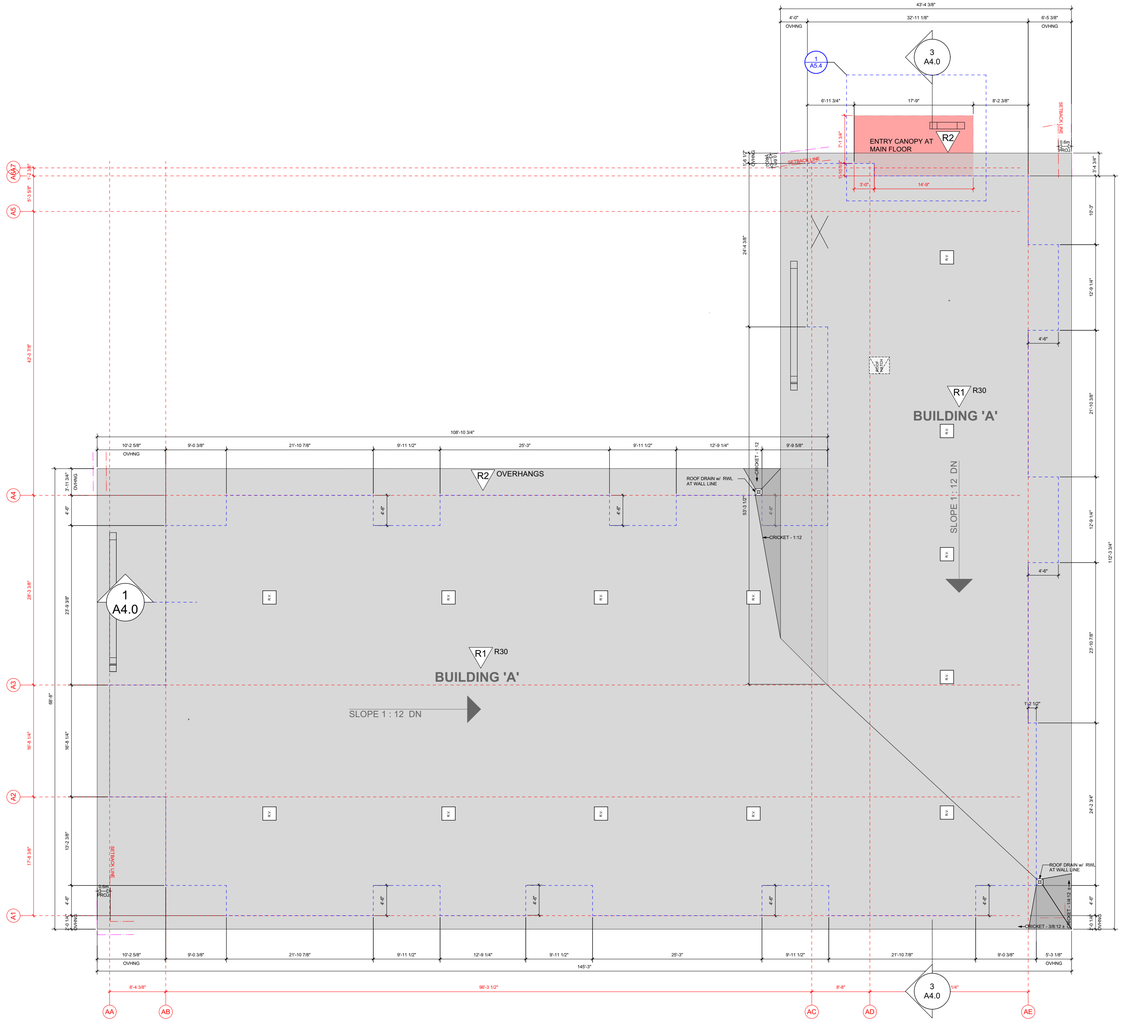
DRAWING

BLDG 'A' AND 'B' ATTIC PLAN

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

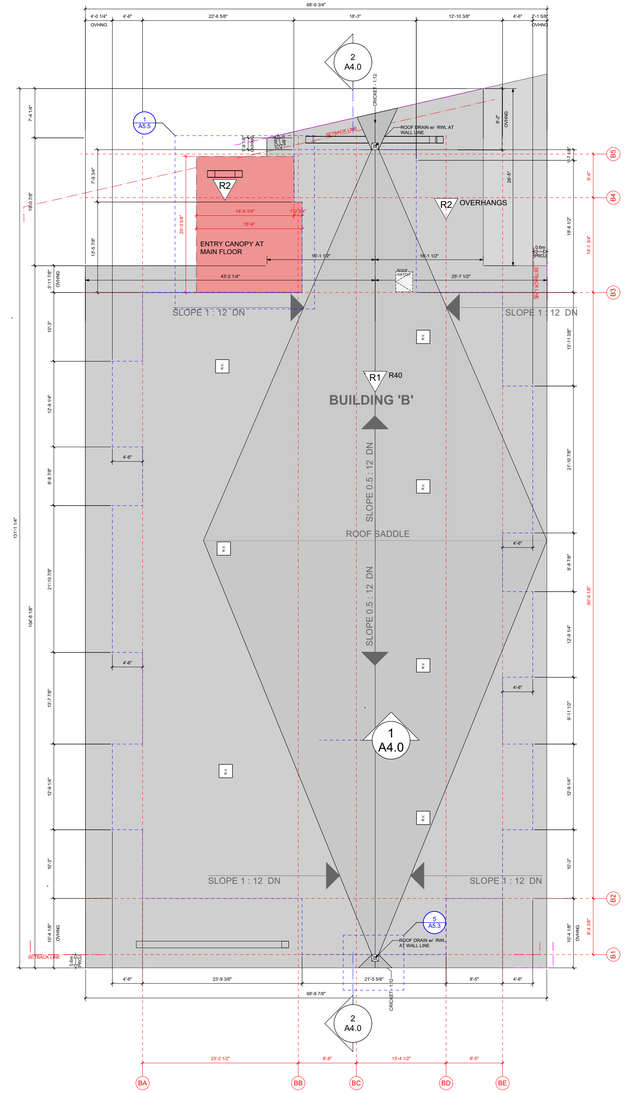
A2.8



VENTING SHOWN AS DIAGRAM ONLY

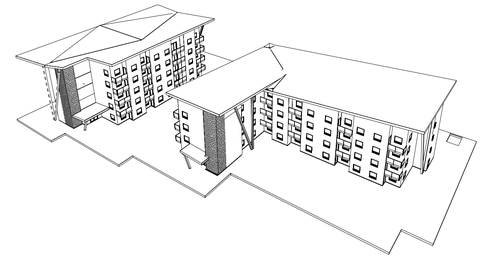
ROOFING CONTRACTOR TO REVIEW VENTING WITH ARCH. PRIOR TO INSTALL

ROOFING CONTRACTOR TO ENSURE ALL VENTING MEETS BCBC



NORTH

1 A2.8 ROOF PLANS
Scale: 3/32" = 1'-0"



CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
TANIS ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE
ISSUED FOR REVIEW	JAN 22 2020
ISSUED FOR REVIEW	FEB 05 2020
ISSUED FOR REVIEW	JUNE 20 2020
ISSUED FOR REVIEW	JUNE 27 2020
ISSUED FOR REVIEW	JULY 21 2020
ISSUED FOR REVIEW	AUG 14 2020
ISSUED FOR COORD	SEPT 23 2020
ISSUED FOR COORD	OCT 27 2020
ISSUED FOR B.P.	NOV 23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

BLDG 'A' AND 'B' ROOF PLANS

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.8

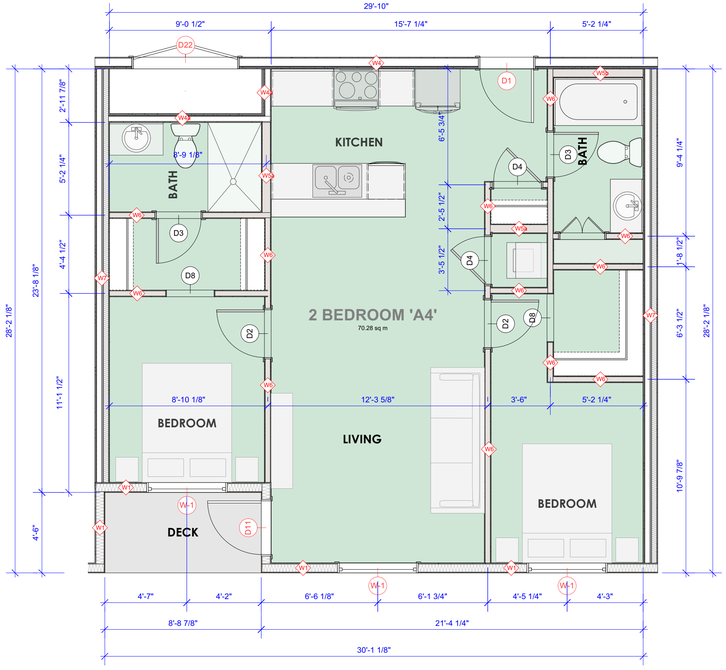
KEY PLAN

NOTE

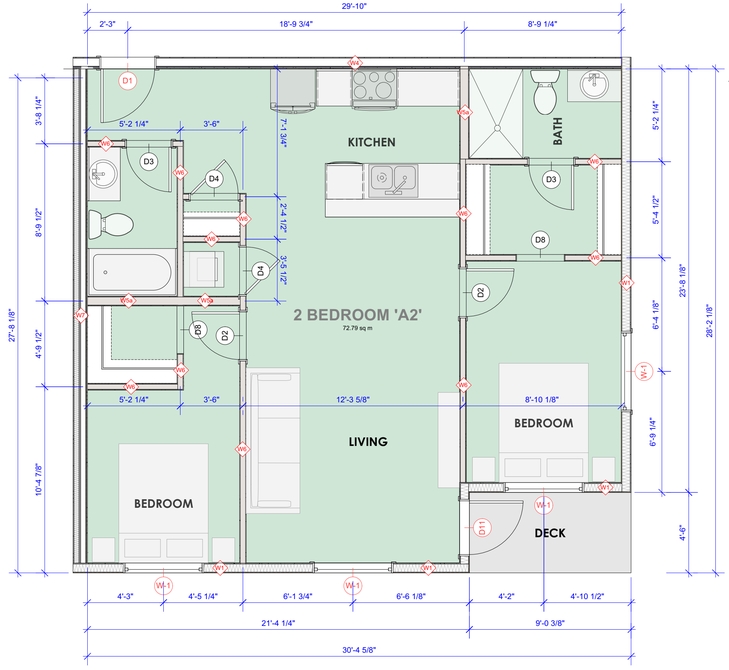
UNIT DIMENSIONS ARE:

- FROM EXTERIOR SHEATHING TO UNIT INTERIOR WALL CENTERLINE
- FROM INTERIOR FACE OF CORRIDOR OR PARTITION WALLS TO UNIT INTERIOR WALL CENTERLINE

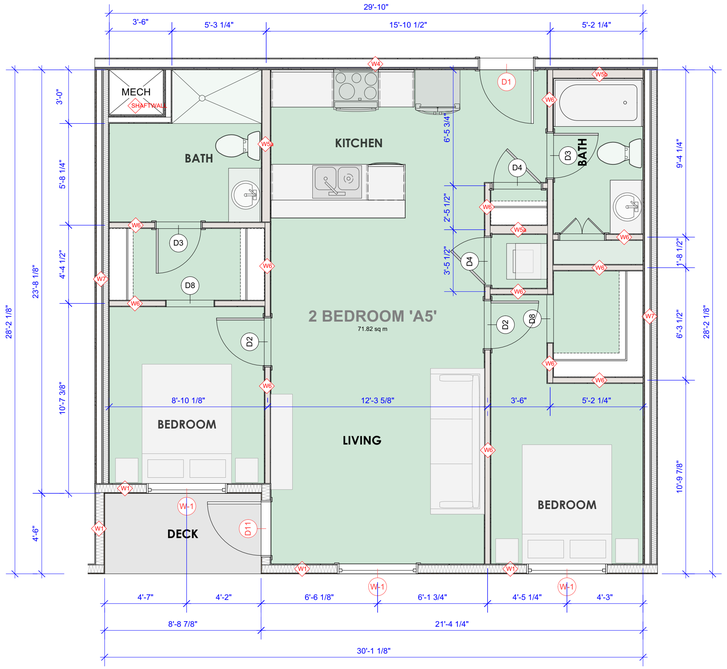
REFER TO WALL SCHEDULE - REFER TO STRUCTURAL FOR SHEAR WALL REQUIREMENTS



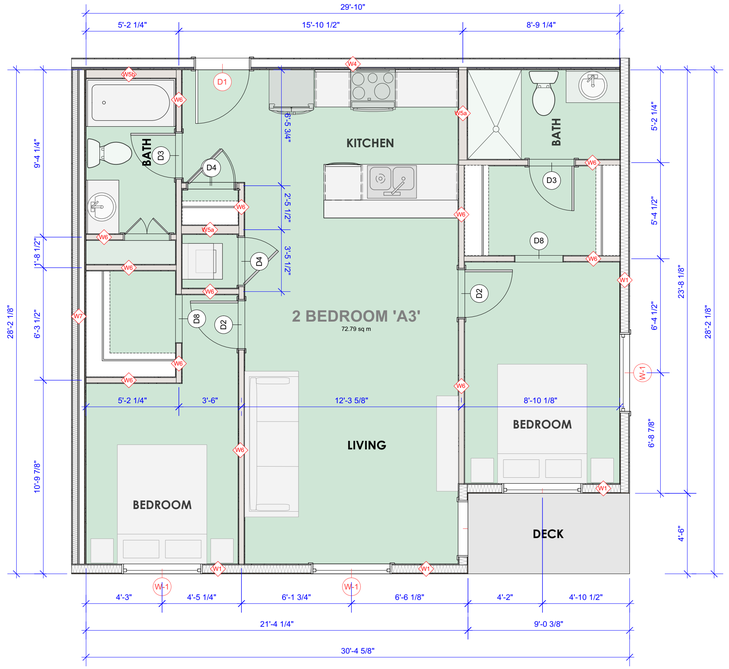
4 A2.7 2 BEDROOM UNIT 'A4' BLDG 'B' FLOOR PLAN (w/ ELECTRICAL CLOSET)
Scale: 1/4" = 1'-0"



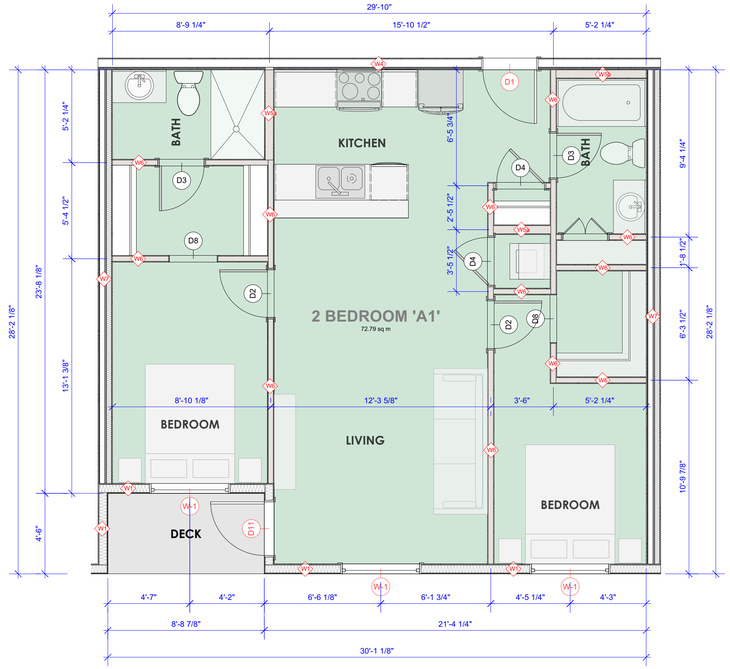
2 A2.7 2 BEDROOM CORNER UNIT 'A2' BLDG 'B' FLOOR PLAN
Scale: 1/4" = 1'-0"



5 A2.6 2 BEDROOM UNIT 'A5' BLDG 'A'/'B' FLOOR PLAN (w/ MECH SHAFT)
Scale: 1/4" = 1'-0"



3 A2.7 2 BEDROOM CORNER UNIT 'A3' BLDG 'A' FLOOR PLAN
Scale: 1/4" = 1'-0"



1 A2.7 2 BEDROOM UNIT 'A1' BLDG 'A'/'B' FLOOR PLAN
Scale: 1/4" = 1'-0"

CONTRACTOR TO VERIFY ALL LINES, LEVELS, SURVEYS, DIMENSIONS, LOCATION OF BUILDING ON SITE AND LOCATION OF ALL SERVICES PRIOR TO CONSTRUCTION. ALL WORK TO BE DONE IN ACCORDANCE WITH THE B.C. BUILDING CODE, CURRENT EDITION AND ALL LOCAL BUILDING BYLAWS.

COPYRIGHT RESERVED. THESE PLANS ARE THE PROPERTY OF THUJA ARCHITECTURE STUDIO. TO BE USED SOLELY FOR THE PROJECT SHOWN. UNAUTHORIZED REPRODUCTION OR USE IN ANY MANNER IS NOT PERMISSIBLE.

REGISTERED ARCHITECT
TANIS ERIN SCHULTE
BRITISH COLUMBIA

NOV. 23, 2020

THUJA
architecture + design

Tanis Schulte Architect AIBC LEED AP
41289 Horizon Dr. Squamish BC V8B 0Y7
T: 250.650.7901 E:info@thujaarchitecture.ca

NO.	DATE	
ISSUED FOR REVIEW	JAN	22 2020
ISSUED FOR REVIEW	FEB	05 2020
ISSUED FOR REVIEW	JUNE	20 2020
ISSUED FOR REVIEW	JUNE	27 2020
ISSUED FOR REVIEW	JULY	21 2020
ISSUED FOR REVIEW	AUG	14 2020
ISSUED FOR COORD	SEPT	23 2020
ISSUED FOR COORD	OCT	27 2020
ISSUED FOR B.P.	NOV	23 2020

PROJECT

PROSSER MULTIFAMILY

DRAWING

2 BEDROOM UNIT FLOOR PLANS

SCALE	AS NOTED	PROJECT NO.	20--
DATE	NOV. 23, 2020	DRAWN BY	TS / JS

SHEET

A2.15

Appendix B

PODIUM SEATING/PLANTER

NOTE: ALL WORK AND MATERIALS SHALL BE TO BCSLA / CNLA STANDARDS

PLANT LIST

SYMBOL	BOTANICAL NAME	COMMON NAME	COUNT	SIZE
	Trees			
VM	Acer circinatum	Vine Maple (multi stem)	13	#5pot
Dm	Acer glabrum	Douglas Maple	9	#5pot
Cn	Cornus nuttallii 'Eddie's White Wonder'	Pacific Dogwood Eddie's White Wonder (MULTISTEM)	7	2m Ht WB
CN	Chamaecyparis nootkatensis	Alaska Yellow Cedar	7	2m
Gbp	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	3	6cm Cal.
M	Magnolia 'Sunspire'	Sunspire Magnolia	5	6cm Cal.
Pc	Pinus contorta	Shore Pine	15	#5pot
	Shrubs			
Aa	Amelanchier alnifolia	Saskatoon Serviceberry	10	#2pot
HaA	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	7	#2pot
Jc	Juniperus communis	Common Juniper (horizontal)	8	#2pot
Mr	Mahonia repens	Creeping Oregon Grape	78	#2pot
Pc	Physocarpus capitatus	Pacific Ninebark	7	#2pot
pvs	Philadelphus x virginalis 'Dwarf Snowflake'	Miniature Snowflake Mock Orange	15	#2pot
Rh	Rhododendron x 'Haaga'	Haaga Rhododendron	6	#2pot
Rhc	Rhododendron x 'Cunningham'	Cunningham Rhododendron	5	#2pot
Rn	Rosa nutkana	Nootka Rose	18	#2pot
Sdr	Spiraea 'Darts Red'	Darts Red Spirea	28	#2pot
S	Gaultheria Shallon	Salal	9	#2pot
Sj	Skimmia japonica 'Rubella'	Compact Skimmia	25	#2pot
Sb	Symphoricarpos albus	Snowberry	12	#2pot
Vd	Viburnum davidii	David Viburnum	25	#2pot
	Ornamental Grasses, Vines & Groundcover			
Ck	Calamagrostis x acutifolia 'Karl Foerster'	Feather Reed Grass	107	#1pot
Dc	Deschampia cespitosa	Tufted Hairgrass	52	#1pot
H	Helictotrichon sempervirens	Blue Oat Grass	46	#1pot
Hm	Hakonechloa macra 'Aureloa'	Japanese Forest Grass	70	#1pot
k	Arctostaphyllos uva-ursi	Kinnickinnick	88	10cm pot
L	Lonicera ciliosa	Trumpet Honeysuckle	18	#2pot
	Perennials			
a	Astilbe x arendsii 'Bressingham Beauty'	Bressingham Beauty Astilbe	10	#1pot
b	Heuchera micranthra 'Bressingham Bronze'	Bressingham Bronze Coral Bells	15	#1pot
df	Dicentra formosa	Pacific Bleeding Heart	38	#1pot
Hfd	Hosta 'Fragrant Dream'	Fragrant Dream Hosta	13	#1pot
Lf	Athyrium filix-femina	Lady Fern	39	#1pot
m	Maianthemum dilatatum	False Lily of the Valley	62	#1pot
N	Nepeta x faassenii 'Dropmore'	Dropmore Catmint	11	#1pot
sr	Smilacina racemosa	False Solomon's Seal	66	#1pot
sf	Polystichum munitum	Sword Fern	87	#1pot

LEGEND

- PROPERTY LINES
- CS — BRUSH FINISH CONCRETE WALKWAYS CW COLOURED BANDING PATTERNS - REFER TO CIVIL ENG DWGS
- DRAIN ROCK DRIP STRIP & BALLAST 100 MM DEPTH 1" - 4" DIM WASHED ROUND RIVER ROCK ON 25 MM DEPTH PEA GRAVEL ON APPROVED FILTER FABRIC CW PT 2x4 WOOD EDGER.
- CRUSH AGGREGATE WALKWAY SURFACE OVER PARKADE LIME ROCK OR SIMILAR (WATERPROFFING BY ARCHITECT)
- ARTIFICIAL TURF - ON PARADE SLAB
- LAWN = SOD ON 150 MM MIN DEPTH APPROVED GROWING MEDIUM
- PLANTING BED CW 60 MM DEPTH FIR BARK MULCH ON FILTER FABRIC ON APPROVED GROWING MEDIUM. 450 MM MIN DEPTH FOR SHRUBS & 700 MM MIN FOR TREES
- BLACK ALUMINUM FENCE 4' Ht. Typ.
- PT WOOD PRIVACY FENCE / FALL PROTECTION ALONG TOP OF WALLS 6' Ht. TYP.
- AE — 1/8TH x 4" ALUMINUM EDGER
- CORA BIKE RACK SECURED TO CONCRETE WALKWAY

BIKE RACK

CORA BIKE RACK (OR APPROVED EQUIVALENT) POWDER COATED ALUMINIM (COLOUR TTBD)

WOOD TIMBER STACKED CEDAR PLANTERS

WOOD SLAT STYLE BENCHES
STYLE & STAIN TO MATCH ARCHITECTURAL DETAILS

ARTIFICIAL TURF MINI PARK CORNER

Date	Revisions	By
Aug 4 2020	For Review	LS/SD
Aug 6 2020	For Submission	LS/SD
Sept 2 2020	Landscape Revision	LS/SD

LAZZARIN SVISDAHL LANDSCAPE ARCHITECTS
203-1300 1st Avenue, Prince George B.C. V2L 2Y3
250-563-6158 www.lsla-landarch.com

Project
Prosser Street Apartments
CENTRAL SAANICH, BC

Sheet Title
Landscape Plan

Date
August 4, 2020

Scale
1:200 METERS

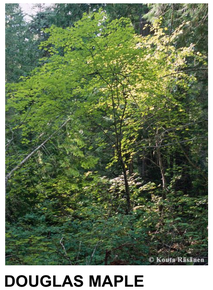
Drawn By
LS/SD

Project No.

Copyright reserved. This drawing and the design are, and at all times remain the exclusive property of Lazzarin Svisdahl Landscape Architects and cannot be used without the Landscape Architect's written consent.

Drawing No.

L 1



DOUGLAS MAPLE

VINE MAPLE

ALASKA YELLOW CEDAR

SHORE PINE

PRINCETON SENTRY GINKGO

SUNSPIRE MAGNOLIA

PACIFIC DOGWOOD EDDIE'S WHITE WONDER

Appendix C

Prosser Building A (RHFP Model) - FINAL FOR FPA

Last modified: March 4, 2021
Modified by: Kimberly Lemmon
Template version: October 7, 2019

Instructions: Fill in green cells. White cells are calculated. Please check all tabs in the workbook to make sure values are appropriate. Some of the calculations pull from other tabs.

UNITS AT A GLANCE:

	Shelter	RGI	Affordable	Total units	Area (sq. ft.)	Total area
Studio	8	-	-	8		-
1 Bedroom	2	-	29	31		-
1 Bedroom + den		-	-	-		-
2 Bedrooms	-	-	12	12		-
2 Bedroom + den		-	-	-		-
3 Bedrooms		-	-	-		-
4 Bedrooms		-	-	-		-
Total	**10**	**-**	**41**	**51**		**37,610**
Type mix	**19.6%**	**0.0%**	**80.4%**			

FINANCES AT A GLANCE:

Project costs	
Purchase price	15,932,800
Other closing costs	942,930
Other financing costs	105,825
	16,981,555
Project funding	
RHFP equity	3,000,000
RHTF grant	615,000
IHI grant	3,250,000
CRHC mortgage	10,116,555
	16,981,555
Cost per unit	332,972
Cost per square foot	452

REVENUE

Unit type	Unit size	Qty	Qty accessible	Starting rent	Inflation	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Shelter	Studio	8	-	375	0.0%	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000	36,000
Shelter	1 Bedroom	2	2	375	0.0%	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
Shelter	2 Bedrooms			570	0.0%	-	-	-	-	-	-	-	-	-	-
19.6%		10	2												
Affordable	Studio				2.0%	-	-	-	-	-	-	-	-	-	-
Affordable	1 Bedroom	29	3	1,345	2.0%	468,060	477,421	486,970	496,709	506,643	516,776	527,112	537,654	548,407	559,375
Affordable	2 Bedrooms	12		1,715	2.0%	246,960	251,899	256,937	262,076	267,317	272,664	278,117	283,679	289,353	295,140
Affordable	3 Bedrooms				2.0%	-	-	-	-	-	-	-	-	-	-
80.4%		41	3												
	Unit totals	51	5		**Total rental revenue**	**760,020**	**774,320**	**788,907**	**803,785**	**818,961**	**834,440**	**850,229**	**866,333**	**882,760**	**899,515**
	% accessible		10%												
Less Vacancy - Rent					2.5%	(19,001)	(19,358)	(19,723)	(20,095)	(20,474)	(20,861)	(21,256)	(21,658)	(22,069)	(22,488)
Parking		51	stalls	30	2.0%	18,360	18,727	19,102	19,484	19,873	20,271	20,676	21,090	21,512	21,942
Less Vacancy - Parking					2.5%	(459)	(468)	(478)	(487)	(497)	(507)	(517)	(527)	(538)	(549)
Operating Subsidy		$ -	pupm	$ -		-	-	-	-	-	-	-	-	-	-
					Effective gross revenue	**758,921**	**773,221**	**787,808**	**802,687**	**817,863**	**833,343**	**849,132**	**865,238**	**881,665**	**898,421**

EXPENSES

Per unit per month	PUPM (now)	Months to completion	Inflated PUPM	Inflation	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Overhead allocation	100	14	102.00	2.0%	62,424	63,672	64,946	66,245	67,570	68,921	70,300	71,706	73,140	74,602
Replacement Reserve	72	14	74	2.0%	45,288	46,194	47,118	48,060	49,021	50,002	51,002	52,022	53,062	54,123
Caretaker	90	14	92	2.0%	56,304	57,430	58,579	59,750	60,945	62,164	63,407	64,676	65,969	67,288
Insurance	70	14	72	2.0%	44,064	44,945	45,844	46,761	47,696	48,650	49,623	50,616	51,628	52,661
Water	40	14	41	2.0%	25,092	25,594	26,106	26,628	27,160	27,704	28,258	28,823	29,399	29,987
Electricity	25	14	26	2.0%	15,912	16,230	16,555	16,886	17,224	17,568	17,919	18,278	18,643	19,016
Natural gas	15	14	15	2.0%	9,180	9,364	9,551	9,742	9,937	10,135	10,338	10,545	10,756	10,971
Landscaping	5	14	5	2.0%	3,060	3,121	3,184	3,247	3,312	3,378	3,446	3,515	3,585	3,657
Maintenance	35	14	36	2.0%	22,032	22,473	22,922	23,381	23,848	24,325	24,812	25,308	25,814	26,330
Garbage	10	14	10	2.0%	6,120	6,242	6,367	6,495	6,624	6,757	6,892	7,030	7,171	7,314
Property Tax	-	14	-	2.0%	-	-	-	-	-	-	-	-	-	-
Total operating expenses	462		473		289,476	295,266	301,171	307,194	313,338	319,605	325,997	332,517	339,167	345,951
% of Gross revenue					38%	38%	38%	38%	38%	38%	38%	38%	38%	39%
				Net Operating Income	**469,445**	**477,956**	**486,638**	**495,493**	**504,525**	**513,738**	**523,135**	**532,721**	**542,497**	**552,470**
				Annual debt service (mortgage payments)	426,747	426,747	426,747	426,747	426,747	426,747	426,747	426,747	426,747	426,747
				Cash Flow	42,698	51,209	59,891	68,746	77,778	86,991	96,389	105,974	115,751	125,723
				Debt service coverage (must be greater than 1.1)	1.100	1.12	1.14	1.16	1.18	1.20	1.23	1.25	1.27	1.29

Making a difference...together

REPORT TO THE SAANICH PENINSULA WATER COMMISSION
MEETING OF THURSDAY, MAY 20, 2021

SUBJECT **Bylaw No. 4411: Saanich Peninsula Water Supply Water Works Facilities Loan Authorization Bylaw**

ISSUE SUMMARY

A Capital Regional District (CRD) Board resolution is required to approve loan authorization Bylaw No. 4411 for the purpose of financing the Saanich Peninsula Water Supply five year 2021-2025 capital plan.

BACKGROUND

The most recent loan authorization for the Saanich Peninsula Water Supply was approved in 1993 under Bylaw No. 2140 to finance capital spending. A loan authorization is typically prepared every five years, or as long-term debt is required. The Saanich Peninsula Water Supply capital plan (the "Capital Plan") includes planned system upgrades and expansion that will require borrowing of $12.9 million from the Municipal Finance Authority of British Columbia (MFABC). This borrowing will occur as required to meet cash flow needs for implementation of Commission approved capital projects. Under the *Local Government Act*, participating area approval is required.

The following bylaw is proposed:

Service Area	Action	Purpose	Bylaw
2.610	Loan Authorization Bylaw	To create a loan authorization bylaw to permit long-term borrowing related to the capital plan for this service.	4411 Saanich Peninsula Water Supply Water Works Facilities Loan Authorization Bylaw No. 1, 2021

ALTERNATIVES

Alternative 1
The Saanich Peninsula Water Commission recommends to the Capital Regional District Board:
1. That Bylaw No. 4411 cited as "Saanich Peninsula Water Supply Water Works Facilities Loan Authorization Bylaw No. 1, 2021" be introduced and read a first, second and third time; and
2. That Bylaw No. 4411 be referred to the Inspector of Municipalities for approval, and if received, to proceed with elector approval by way of the municipal consent process.

Alternative 2
That Bylaw No. 4411 be deferred to a future meeting pending further information.

IMPLICATIONS

Legislative & Financial Implications

Long-term borrowing (i.e. loans with a term of more than 5 years) cannot be undertaken without the loan authorization bylaw being approved by the Inspector of Municipalities after the bylaw is given three readings by the local government. In addition, in accordance with the *Local Government Act*, elector approval is required in order to approve the loan authorization bylaw. Electoral approval can be obtained through consent on behalf of two-thirds of municipal participants' councils or by alternative approval process. It is recommended that elector approval be obtained by the municipal consent process. In a service area of this size municipal council consent would require less administrative resources. This can be initiated when the loan authorization bylaw has received a third reading.

The loan authorization for the provisional Capital Plan is $12.9 million and will support the planned five year capital plan expenditures commencing in January 2022. The estimated debt servicing costs for the borrowing are included in the 2021–2025 five-year operating budget. Capital funds on hand will provide additional funds as required beginning in 2022.

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

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

CONCLUSION

Capital program work on the Saanich Peninsula Water Supply system is planned for 2021 and ongoing. The work will be funded through a combination of capital reserve funds on hand and borrowed funds. Timely access to the borrowed funds in 2022 is critical to meeting the capital program spending needs. To that end, a Capital Regional District (CRD) Board resolution is required to commence the loan authorization process for Bylaw No. 4411 for the purpose of financing the Saanich Peninsula Water Supply system five year 2021-2025 capital plan. An elector consent process will be undertaken to obtain elector approval and can be initiated once the loan authorization bylaw has received third reading.

RECOMMENDATION

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

1. That Bylaw No. 4411, cited as "Saanich Peninsular Water Supply Water Works Facilities Loan Authorization Bylaw No. 1, 2021", be introduced and read a first, second and third time; and
2. That Bylaw No. 4411 be referred to the Inspector of Municipalities for approval, and if received, to proceed with elector approval by way of the municipal consent process.

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., General Manager, Integrated Water Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

ATTACHMENT(S)

Appendix A: Bylaw 4411, "Saanich Peninsula Water Supply Facilities Loan Authorization Bylaw No. 1, 2021"

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4411

****

A BYLAW TO AUTHORIZE THE BORROWING OF TWELVE MILLION NINE HUNDRED THOUSAND DOLLARS ($12,900,000) FOR THE PURPOSE OF ACQUIRING, DESIGNING AND CONSTRUCTING WATER WORKS FACILITIES OF SAANICH PENINSULA WATER SUPPLY

****

WHEREAS:

A. Under Bylaw No. 376, "Bulk Water Rates Bylaw, 1977", the Board of the Regional District established a local service for the purpose of supplying water in the Regional District;

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

C. The estimated cost of the works is the sum of twelve million nine hundred thousand dollars ($12,900,000) dollars;

D. Pursuant to sections 407 of the *Local Government Act*, participating area approval is required for this borrowing and shall be obtained by municipal council consent under s. 346 of the *Local Government Act*; and

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

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

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

    a) to borrow upon the credit of the Capital Regional District a sum not exceeding twelve million nine hundred thousand dollars ($12,900,000); and

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

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

3. This Bylaw may be cited as “Saanich Peninsula Water Supply Water Works Facilities Loan Authorization Bylaw No. 1, 2021”.

READ A FIRST TIME THIS	th	day of	202_
READ A SECOND TIME THIS	th	day of	202_
READ A THIRD TIME THIS	th	day of	202_
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	th	day of	202_
APPROVED BY MUNICIPAL COUNCIL CONSENT PROCESS PER S.346 OF THE *LOCAL GOVERNMENT ACT* THIS	th	day of	202_
ADOPTED THIS	th	day of	202_

CHAIR

CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4374

****

A BYLAW TO AUTHORIZE PLANNED BORROWING OF TWENTY-TWO MILLION, SEVEN HUNDRED THOUSAND ($22,700,000) FOR THE IMPLEMENTATION OF THE LIQUID WASTE MANAGEMENT PLAN IN THE CORE AREA AND WESTERN COMMUNITIES LIQUID WASTE SERVICE

****

WHEREAS:

A. By Supplementary Letters Patent, Division VII dated December 28, 1967, the Capital Regional District obtained the function of acquisition, design, construction, operation, maintenance, renewal and administration of trunk sewers and sewage disposal facilities within all member municipalities of the Regional District, except the electoral areas of Sooke and Outer Gulf Islands, converted to establishing bylaw per Bylaw No. 2312, "Liquid Waste Management Core Area and Western Communities Service Establishment Bylaw No. 1, 1995";

B. Pursuant to the *Regional District Liabilities Regulation*, BC Reg 261/2004, adoption of a loan authorization bylaw is permitted if the borrowing is to implement all or part of an approved liquid waste management plan and Inspector of Municipalities approval is obtained.

C. The Capital Regional District Core Area Liquid Waste Management Plan, dated July 12, 2000, was approved March 26, 2003 by the Minister of Water, Land and Air Protection pursuant to now s. 24(5) of the *Environmental Management Act.* Approved works include the planning, study, public consultation, site selection, design, land and material acquisition, construction, supply and installation of all material, equipment and components and all construction necessary for the preparation and works relating to wastewater treatment and conveyance system in the Core Area;

D. The estimated cost is twenty-two million seven-hundred thousand dollars ($22,700,000);

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

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

1. For the purposes of the Liquid Waste Management Core Area and Western Communities Service, the Board is hereby empowered and authorized to undertake and carry out or cause to be carried out the planning, study, public consultation, site selection, design, land and material acquisition, construction, supply and installation of all material, equipment and components, and all construction necessary for the wastewater treatment facilities in the Core Area; and to do all things necessary in connection therewith and without limiting the generality of the foregoing:

(a) to borrow upon the credit of the Capital Regional District a sum not exceeding twenty-two-million, seven-hundred-thousand dollars ($22,700,000); and

(b) 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 construction of the said facilities.

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

3. This Bylaw may be cited as “Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 1, 2020”.

READ A FIRST TIME THIS	14th	day of	October	2020
READ A SECOND TIME THIS	14th	day of	October	2020
READ A THIRD TIME THIS	14th	day of	October	2020
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	25th	day of	May	2021
ADOPTED THIS	__th	day of		2021

CHAIR

CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4375

****

A BYLAW TO AUTHORIZE THE BORROWING OF THIRTY FOUR MILLION, THREE HUNDRED THOUSAND DOLLARS ($34,300,000) FOR THE ESTIMATED COST OF WORKS RELATING TO THE LIQUID WASTE MANAGEMENT CORE AREA AND WESTERN COMMUNITIES SERVICE PROGRAM

****

WHEREAS:

A. By Supplementary Letters Patent, Division Vll dated December 28, 1967, the Capital Regional District obtained the function of acquisition, design, construction, operation, maintenance, renewal and administration of trunk sewers and sewage disposal facilities within all member municipalities of the Regional District, except the electoral areas of Sooke and Outer Gulf Islands, converted to establishing bylaw per Bylaw No. 2312, "Liquid Waste Management Core Area and Western Communities Service Establishment Bylaw No. 1, 1995";

B. It is deemed desirable to fund works relating to wastewater treatment facilities in the Core Area that had been deferred pending determination of a funding model and the final scope of the Core Area Wastewater Treatment Project, as well as future anticipated works, including the planning, study, public consultation, site selection, design, land and material acquisition, construction, supply and installation of all material, equipment and components and all construction necessary for the preparation and works relating to wastewater treatment and conveyance system in the Core Area;

C. The estimated cost of the works is the sum of thirty-four million, three-hundred thousand dollars ($34,300,000) dollars;

D. Pursuant to s. 407 of the *Local Government Act*, participating area approval is required for this borrowing and shall be obtained by municipal council consent under s. 346 of the *Local Government Act*;

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

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

1. For the purposes of the Liquid Waste Management Core Area and Western Communities Service, the Board is hereby empowered and authorized to undertake and carry out or cause to be carried out the planning, study, public consultation, site selection, design, land and material acquisition, construction, supply and installation of all material, equipment and components, and all construction necessary for the wastewater treatment facilities in the Core Area; and to do all things necessary in connection therewith and without limiting the generality of the foregoing:

   (a) to borrow upon the credit of the Capital Regional District a sum not exceeding thirty-four million, three-hundred thousand dollars ($34,300,000); and

(b) 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 construction of the said facilities.

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

3. This Bylaw may be cited as “Liquid Waste Management Core Area and Western Communities Service Loan Authorization Bylaw No. 2, 2020”.

READ A FIRST TIME THIS	14th	day of	October	2020
READ A SECOND TIME THIS	14th	day of	October	2020
READ A THIRD TIME THIS	14th	day of	October	2020
APPROVED BY TWO-THIRDS OF PARTICIPANTS PER S.346 OF THE *LOCAL GOVERNMENT ACT* THIS	13th	day of	May	2021
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	21st	day of	May	2021
ADOPTED THIS	__th	day of		2021

CHAIR

CORPORATE OFFICER

NOTICE OF MOTION TO CAPITAL REGIONAL DISTRICT BOARD
MEETING OF JUNE 9, 2021

SUBJECT **Partnerships to Protect Old Growth Forests in a Manner Consistent with Reconciliation**

ISSUE

This report provides a recommendation that the Capital Regional District endorse the position of member local governments calling on the Government of British Columbia to protect old growth forests in a manner consistent with reconciliation objectives, and indicate the CRD's willingness to partner with Indigenous and non-Indigenous governments in pursuit of these objectives.

BACKGROUND

Local governments including the District of Highlands, District of Metchosin, District of Saanich, City of Victoria, City of Nanaimo, District of Tofino, City of Powell River and City of Port Moody have joined the chorus of voices calling for protection of remaining stands of high-productivity old-growth forests on Vancouver Island in a manner consistent with reconciliation objectives.

Local governments in the Capital Region have consistently advocated for protection of old-growth rainforests through the immediate and just transition to sustainable management of second-growth forests, improving outcomes including biological diversity, water quality, sustainable employment and community resilience.

Controversy surrounding proposed logging in areas including the upper headwaters of Fairy Creek – the last unlogged watershed in the San Juan River system in the Capital Region – demonstrates the need for action on recommendations in the Provincial government's Old Growth Strategic Review.

It is therefore recommended that the Capital Regional District Board endorse the following resolution and support potential partnerships to protect at-risk old-growth forests on southern Vancouver Island in a manner consistent with reconciliation objectives.

RECOMMENDATION

That the Board endorses the following resolution and directs staff to forward copies to the Premier of British Columbia, the BC Minister of Forests, the BC Minister of Indigenous Relations and Reconciliation, Members of the Legislative Assembly representing constituencies on Vancouver Island, and Association of Vancouver Island and Coastal Communities (AVICC) member local governments, requesting favourable consideration:

> *Resolution: Partnerships to Protect Old Growth Forests in a Manner Consistent with Reconciliation*
>
> WHEREAS the District of Highlands, District of Metchosin, District of Saanich and City of Victoria have gone on record calling for the Government of British Columbia to protect old growth forests in a manner consistent with the objective of reconciliation with Indigenous peoples;
>
> AND WHEREAS Ancient high productivity old-growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and preservation of biological diversity;
>
> AND WHEREAS Less than 3% of the original high productivity old growth forests in British Columbia remain standing, and of this residual land base, 75% is slated to be eliminated through industrial logging operations;

AND WHEREAS the Government of British Columbia's Old Growth Review Panel recommended in April 2020 that the Province defer development of old growth forests where "ecosystems are at very high and near-term risk of irreversible biodiversity loss" until a new strategy is implemented;

AND WHEREAS Alternatives exist to increase protection of biological diversity and employment, through the immediate and just transition to sustainable management of second-growth forests with expanded value-added processing and manufacturing;

THEREFORE BE IT RESOLVED that the Capital Regional District endorses the position of the District of Highlands, District of Metchosin, District of Saanich and City of Victoria calling on the Government of British Columbia to protect old growth forests on Vancouver Island in a manner consistent with reconciliation objectives;

AND BE IT FURTHER RESOLVED THAT the Capital Regional District expresses its willingness to work with Indigenous governments, the Government of British Columbia, the Government of Canada and other entities to protect old growth forests on southern Vancouver Island in a manner consistent with reconciliation objectives, including consideration of establishing Indigenous Protected and Conserved Areas;

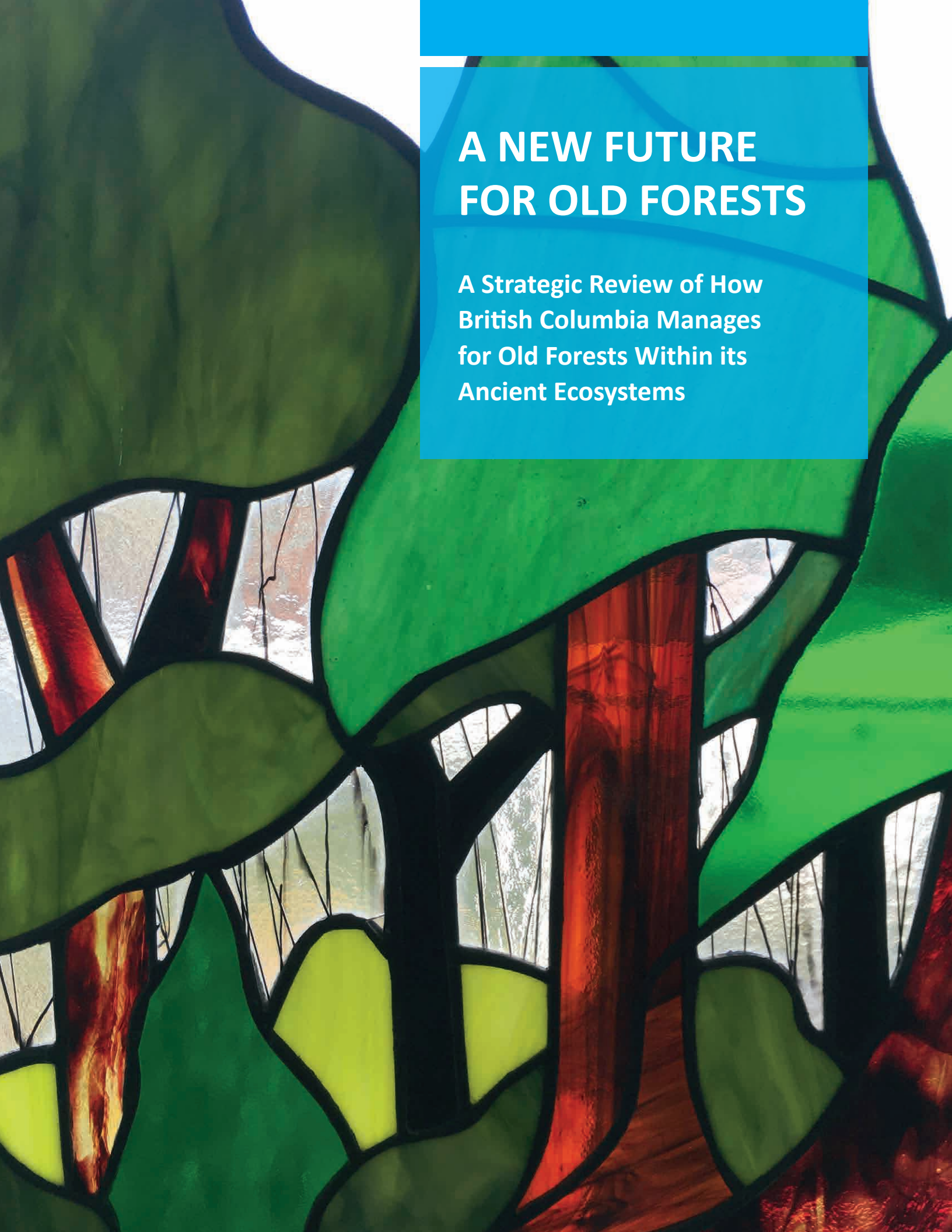
AND BE IT FURTHER RESOLVED THAT the Capital Regional District calls on the Government of British Columbia to work with Indigenous and non-Indigenous communities to implement recommendations of the Old Growth Strategic Review and defer old-growth logging pending implementation of the panel's recommendations;

AND BE IT FURTHER RESOLVED THAT the Capital Regional District calls on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation, and to support through conservation financing and other measures the economic transition of affected Indigenous and non-Indigenous workers, communities and companies from unsustainable old-growth logging toward the development of long-term sustainable local economies.

Submitted by:	Director Ben Isitt, Victoria
	Director Gary Holman, Salt Spring Island
	Director Ned Taylor, Saanich
	Director Dave Howe, Southern Gulf Islands
	Direct Ken Williams, Highlands
	Alternate Director Nathalie Chambers, Saanich

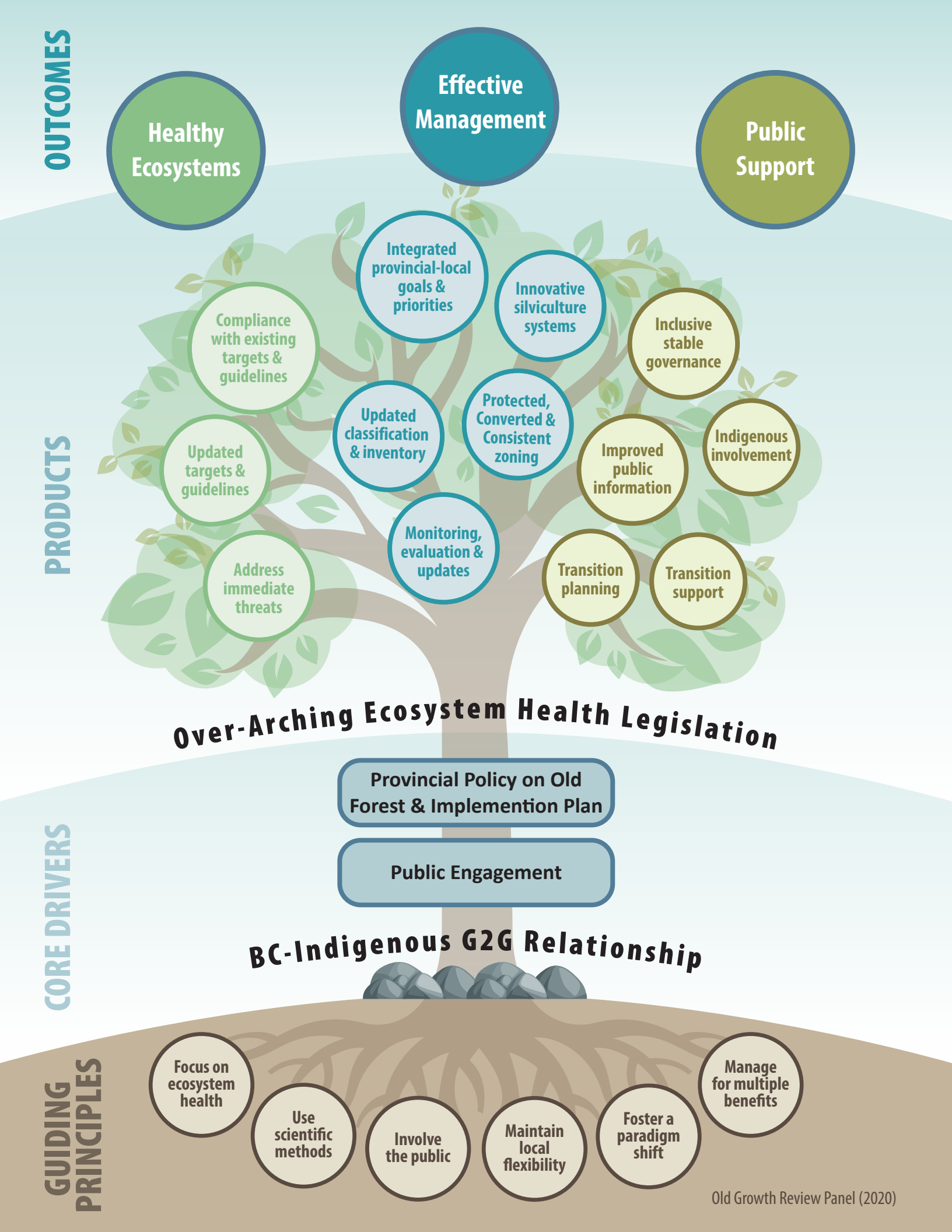
Attachments:

1. *A New Future for Old Forests: Old Growth Strategic Review* (2020)
2. Statement from Pacheedaht First Nation (April 2021)
3. Letter from Elder Bill Jones, Pacheedaht First Nation (2020)
4. Letter from the District of Highlands (April 2021)
5. Resolution adopted by the District of Metchosin (April 2021)
6. Resolution adopted by the District of Saanich (April 2021)
7. Letter from the City of Victoria (April 2021)
8. Letter from the City of Nanaimo (March 2021)
9. Letter from the District of Tofino (April 2021)
10. Letter from the City of Powell River (March 2021)
11. Resolution adopted by the City of Port Moody (March 2021)



A NEW FUTURE FOR OLD FORESTS

A Strategic Review of How British Columbia Manages for Old Forests Within its Ancient Ecosystems



Old Growth Review Panel (2020)

April 30, 2020

Honourable Doug Donaldson
Minister of Forests, Lands,
Natural Resource Operations
and Rural Development
Room 248 Parliament Buildings
Victoria, BC V8V 1X4

Dear Minister,

We are pleased to submit this report detailing the results of our independent strategic review of old growth forest management in British Columbia. We have been honoured to co-chair this work, and to have had the opportunity to engage with and hear from British Columbians directly about how they value old forests, and how they believe they should be managed.

In addition to scientific studies and data, people shared their personal observations, perspectives, and ideas about what needs to be done. In many cases, their information and ideas were about broader land use policies, or sometimes they focused on how to manage a specific plot of land. We particularly appreciated the constructive approach taken by nearly every participant in the dialogue, and the common sentiment that we need to find better ways to manage old forests for a broad spectrum of benefits and reasons.

Our recommendations are shaped by a recognition that society is undergoing a paradigm shift in its relationship with the environment, and the way we manage our old forests needs to adapt accordingly. In the government's upcoming deliberations about how to implement our recommendations, we encourage you to engage with Indigenous leaders and organizations from the outset, and to involve local communities and stakeholders throughout the process.

We also encourage you to consider our recommendations as a whole. Had previous old forest strategies and recommendations been fully implemented, we would likely not be facing the challenges around old growth to the extent we are today, i.e., high risk to loss of biodiversity in many ecosystems, risk to potential economic benefits due to uncertainty and conflict, and widespread lack of confidence in the system of managing forests.

We would finally like to thank you and your government for putting your trust in us to carry out this review. We have done our best to capture the passion and many good suggestions that were provided in the hopes that the results of our deliberations will help you as your government determines the future management of old forests in British Columbia.

Al Gorley, RPF
Co-Chair

Garry Merkel, RPF
Co-Chair

Ponderosa pine
Photo by Deb MacKillop

ACKNOWLEDGEMENTS

Many people care about appropriately conserving and managing British Columbia's old forest ecosystems. We spoke directly with nearly 800 people and heard from thousands more through our survey, written submissions and emails. We thank everyone for sharing their knowledge and opinions. Viewpoints were often expressed with passion and a sincere interest in old forests and land stewardship. In addition to scientific studies and data, people shared their personal observations, perspectives, and ideas about what needs to be done. In many cases, the information and good ideas we received were about broader land use policies, or sometimes they focused on how to manage a specific plot of land. We particularly appreciated the constructive approach taken by nearly every participant in the dialogue, and the common sentiment that we need to find better ways to manage old forests for a broad spectrum of benefits and reasons.

The written input we received has been provided to the provincial government, with the survey results, a specially commissioned technical report, and a summary of the written submissions is also provided in a What We Heard report. Please note that original versions of the written submissions we received are available on the Province's Old Growth Strategic Review website. This report does not cite every comment or idea we received, but we have attempted to bring together the essence of what we learned in our recommendations and implementation suggestions.

As many of you reminded us, it is important to recognize that old forests are more than old or big trees. They are a product of ancient and unique ecosystems, and their characteristics vary greatly across the province. They can only be effectively managed in the context of broader public priorities, including the interests of current and future generations.

We would also like to thank the people who directly supported our work on this endeavour:

- Project management: Steve Kachanoski (BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development)
- Logistics and record keeping: Sacha Chin and Trevor Pancoust (Pace Group Communications)
- Report preparation and editing: Greg Descantes (Pace Group Communications)
- Report graphic design: Myron Advertising + Design
- Survey design and results Elevate Consulting

Al Gorley and Garry Merkel

Photo by Sacha Chin

FOREWORD

Almost three decades ago, over a hundred people from various walks of life, including government, worked for 18 months to find consensus on *An Old Growth Strategy for British Columbia* (B.C. Ministry of Forests, May 1992): In that report the development team said:

> *"Members of the public, public interest groups, professional resource managers and representatives of industry have expressed increasing concern about management of old growth forests in British Columbia. Not only does the forest industry depend heavily on old growth for its current wood supply, but many new demands are being placed on the remaining old growth to satisfy a broad range of forest values.* ***In parts of the province, meanwhile, opportunities to reserve representative samples of old growth are dwindling rapidly*** *(emphasis added). These pressures are leading to increased instances of conflict among supporters of competing land uses."*

Although many subsequent measures were taken under the auspices of land-use planning and the forest practices code (some of which carried forward to the current legislation), many critical aspects of the strategy laid out in that report were either discarded or only partly implemented. Had that strategy been fully implemented, we would likely not be facing the challenges around old growth to the extent we are today:

- High risk to loss of biodiversity in many ecosystems.
- Risk to potential economic benefits due to uncertainty and conflict.
- Widespread lack of confidence in the system of managing forests.

While some of the immediate old forest issues we face can be addressed within the existing policy framework, continuing to apply the approaches that brought us to this point will not provide a sustainable solution. Our underlying assumption is that the government feels it is in the public interest to conserve long-term ecosystem health by maintaining forest biodiversity, so this priority will therefore be the foundational goal of any new strategy. We also assume that a new strategy and supporting policies and programs will be developed through dialogue with Indigenous governments, communities, and stakeholders in a manner that reflects the ecological, historical, and socio-economic uniqueness of each region.

Many of the people we heard from during our engagement process expressed optimism for a positive change to managing old forests, however we also heard a considerable amount of skepticism. We frequently heard about examples where current and past governments were perceived as having not followed through on initiatives or recommendations, including: full implementation of the previous Old Growth Strategy (1992); monitoring and updating land-use plans; reviewing, monitoring and updating biodiversity guidance; and implementing the recommendations of the Forest Practices Board (2012) on old growth management, and the Auditor General's (2013) report on biodiversity, to name just a few.

Therefore, we have suggested that if the government accepts our recommendations, it develop a formal implementation plan to accompany its public response. We advise that this be developed in collaboration with Indigenous governments, and in consultation with many others. We hope this approach provides an avenue to simultaneously build good policy and practices, a stable timber industry as well as public trust.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS 5

FOREWORD 6

TABLE OF CONTENTS 7

DEFINITIONS 9

ACRONYMS 10

TERMS OF REFERENCE AND PROCESS 11

EXECUTIVE SUMMARY 13

INTRODUCTION 17

SITUATION DESCRIPTION 21

- One of several interrelated government initiatives 21
- "Old growth" means many things 21
- The amount of forest with old trees 24
- Forests with old trees have many values 27
- Economic benefits 28
- Biological diversity 30
- Managing for forests with old trees 31
- Carbon balance and climate 35
- History of forest conversion 37
- Harvesting methods 38
- The role of the provincial government 40
- Indigenous involvement 40
- Public and community involvement 41
- Lessons from other jurisdictions 41
- Summary of key points 42
- Key findings 45

RECOMMENDATIONS 46

Required conditions for change 48
1. Indigenous Involvement 48
2. Prioritizing Ecosystem Health and Resilience 49
3. A Formalized Three-Zone Forest Management Framework 50
4. A More Inclusive and Stabilizing Approach to Governance 52
5. Public Information 54

Immediate Responses 55
6. Immediate Response to Ecosystems at Very High Risk 55
7. Compliance with Existing Requirements 56

Improve Management 58
8. Monitoring and Evaluation 58
9. Setting and Managing Objectives and Targets 59
10. Update Biodiversity Targets and Guidance 61
11. Inventory and Old Forest Classification 62
12. Innovative Silviculture Systems 64

Orderly Transition 66
13. Transition Planning at the Provincial and Local Levels 66
14. Transition Support for Communities 68

IN CLOSING 70

DEFINITIONS

Aspatial – Used to describe targets set for the amount of old forest to be retained within a management area as a whole, but not at a specifically define location.

Biodiversity Conservation – To maintain ecosystem, species and genetic diversity, and the processes that shape them, in the face of human development.

Climax condition or climax vegetation communities – A forest community of plants, animals, and fungi which, through the process of ecological succession in an area over time, have reached a state where they are subject to very little overall change.

Forest Stewardship Plan – A plan which guides forest operations for a timber tenure required under the *Forest and Range Practices Act* which is prepared by a forest licensee and approved by government.

Land Use Plans – Plans sanctioned by the provincial government, including those arising from the Commission of Resources and the Environment (CORE), Land and Resource Management Plans (LRMPs), and those developed through government-to-government processes such as for the Great Bear Rainforest and Haida Gwaii.

Legal / Non-legal OGMA – Individual Old Growth Management Areas that are either legally established or are not legally established but still identified in the planning process.

Natural range of variability – Describes the disturbance processes and ecosystem variability that these disturbances create, typically defined by the period before European settlement.

Old growth – A generic term to describe forests with old trees. In British Columbia, for management purposes, this is usually described according to the age of the trees (usually 250+ years on the coast and 140+ years in the interior).

Primary forest – Forests of native tree species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Second growth forest – Forests regenerated on native forests that were cleared by natural or human causes.

Seral stage - An intermediate stage found in ecological succession in an ecosystem advancing towards its climax community. In many cases more than one seral stage evolves until climax conditions are attained.

Site Index – An indicator of site productivity described by the height that a stand of trees reach in a given time, e.g., SI_{50} means the height at 50 years.

Site series – A finer stratification of a biogeoclimatic sub-zone based on soil moisture and nutrients.

Spatial vs Aspatial – OGMAs that are identified spatially on maps (spatial) or are tracked in overall statistics but not specifically identified on a map (aspatial).

ACRONYMS

AAC – Allowable Annual Cut: The number of cubic meters that are allowed for harvest each year in a given area.

BEC – Biogeoclimatic Ecological Classification: A system of classification that categorizes the landscape into zones, each with its own with unique biological, geological and climatic properties.

CORE – Commission on Resources and Environment: A government-appointed commission that was in place from 1992-1996 and lead a variety of land initiatives including various regional land use plans.

ENGO – Environmental Non-Government Organization

FRPA – Forest and Range Practises Act: Legislation (2002) that regulates forest practises in British Columbia.

FSP – Forest Stewardship Plan

LRMP – Land and Resource Management Plan: A local land use plan that engages a number of local stakeholders in the preparation and ongoing monitoring and updates to that plan.

NGO – Non-Government Organization

NRV – Natural Range of Variability

OGMA – Old Growth Management Area: An area that is set aside and specially managed for old forest values.

LU – Landscape Unit: The base area for operational forest planning.

LUP – Land Use Plan

SI – Site Index

THLB – Timber Harvesting Land Base: The area that is operationally feasible to be accessed for timber harvesting.

TSA – Timber Supply Area: An administrative area that is used to set the AAC.

TSR – Timber Supply Review: The process for establishing the AAC in a TSA.

VQO – Visual Quality Objective: A mechanism for protecting the visual quality of a forested landscape.

TERMS OF REFERENCE AND PROCESS

On July 17, 2019, the Government of British Columbia announced that we, Al Gorley and Garry Merkel, would be appointed as an independent panel to undertake a province-wide Old Growth Strategic Review and provide a report to the Minister of Forests, Lands, Natural Resource Operations and Rural Development by April 30, 2020. The purpose is to inform the development of broad public policy regarding old growth forests. The government committed to releasing the report to the public within six months of us submitting it.

In British Columbia, the term "old growth" is officially defined by the age of trees in a forest using specific thresholds (often over 250 years on the coast and 140 years in the Interior). However, we did not limit ourselves to that timber-based definition because it would not have adequately captured the many values, interests and circumstances surrounding conservation and management of old forests.

We were asked to examine the subject from a variety of perspectives, including employment, economic, social, cultural, environmental and climate change, and to consider the interplay between them. To ensure we were aware of these perspectives, we undertook a four-month process of engagement which was substantially completed on January 31, 2020. We did not characterize our outreach as "consultation" because that will be the job of government after it receives our recommendations. Our aim was to learn as much as we could from a wide spectrum of people throughout the province so that we could hopefully make as fulsome a set of recommendations as possible. We also wanted to make sure every British Columbian had an opportunity to express their views.

Without limiting who we heard from, our commitment was to ensure we connected with:

- Indigenous governments and communities
- Local governments and communities
- The forest industry
- The tourism and recreation industries
- Environmental non-government organizations
- Professional associations
- Professionals, academics, and other experts
- Forest and resource stewardship organizations
- Stakeholder groups
- Members of the public

Engagement Techniques	
In-person, teleconference, and videoconference	We participated in over 200 meetings in 45 communities with close to 800 people. To ensure we received input from a wide variety of perspectives, we reached out directly to some groups and individuals, and through our Province of BC website invited everyone interested to request a meeting. Due to the time available, we were unable to accommodate all meeting requests. We kept informal notes of these meetings to help us write this report, but they will not be published. A list of in-person meeting locations can be found in our *What We Heard* report.
Written submissions	We invited individuals and organizations to make formal written submissions. We received more than 300 submissions along with more than 400 published articles, scientific papers, and reports. With a few exceptions where confidentiality was requested, we have asked that these submissions be accessible on the government's website. A synopsis of the written submissions is available in our *What We Heard* report.
Survey responses and emails	We encouraged people to complete our on-line survey, which was open for just over three months, or to send us an email. We received 18,523 survey responses, and approximately 9,000 emails to our electronic mailbox. The results of the survey are summarized and available with this report. The original submissions are also available on the government's website.
Technical and scientific briefings	We received an initial technical briefing from a group of over 30 government staff to ensure we were informed about the status of current forest management processes and initiatives relevant to our task. Several follow-up briefings were also held to address specific information requirements. We also commissioned a report from the Department of Forest Resources Management at the University of British Columbia to tell us how other jurisdictions manage old forests and what we can learn from them. That document is available in the What We Heard report.

The variety and number of contributors exceeded our expectations. We heard from and met with elementary school children, high-school and college students, leading researchers, small and large business from all areas of the timber and non-timber forest sector, practising and retired professionals, elders, parents and grandparents, forest and service sector workers, environmental advocates, self-described average citizens, government employees, and political leaders to name a few. Many people talked about the broader system for managing old forests, whereas others offered up specific local examples to explain their point of view.

Executive Summary

Grizzly Den Trail — High-elevation forest east of Prince George
Photo by Al Gorley

Old forests, especially those with very large trees, are the product of ancient ecosystems, icons of British Columbia's landscape, and a key aspect of the province's unique identity. In addition to their intrinsic value, the timber they provide is important to the provincial economy, and a primary source of income in many communities. These same forests anchor ecosystems that are critical to the wellbeing of many species of plants and animals, including people, now and in the future. The conditions that exist in many of these forests and ecosystems are also simply non-renewable in any reasonable time frame.

Facing diminishing available timber supplies, ecosystems at risk of biodiversity loss in several areas, and significant public concern, the Government of British Columbia announced that an independent panel (Al Gorley and Garry Merkel) would carry out a province-wide Old Growth Strategic Review to inform the development of new management policies and strategies.

In order to understand the range of perspectives (employment, economic, social, cultural, environmental, climate change and more) and consider the interplay between them, we undertook a four-month engagement process to hear from as wide a spectrum of people and organizations as possible throughout BC. This was achieved through a combination of meetings, written submissions, and an online survey. The review looked beyond the timber-based definition of "old growth" so we could adequately capture the many values, interests and circumstances surrounding the conservation and management of old forests. This is one of three reports, and contains a situation overview, our recommendations, and implementation advice. There are two companion documents: *A New Future for Old Forests: Summary Report and Old Growth Strategic Review: What We Heard.* All three reports and the written submissions we received are posted on the Province's Old Growth Strategic Review website.

Our strategic review of the management of old forests led us to conclude that despite the good intentions and efforts of many people, including government personnel associated with forest management development and implementation, the overall system of forest management has not supported the effective implementation or achievement of the stated and legislated public objectives for old forests. This has not come about because of any one group or decision, but through a pattern of many choices made over several decades, within an outdated paradigm.

While our report cannot possibly reflect the full breadth and depth of the information provided to us, our key observations are:

1. Ecosystems with large, old trees are important to British Columbians for many different reasons.
2. Retaining and managing forests of old trees is a key strategy for maintaining biological diversity and cannot be done in isolation.
3. The extent and condition of ecosystems with old trees, relative to natural condition, is highly variable across the province.
4. The economy is heavily dependent on trees harvested from primary forests of old trees.
5. The current system for retaining old forest and managing their attributes has issues arising from incomplete implementation of previous strategies, social trade-offs and a changing landscape.
6. There are opportunities to create greater certainty for forest-dependent communities by formally zoning timber harvesting areas; generating more sustainable and longer-term non-timber economic benefits from old forests; and developing innovative silviculture systems.
7. Climate change will become an increasingly bigger factor in choices about forest management.
8. Information around the types, condition and current status of old forests and information provided to the public about old forests is highly variable across the province.
9. There is widespread support for the provincial government and Indigenous governments to collaboratively create updated strategies and policies for the management of old forests.

There is a near-unanimous agreement that managing the health of old ecosystems, especially those with old trees provides many benefits. We believe the fundamentals to success for the Province's forest management system are ecosystem health, effective forest management and public support. Our review identified weaknesses in each of these areas. To adequately manage and protect BC's old forest biodiversity, attributes, values and benefits for future generations, these weaknesses will have to be addressed. Our recommendations are shaped by that understanding, and the recognition that society is undergoing a paradigm shift in its relationship and interaction with the environment, and the way we manage our old forests needs to adapt accordingly.

Recommendations

On conditions required for change:

1. Engage the full involvement of Indigenous leaders and organizations to review this report and any subsequent policy or strategy development and implementation.
2. Declare conservation of ecosystem health and biodiversity of British Columbia's forests as an overarching priority and enact legislation that legally establishes this priority for all sectors.
3. Adopt a three-zone forest management framework to guide forest planning and decision-making.
4. Adopt a more inclusive and stable governance model that gives local communities and stakeholders a greater role in forest management decisions that affect them.
5. Provide the public with timely and objective information about forest conditions and trends.

For immediate response:

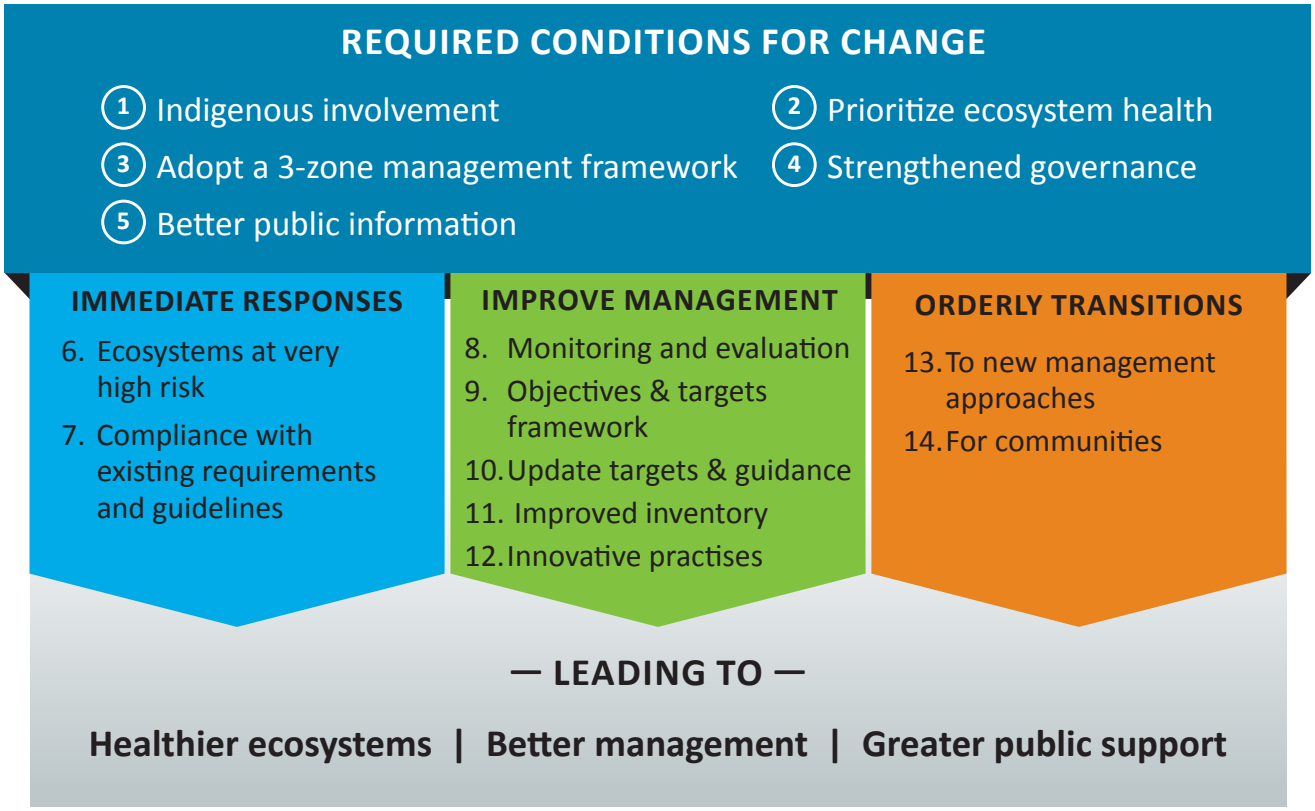
6. Until a new strategy is implemented, defer development in old forests where ecosystems are at very high and near-term risk of irreversible biodiversity loss.
7. Bring management of old forests into compliance with existing provincial targets and guidelines for maintaining biological diversity.

For improving management:

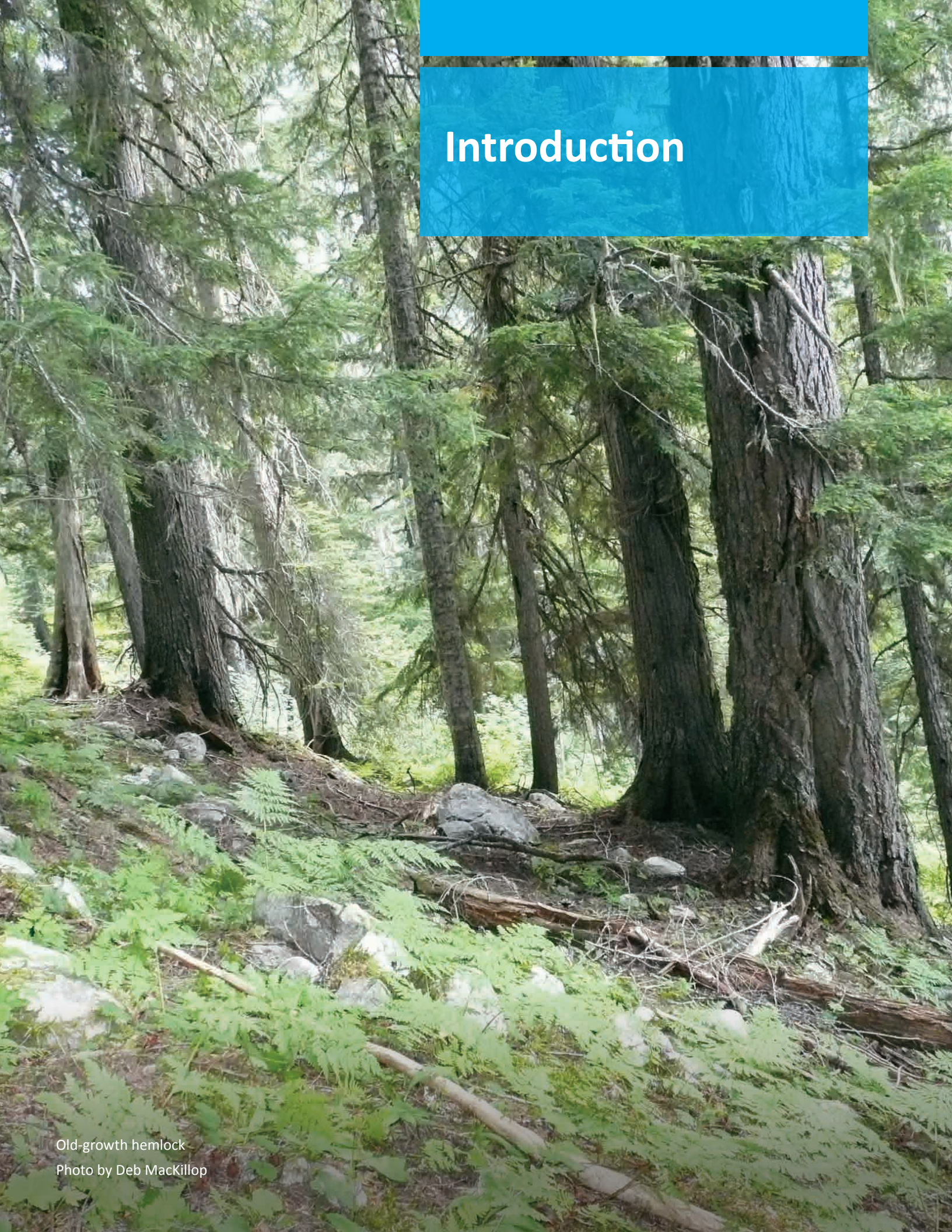
8. Establish and fund a more robust monitoring and evaluation system for updating management of old forests.
9. Establish a standardized system and guidance that integrates provincial goals and priorities to local objectives and targets.
10. Update the targets for retention and management of old and ancient forest.
11. Improve the mapping and classification of old forests to recognize multiple values.
12. Create a silviculture innovation program aimed at developing harvesting alternatives to clearcutting that maintain old forest values.

For orderly transitions:

13. Once developed, implement the new policies and strategies for for the management of old forests through mandatory provincial and local transition plans that define, schedule and monitor the process.
14. Support forest sector workers and communities as they adapt to changes resulting from a new forest management system.



Introduction



Old-growth hemlock
Photo by Deb MacKillop

INTRODUCTION

Old forests, especially those with very large trees, are the product of ancient ecosystems, an icon of British Columbia's landscape, and a key aspect of the province's unique identity. In addition to their intrinsic value, the timber they provide is an economic mainstay, and was once the province's main economic driver. The same forests anchor ecosystems that are critical to the wellbeing of many species of plants and animals, including people, now and in the future.

In recent years, the government has been under pressure to protect old forests from degradation by industrial development. At the same time, there is pressure to maintain viable resource industries at a scale that can compete in global markets. This has led to increasing tension and uncertainty about what will happen to both the forest and the industry. There have been large-scale public demonstrations demanding an end to logging "old growth" and others demanding the government protect jobs by protecting "the working forest" in the face of diminishing timber supplies. The challenge for government is further complicated by the tremendous diversity of the province. Not only are forest types different, but the history of development and economic dependence of communities on forestry varies vastly from one part of the province to another.

The purpose of this report is to inform the development of provincial policies and strategies regarding old forests. In British Columbia the term "old growth" is officially defined by the age of trees in a forest using specific thresholds (often over 250 years on the coast and 140 years in the interior). However, we have not limited ourselves to that definition because it would not have adequately captured the many values, interests and circumstances surrounding the conservation and management of old forests.

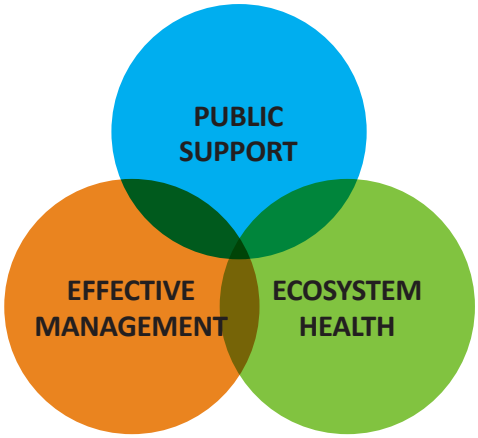
It is important to acknowledge that old forests do not exist in a vacuum. Effective management of old forests can only be properly addressed in the context of their role within the larger ecosystem, and as one component of the larger management system. While our review focussed on how we manage old forests, a significant number of people we heard from during our engagement process told us they have lost confidence in our broader forest management system. Many communities expressed strong concerns about the negative effects of current practices on their forests, ecosystems, water supplies, community safety and other forest-related businesses with little benefit in return. Others told us they are very frustrated because they think that too much harvestable timber is being set aside or made cost-prohibitive, leading to the loss of jobs and essential revenue to the community. Recognizing all these concerns, we feel that orientation of the broader forest management policy, as well as some specific interdependent components, also need to be addressed and we have identified them accordingly.

We received many submissions that identified threats to old forests and their values, and a sense of urgency was often expressed. We also received a number of submissions telling us that old forests are well managed and should be left to the professionals. While some of this is likely the result of different perspectives, interests and beliefs, it also depends a lot on location and scale. One notable observation is that very few groups or individuals fully trusted the information they see on forest management and the state of old forests, regardless of the source.

The panel believes that the fundamentals of success for the Province's forest management system are ecosystem health, effective forest management and public support. Not effectively addressing any one of these elements creates an almost certain risk of failure.

“If we take care of the land — the land will take care of us!”

A comment made to the Panel many times throughout the engagement process



Ecosystem Health: Ecosystems provide a multitude of services essential to the health of all living things, including humans. Ecosystems are very complex and have many individual components which all have some interdependence at a local or landscape level. We will never fully understand ecosystems or how much they can be put under stress before they collapse. Science gives us some direction, but we need to continually improve our understanding and translate that understanding into practise while leaving room for error in the face of uncertainty.

Effective Management: An effective management system has clear and transparent publicly driven goals and objectives; programs and methods designed to achieve them; resources, authority, and management controls necessary to implement them; and monitoring of efficiency and effectiveness to adapt and improve over time.

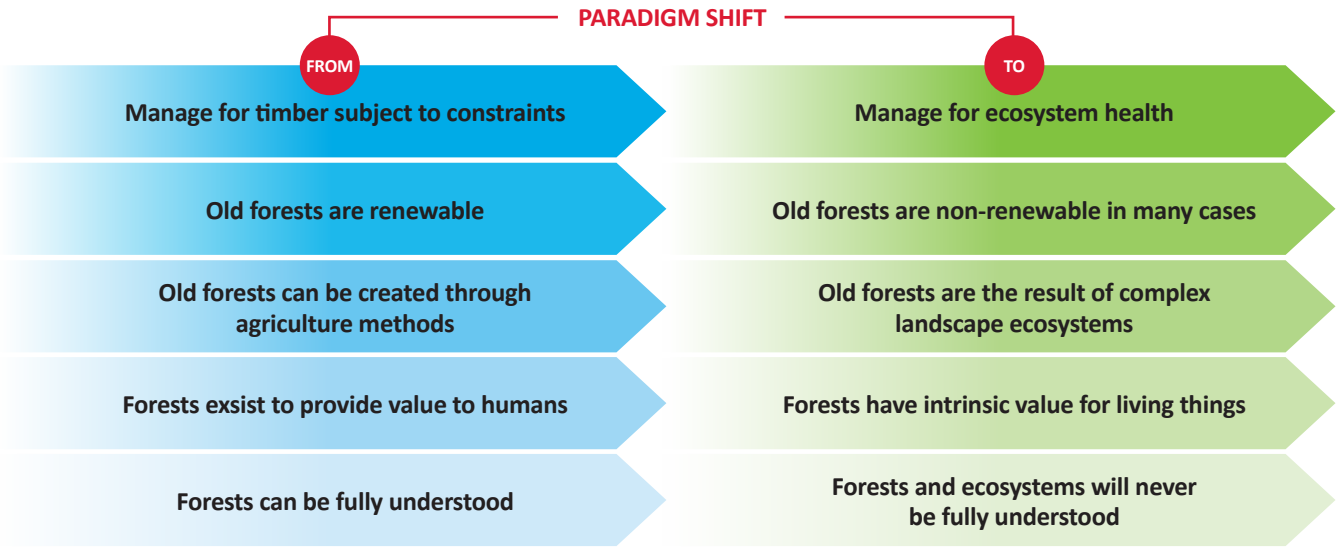
Public Support: We believe that deep and meaningful public engagement and a highly informed public are important factors in gaining public support and associated forest management stability. The confidence and trust of the general public is the biggest determinant in how much freedom government and industry have to manage our forests. If the public feels that the system is not looking after their interests, the predictable response is increased mistrust and opposition to many activities carried out by that system, demands for increased participation and control over decision-making, along with large swings in support for political parties. These reactions are intensified when communities feel that values and conditions important to their survival are threatened — a theme that we heard from a wide range of individuals and groups.

Interior spruce - Boer Mountain near Burns Lake.
Photo by Sacha Chin

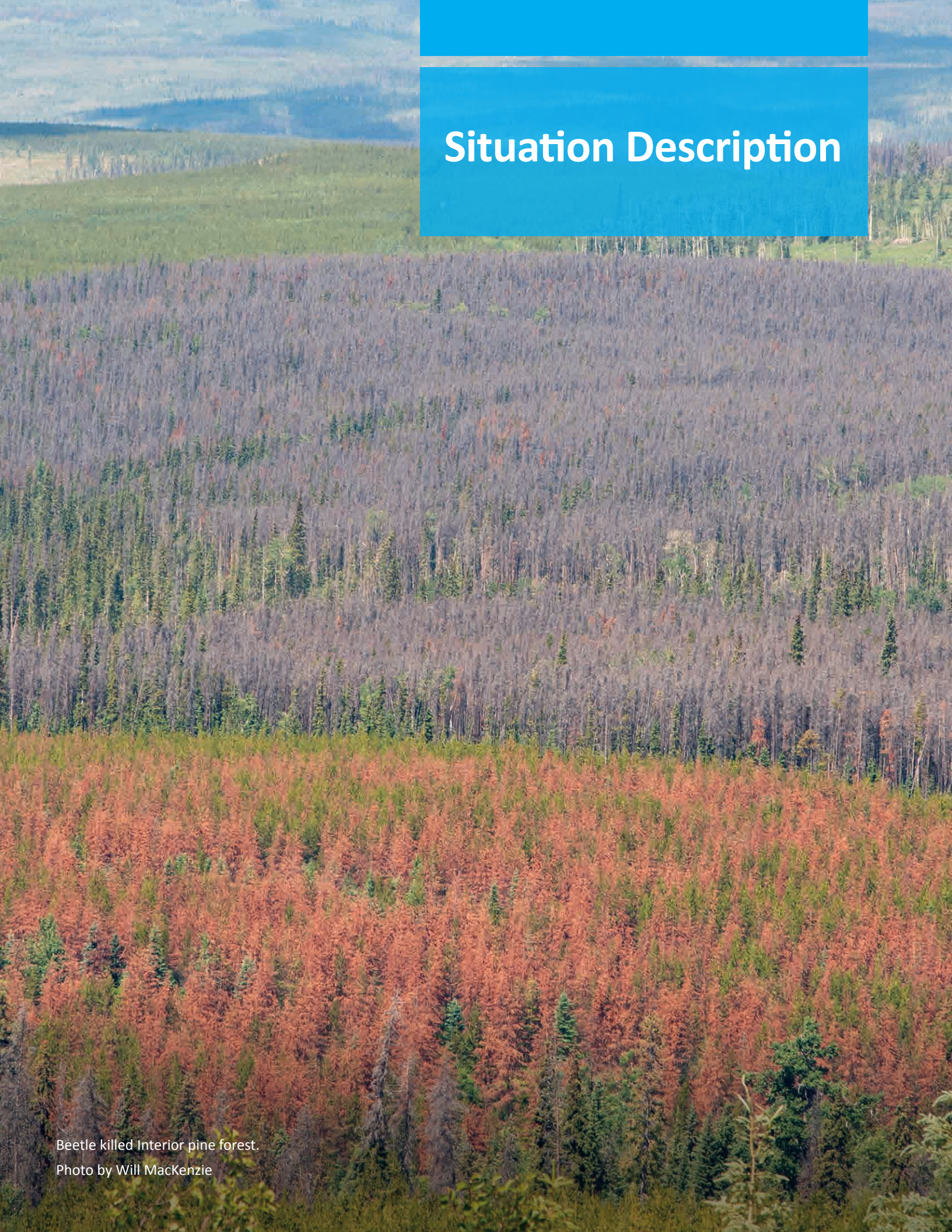
These fundamental requirements for success underly our conclusions and recommendations.

Many of the recommendations in this report are also shaped by our recognition that society is undergoing a paradigm shift, and public policy related to forest management will need to adapt accordingly:

1. BC's Indigenous communities will be key players as one of the most important participants in our future forest management system.
2. Moving to an effective management system for old forests will require a shift in its underlying assumptions. Many other countries are experiencing a similar shift, some proactively and some reactively, largely because of public pressure. Some aspects of this new paradigm are illustrated in the adjacent diagram.
3. There is no one-size-fits-all solution. A new system can establish updated standards, but the application of those standards will need to vary throughout the province depending on ecosystem type, existing and potential ecosystem impacts, local socio-economic conditions and other factors.
4. The full suite of proven scientific methods, e.g., reliable vetted information, targeted research, adaptive management, monitoring and effective technology transfer (research to practise), are essential foundational elements. Properly incorporated, these elements provide a known, reliable, and replicable foundations upon which to build.



Situation Description



Beetle killed Interior pine forest.
Photo by Will MacKenzie

SITUATION DESCRIPTION

This section describes several of the major factors affecting management of old forests in British Columbia, as we have come to understand them. What we have written here cannot possibly reflect the full breadth and depth of the information provided to us, but we have attempted to capture the highlights. Additional detail can be found in our companion *What We Heard* document, and in the many written submissions and technical papers posted on the project website. We encourage individuals desiring a more complete understanding of the situation to access that material.

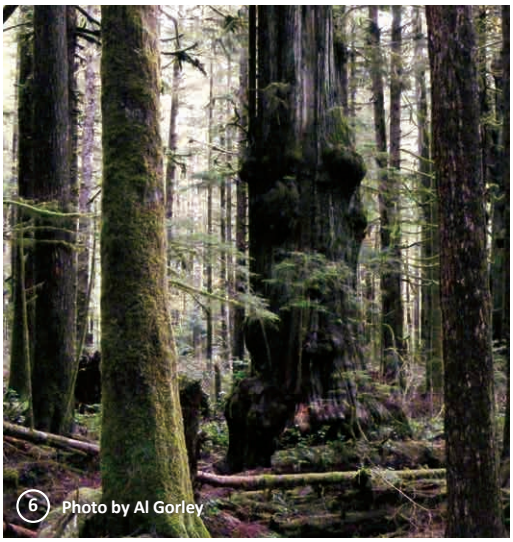
One of several interrelated government initiatives.

In undertaking this review, we quickly became aware of several other government initiatives that are in various stages of completion (See figure below). Many of these touch on some of the same general issues as our review, i.e., How do we create more effective systems to manage forest lands throughout the province, and how do we manage the social, economic and environmental transition to these new systems of land management? We attempted to gain a general familiarity with these and other related ongoing initiatives so as to avoid creating unnecessary confusion or inadvertently getting at cross purposes.

"Old growth" means many things.

The definitions used for forest inventories and planning are based on the age of the dominant trees in a forest ecosystem (often over 250 years on the coast and 140 years in the Interior). However, those definitions were of little relevance to most people outside the forestry sector, and often seen as too narrow by those within it.

In many ways, old growth is in the eye of the beholder. If we mean old forest, then we need to recognize that nearly all of British Columbia's forests (and a host of species and ecosystems services) have evolved within ecosystems that have been developing since glaciation, around 10,000 years ago, and although the trees die and regrow, most areas have continuously been occupied by forest. In other parts of the world, these would be called "ancient forests" regardless of the age of the trees. If we are talking simply about old trees, then a sub-alpine forest comprised of 200-year-old, 20-meter-tall hemlock or balsam is every bit as much old-growth as the giant spruce, cedar, and fir on coastal lowlands. The photos below illustrate a few types of old forests in British Columbia.



1. Southern Interior Ponderosa Pine
2. Interior Lodgepole Pine
3. Mountain Hemlock
4. Southern Interior Cottonwood
5. Northern White Spruce bog
6. Coastal mixed age and species
7. Interior Engelman Spruce, Sub-Alpine Fir

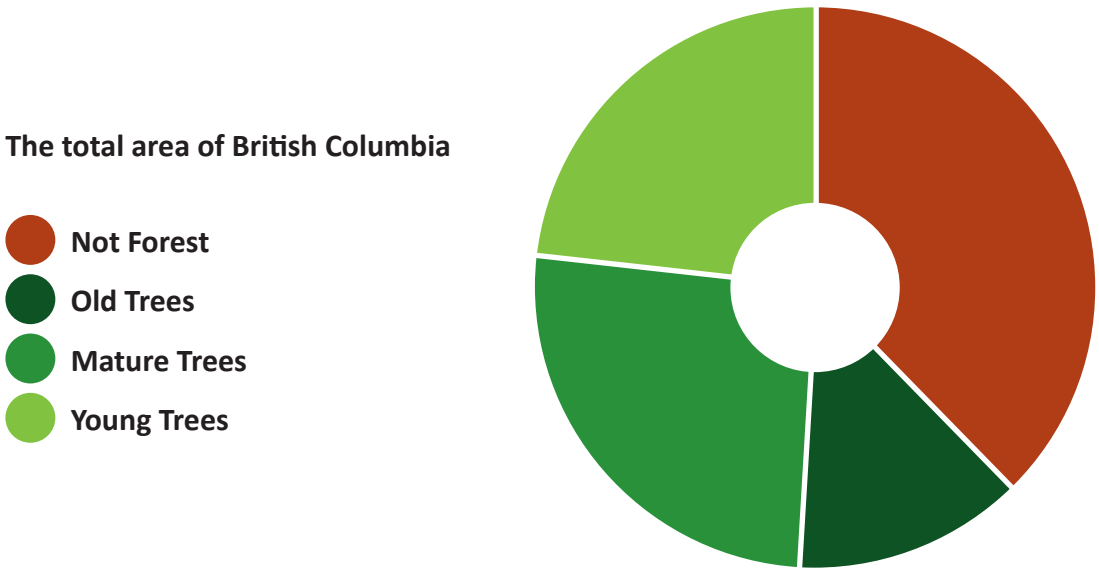
strategy for managing the risk to biological diversity from industrial development, particularly logging.

Although scientists and professionals have developed working definitions for old growth, often based on the relative age of the dominant tree species, or sometimes on physical characteristics and ecological function, no single approach has been universally applicable. For example, according to An Old Growth Strategy for British Columbia (B.C. Ministry of Forests, May 1992): "*Old growth forests are natural stands of old and young trees and their associated plants, animals, and ecological relationships which have remained essentially undisturbed by human activities".* The authors of that strategy recognized their definition required considerable refinement to reflect the diversity of the province's forests, a notion repeated by others in subsequent years. The issue may be best described by an article in the Journal of Forestry (2004), which said: *"An ecological understanding of old growth requires a multi-scale perspective, ranging from individual trees to regions. A consensus on a single general ecological definition of old growth will never be reached, but that should not preclude the development of specific definitions need by managers."*

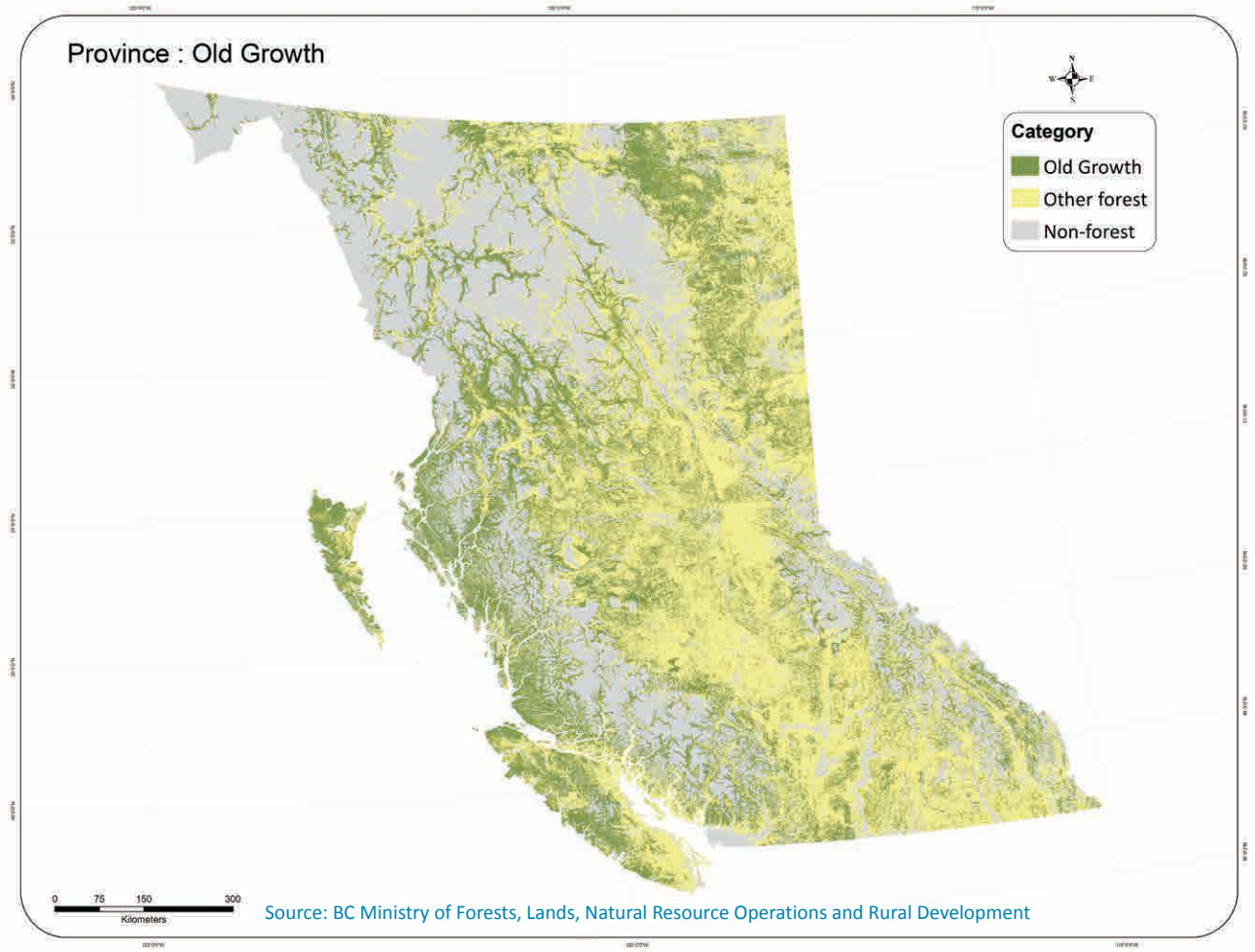
We heard from significant numbers of people who think of old growth as: exceptionally large trees worthy of travelling some distance to see; old or large trees near their home or school; accessible areas where they can enjoy a forest that doesn't have obvious evidence of human disturbance; forests that feel old; areas of mostly older dead and dying trees; and forests with big trees that can be made into high-value products. Others didn't differentiate by age or other characteristics specifically but were more interested in the ecosystem services mature forests provide, especially in relation to climate change, hydrology, and wildlife habitat. Many also made some reference to the value of old growth to conserving biological diversity. A common description was that it is original forest in its natural state, not altered by human activity. In our view, none of them are wrong. Through our recommendations we encourage more clarity in classifying and communicating about old forests, by being more specific about the management objectives and desirable attributes for a particular area of forest.

The amount of forest with old trees.

The total area of British Columbia is nearly 95 million hectares, of which 60% is forest. Based on the government's forest inventory definitions, about 23%, or 13.2 million hectares is "old growth".



Forests with “mature” trees, but not classified as old growth constitute another 46% or 26 million hectares.Except at a very broad scale, the overall provincial statistics are of only limited value because there are vast differences in the amount and character of forest ecosystems with old trees across regions and on individual landscapes (naturally and because of human disturbance). And since the province is so biologically, ecologically and climatically diverse, with many different ecological zones, this means the distribution and representation of various types of forest is very uneven. The map below provides an overview of where old trees exist in the province.



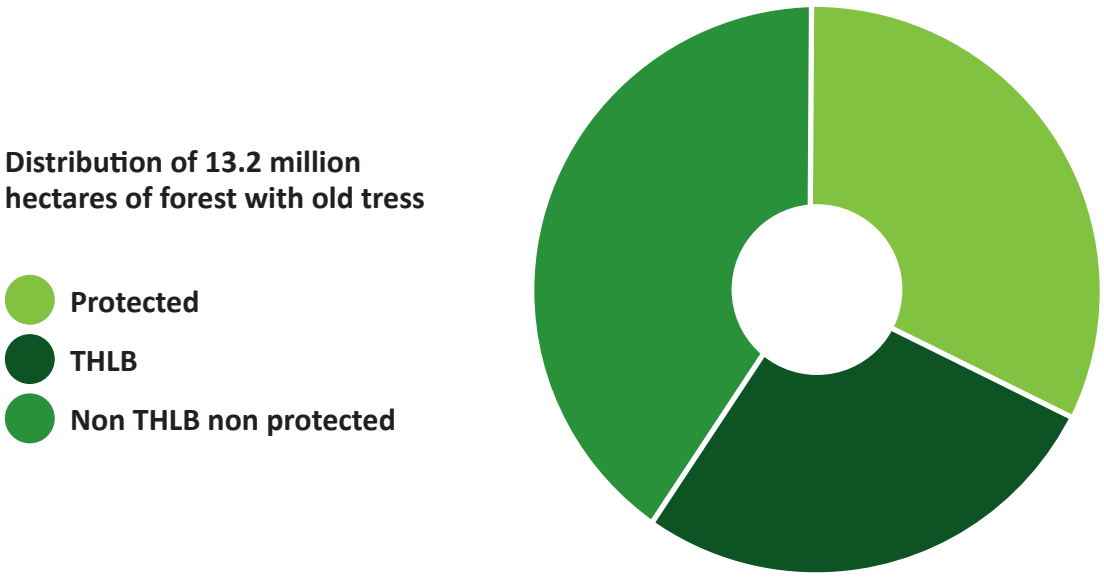
We have not attempted to include specific information about the amount, distribution, and quality of old forest at the regional or local level in this report, but our recommendations will encourage the government to proactively make more information publicly available at relevant scales.

About 4.5 million hectares, or 5% of the province is private land. Of that, approximately 818,000 hectares are in the Managed Forest Land Program. Although only a small portion of the total land area, this is important regionally, and is concentrated in the Kootenay area and southeastern Vancouver Island. Our review focused on public lands; but we heard various concerns that practices on private lands do influence adjacent public forest conservation and management objectives and are not integrated with the overall forest management system.

An important consideration, especially for managing risk to biological diversity, is how much of an area has old trees now relative to what would occur naturally — a proportion that varies by ecosystem and historical natural disturbance. Not all old forest is the same, and old does not necessarily mean big trees.

As much as 80% of the area of old forests consists of relatively small trees growing on lower productivity sites, such as Black Spruce bogs in the North, high elevation sub-alpine forests, or Cedar-Hemlock forests on the outer coast. Those forests remain in relatively great abundance, and are important ecologically, but they are not what many people typically envision as "old growth", and although they may be disturbed by some industrial activities such as mining or oil and gas development, many are not likely to be extensively logged in the foreseeable future. Less abundant are ecosystems that are more productive from a timber perspective and have not already been heavily logged.

Of the 13.2 million hectares of old forest, 33% (4.4 million ha) is protected and 67% (8.8million ha) is not. Protected means the old forest is in parks, ecological reserves, ungulate winter range no-harvest areas, private conservation lands, regional water supply, wildlife management areas, OGMAs (legal and non-legal) and retention VQOs. Of the old forest that is not protected, 38% is within the THLB, while 62% is not as it is assumed to be currently inoperable.



One of the challenges we found early in the engagement process was how information about these statistics is communicated. We consistently heard concerns about the information available to the public. The issues were not so much about data, which has become much more widely available in recent years, but about how it is interpreted and communicated, and by whom. We have seen numerous examples of information put into the public realm that is fact-based but lacking in context or explanation of assumptions or scale.

Many people said they felt the government is largely absent in the discussion about old forest management. This perception is a problem, because the void leads some to believe that the government is bending to corporate interests, while others fear the government will acquiesce to the demands of environmental advocacy groups. If there was unanimity in the comments we received, it was around the need for the provincial government to take a stronger leadership role in facilitating an informed discussion about what is in the best long-term interest of the public, with a strong emphasis on Indigenous communities. In the past, the Province published State of the Forest reports through the Chief Forester's office. The last such report was in 2010. On its website, the government does provide reports on environmental indicators, but not on forest conditions or on old forests specifically. The Forest Practices Board investigates and reports publicly on specific forest practices, but not on forest conditions.

British Columbians expressed a strong desire to participate in informed decisions about how old forests are managed. This was especially the case for those who will be most directly affected by changes to forest management strategies. We believe the public is not only looking for factual information, but also for objective analysis and context that explains what the collective statistics, indicators and trends are telling us.

Forests with old trees have many values

Forests with old and ancient trees contain unique combinations of attributes that grow from ecosystems that have formed over centuries or millennia. These attributes can rarely, if ever, be replicated in younger or compromised ecosystems, even if they contain old trees. It is also important to understand that the age and characteristics of old forests vary greatly between ecosystem types and therefore their descriptions and values are relative. In other words, a forest on the coast may have several species and many ages of trees, whereas drier Interior forests may have only one or two species and be relatively evenly aged. Of course, forest values go far beyond just the trees, as forests also contain other plants, insects and animals, many of which require old forest to survive.

Some of the many values found in forests with old and ancient trees are:

- Unique conditions and processes that are important to conservation of biodiversity;
- Unique species, many of which are still undiscovered;
- Banks of genetic material for future use or adaptation strategies;
- High value timber with qualities not found in younger forests;
- Resistance to fire;
- Interception and storage of water;
- High carbon storage and sequestration capacity;
- Botanical forest products, including medicinal, edible, decorative, and ceremonial plants;
- Fish and wildlife habitats, including essential attributes for nesting or denning, thermal protection and hiding from predators;
- Spiritual and cultural uses, including carvings, canoes, and ceremonial poles;
- Aesthetics such as resident viewing and tourism;
- Commercial and non-commercial recreation; and
- Knowing they are there for their own sake — intrinsic value.

Many of these values can be realized concurrently on the same landscape, or even in the same forest stand, but accessing them can also put them in conflict. The degree of risk depends on how much of the old forest is disturbed and what attributes remain and in what state.

Many people identified specific highly diverse and complex ecosystems that support very large, old trees, and have persisted in a relatively stable climax condition for centuries. These “ancient forests” are globally unique, rare, and contain species as yet undiscovered, and many of these ecosystems and old forests are simply non-renewable within any reasonable time frame . They promote protecting these areas from human disturbance to conserve a wide range of benefits, and particularly for their intrinsic value.

Economic Benefits.

Note that while we have provided examples of statistical information for the forestry and tourism sectors, we caution against direct comparisons as the information sources and their assumptions may vary. We also acknowledge that not all economic benefits are captured here, such as trapping, mushroom collecting, decorative plants, and others that are important sources of income for some individuals.

1. Timber harvesting

For over 100 years, the timber industry has been a central part of the provincial economy, exporting large quantities of lumber, pulp and other wood products to world markets, providing jobs in communities throughout British Columbia, and generating government revenue through stumpage fees and taxes. The industry depends heavily on cutting trees in old primary forests, and although its relative contribution to the overall provincial economy has declined in recent years, many communities, including an increasing number of Indigenous communities rely heavily on the jobs and revenue it generates.

According to statistics compiled in 2016 report for the Council of Forest Industries, harvesting of timber in British Columbia generates over 100,000 direct and indirect jobs, contributes $12.9 billion to provincial GDP, and generates over $2.5 billion to provincial tax revenues. Many of the jobs are spread across 140 forestry-dependent communities and urban centres, including Vancouver and the lower mainland.

According to Statistics Canada, forest product exports have made up 30% to 36% of B.C.'s commodity export value since the recession in 2009, and in 2018 was 32%. While service exports have been growing, commodities still make up the bulk of exports, making the forest sector an important source of foreign currency.

In BC, most of the industry is configured to harvest and manufacture existing primary old forest. There is a substantial interdependency between sub-sectors of the industry: harvesting; primary, secondary and tiertiary manufacturing; transportation; and services. There are also regional interdependencies, with fibre moving between geographic locations at different stages of processing. For example, logs may be harvested in one area, sawn into lumber in another, with the byproduct chips being shipped to a pulp mill somewhere else. Some of the lumber may be shipped to a different region altogether for further manufacture.

According to provincial government data, the non-lumber sector made up 46% of wood product manufacturing sales and more than 47% of wood manufacturing employment in 2018. The non-lumber industries include shingles and shakes, wood preservation, veneer, plywood and engineered wood products, millwork, container and pallet manufacturing, and other activities. The majority of non-lumber goods are consumed domestically, whereas the majority of lumber is exported (82% in 2018).

Concerns around log export and fibre utilization were raised in a number of outreach sessions. Several groups expressed frustration about logs being exported rather than used locally, valuable waste being left in the woods and the amount of old forest residue that is being burned because it is cheaper to burn it than use it. Some licensees and contractors told us that being forced to take poor quality timber, especially in isolated locations, would make their business uneconomical and cause them to shut down. We also heard from a few businesspeople that they could support a viable business if they could get access to these materials but are restricted by either the license holder or government regulations. We did not address this directly in this report however do note that it is an important matter with respect to continued social license.

2. Tourism and recreation

According to a report in 2017 by Destination British Columbia, tourism employs 137,00 people and contributes $9 billion to provincial GDP. Export revenue is reported to be $5.4 billion and provincial tax revenue $1.2 billion. The BC tourism industry is largely anchored in the "Super, Natural British Columbia" brand which invites visitors to enjoy activities in our wild and remote landscapes. While we have not seen province-wide data that states what portion of the economic impact of tourism and recreation is attributable to old forests, and perhaps it isn't possible to know, we know old forests play a key role in tourism. Some individual tourism businesses have done studies on the economic value of old forests for tourism compared to timber in their specific area of operation. We are also aware of a recent (unpublished) study done in the area near Port Renfrew that found the net economic benefit is projected to be higher when the trees are left standing for tourism, than if they are logged.

Information provided by the Adventure Tourism Coalition states that adventure tourism directly or indirectly supports 32,000 families and generated $3.2 billion in visitor spending in 2018. A 2014 analysis of coastal tourism opportunities provides some insight to the dependence of the sector on forests; 78% of surveyed marine tourism operators indicated that their business is "somewhat or very dependent on the natural environment," and 37% cited viewscapes as the primary motivator for nearly all their clients.

There are many other examples of economic interdependence between tourism activities and old or mature forests, including:

- Hunting, fishing, and guiding
- Wildlife viewing
- Mountain biking
- Backcountry hiking, skiing, and snowmobiling
- Canoeing, camping, and horseback tours
- Touring

Perhaps the most obvious examples of tourism dependence on old forests are those activities centred around unusually large trees reasonably close to public access. The best known of these on the coast is probably Cathedral Grove in McMillan Provincial Park near Port Alberni, or in the Interior, the Ancient Forest Recreation Trail east of Prince George. Public and visitor interest in seeing and experiencing these and other big-tree forests is increasing and is being promoted.

3. Natural infrastructure.

Not an entirely new concept to many communities, this is an emerging area of economics and we feel it bears mention, particularly because of climate change. According to the World Resources Institute: *"Natural ecosystems like forests and wetlands provide essential services to water utilities, businesses, and communities — from water flow regulation and flood control to water purification and water temperature regulation. To ensure these ecosystem functions and associated benefits continue, communities can strategically secure networks of natural lands, working landscapes, and other open spaces as 'natural infrastructure.' While concrete-and-steel built infrastructure will continue to play a critical role in water storage and treatment, investing in natural infrastructure can reduce or avoid costs and enhance water services and security as part of an integrated system to cost-effectively deliver safe drinking water."* Some communities are already starting to incorporate the concept of natural infrastructure in community plans.

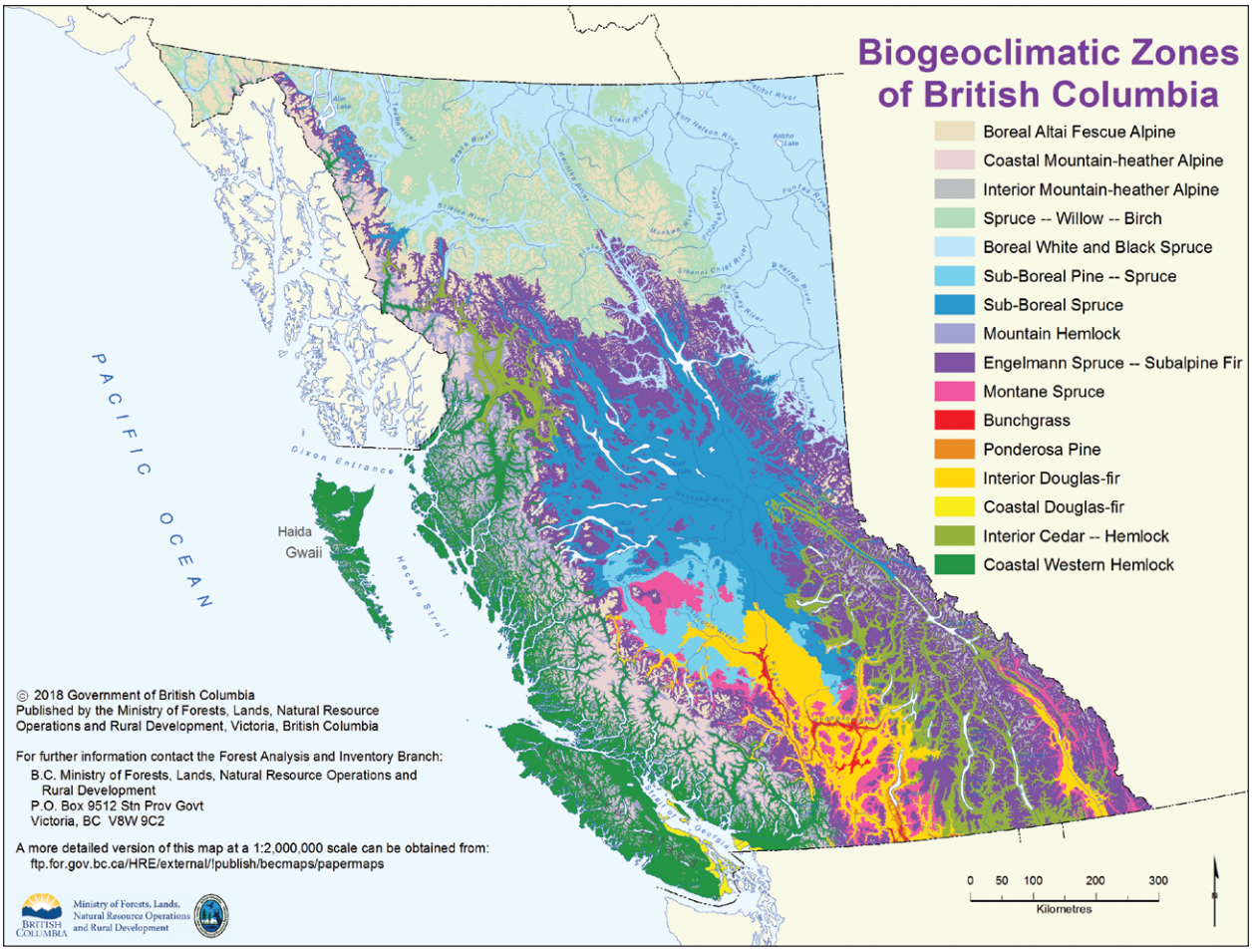
Biological Diversity

Old forest conservation in BC has focused mainly on maintaining biological diversity. A key assumption guiding our current forest management system is that, if biological diversity is maintained, other values will often be accommodated concurrently. This assumption is imperfect, however, since the preferred wildlife habitat, tourism site, or other old forest value being considered is often not physically located where the biodiversity representation is needed.

To describe our diverse ecosystems, British Columbia uses the Biogeoclimatic Ecosystem Classification (BEC) system to stratify the province into zones based on climax vegetation communities that reflect the combined ecological effects of climate and soil.

This is a hierarchical system, with each of the province's 16 major zones divided into climatically distinct sub-zones, some of which are further divided according to climatic variations within the sub-zone. The variety of growing sites that occur in each sub-zone or variant are described using site classification, based on soil moisture and nutrients (site series).

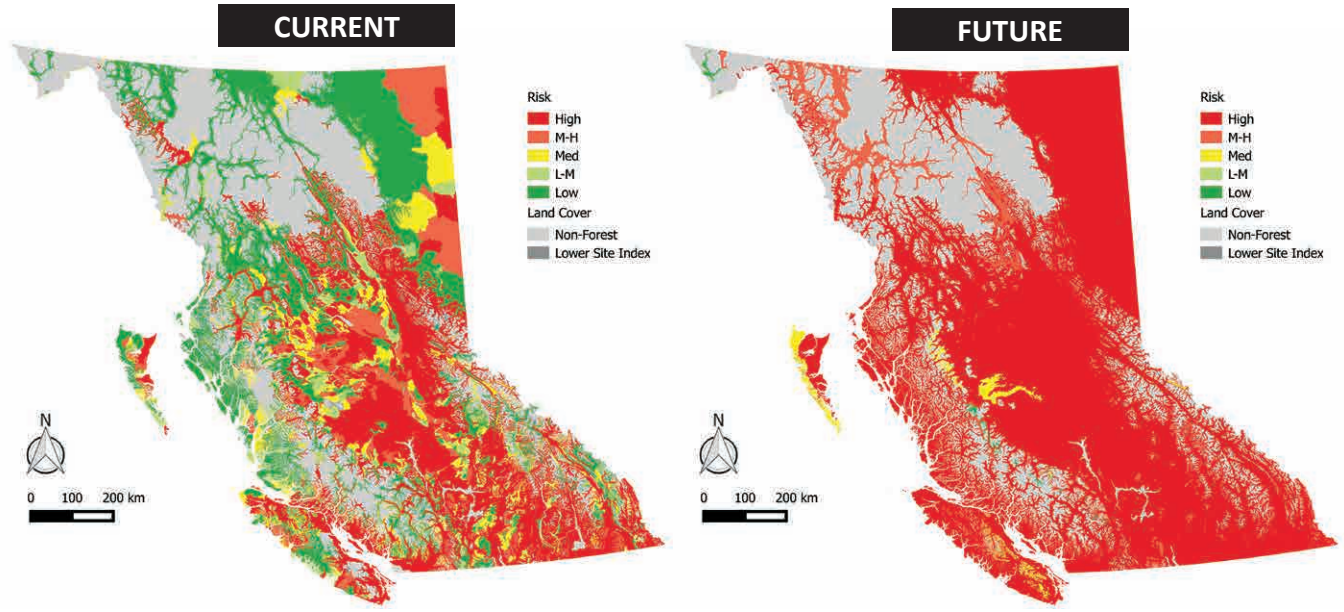
In addition to the variety of ecosystems (as defined by BEC), forests exist in various stages of succession (seral stages) as the trees advance from young to middle age, mature and eventually climax community stages. In some cases, a climax community has persisted without any widespread disturbance for many centuries, resulting in unique, ancient forests. Each site classification may host a different mix of plants, animals, and insects, at each seral stage. Science tells us that if we want to have the greatest chance of conserving our natural biological diversity, we need to keep enough old forest to have a viable, representative sample of every BEC zone at the site-series level.



Source: BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development

Knowing how much to maintain as forest with old trees is guided by the notion that mimicking nature is the approach that presents the least risk to biodiversity. The concept used to measure this is called “natural range of variability” (NRV). This is typically based on a description of ecosystems as they existed before major changes brought about by extensive industrial or agricultural activity. Conservation science provides us with a general risk rating, telling us that if we retain 70% or more of the natural abundance of forest with old trees the risk of species loss, compromised ecosystem services, and losing ecosystem resilience is low. If we retain below 30%, the risk is high. At between 30% and 70%, the risk varies by ecosystem.

Consistent with what we heard from several provincial government staff, a recent report submitted to the panel by a group of independent scientists illustrates that we are in situations of high risk to biodiversity in many areas in the province, particularly in high-productivity, low elevation ecosystems. More troubling is the future projection where almost all of the province will be in high biodiversity risk once our current management approach harvests most of the available old forest. The time to complete this transition depends on the available old forest and various industry and economic factors in each region.



Source: Price, K., R.F. Holt and D. Daust. 2020. BC’s Old Growth Forest: A Last Stand for Biodiversity

Their research also provided the following list of BEC zones that contain less than 10% of their original old forests - CDFmm (all CDF), CWHxm1,2, dm,CHxw, mk3,4, mw1,2,3,4,IDFxc, xh1,2,4, xk, xm, xs, xx2, dc, dk1,2,3,4,5, dm1,2, mw1,2, PPxh1,2,3 (all PP), SBPSmk, SBSwk1,2,3a, and possibly: ESSFxv2, dc1, mh, mv1,2,3,4, wc3,4, wh3, wk1 and wm1,2,3,4. They note that there is some uncertainty because of potential misclassification of age in some of these units, and also recommend that these areas be deferred from further development until we have brought them back enough to meet current legislated targets.

Several practitioners also raised the issue of our current management system combining old forests and using their aggregated data when making assessments for managing biodiversity risk and planning for old forest retention. One example was parks and protected areas, where an initial net down estimate is removed at the landscape level and then netted out again at the detailed operations level, resulting in double counting. A related concern is that many parks and protected areas contain low-productivity old forests, which are deducted from total old growth aggregate targets without identifying which ecosystem they represent. These types of aggregation calculations overlook distribution and spatial considerations that are crucial in managing for effective ecosystem health.

Managing for forests with old trees

On public lands, which comprise about 95% of the province, Land Use Plans (LUPs) provide the basic framework for management of forest lands, of which old forest is only one component. While LUPs vary by area and when they were completed, most use some sort of system of land-use priorities to guide management. This includes parks and protected areas which, while often not specifically designed for the purpose of managing forests, do include significant areas of forest with old trees.

Three distinct areas (Clayoquot Sound, Haida Gwaii and the Great Bear Rainforest) are managed under ecosystem-based management regimes, and although we heard about implementation challenges in those areas, the required level of conservation in ecosystems with forests of old trees is much higher than in other areas of the province. Therefore, we have focused our discussion on management outside of those areas.

Most public forested areas outside parks and protected areas are available for logging through various types of licences issued by the Province. Most licences make the holder responsible for planning where to log within the license area, subject to constraints set out under the *Forest and Range Practices Act* (FRPA). Other activities such as oil and gas development, mining, or tourism development are subject to different legislation and requirements.

Under current regulations governing forest licensees, the objective set by government for wildlife and biodiversity at the landscape level is, to the extent practicable, design areas on which timber harvesting is to be carried out that resemble, both spatially and temporally, the patterns of natural disturbance that occur within the landscape "without unduly reducing the supply of timber from British Columbia's forests". The objective set by government for wildlife and biodiversity at the stand level is to retain wildlife trees, "without unduly reducing the supply of timber from British Columbia's forests". We note potential changes to FRPA are being considered by the Province, which should remove this overall constraint.

Forest licensees are required to submit a Forest Stewardship Plan (FSP) describing how they will meet these and other objectives. Once an FSP is approved by government, timber harvesting can be authorized provided it is consistent with the plan. We heard consistent concerns about a lack of monitoring to see whether these guidelines are being met, and if they are effective. We also heard that where monitoring has occurred, the commitments approved in the FSPs are too vague to enforce.

The Biodiversity Guidebook was completed in 1995 as part of implementing the *Forest Practices Code Act*. The guidebook was developed using the best available science at the time, with an expectation that it would be refined as new knowledge was obtained. The original team of senior ecologists drafted the Guidebook using what they felt were the minimum requirements considered to have a good probability of maintaining biodiversity within a landscape unit. Many of the scientists we talked with during our engagement process told us that the original guidance provided by the Guidebook is still sound. However, the Landscape Unit Planning Guide (1999), introduced the concept of biodiversity emphasis options (different levels of risk). This resulted in a deduction from old forest retention targets to account for old forest presumed to already be protected in parks and it limited targets for representation to the BEC variant, rather than the finer site series level. We heard that, from the outset, implementation has fallen so far short of the original guidance that it could not be expected to meet the goals established at that time.

Since 1995, the policy direction has been to limit the impact of biodiversity conservation on timber supply to approximately 4% across the province, and to locate old forest retention areas preferentially in areas with a low priority for harvest. While this seems logical from a timber supply perspective, it weakens the original intent, by biasing representation to lower productivity ecosystems, often at higher elevations.

This trade-off between risk to biological diversity and protecting timber supply is an example of government policy attempting to balancing competing interests. Although old growth targets are a compromise, there was a clear expectation and commitment by government that the risks would be reviewed and future adjustments would occur, if required. We are not aware of a review and adjustment happening, but we believe the circumstances are sufficiently changed, that it needs to be done now.

Old forest retention in BC is administered in one of three ways:

1. Legal, spatially-defined Old Growth Management Areas (OGMAs).
2. Non-legal, spatially-defined OGMAs.
3. Aspatial old forest management.

During our engagement process, we heard a great deal of concern about how these approaches are being implemented. In some ways, the details about the size and condition of OGMAs, how they are located, and rules for incursions and amendments have diverted attention from their original purpose, as a tool in the broader biological diversity conservation strategy. Several forest managers expressed the opinion that the term OGMA is misleading because they are actually used to retain intact areas rather than for proactive management.

Although these retention mechanisms may be working in some areas, examples of the complaints we heard are illustrated in the figure below.

OGMA Concerns

- Poor or unjustifiable location (e.g., doesn't contain old trees, fire hazard)
- Too small
- Not flexible enough to accommodate forest dynamics
- Flexibility abused for roads or development
- Should all be spatial and legally delineated
- Should all be aspatial
- Should all be spatial but not legally delineated
- Unclear objectives
- Inconsistent or unclear rules regarding implementation, or retaining/replacing OGMAs destroyed by wildfire or bark beetles
- poor mapping or inadequate detail in the forest inventory to identify key areas.
- inadequate change reporting

One notable concern was from recent research on edge effect in OGMAs that were established to maintain intact old forests. It showed that old forest dependent species had disappeared, and many old forest functions were often compromised, on average, up to 100 meters from the edge of the adjacent opening (logging, roads, etc.) depending on the OGMA shape, topography and the nature of adjacent openings or other features. When this edge effect was applied to sample local areas, soon to be published research submitted to the panel found that there were almost no intact old forests that retained their original function in those areas.

We also found that, despite having been already reduced to protect timber supply, old growth targets are not being met in some areas. It's difficult know how widespread the problem is because only a few areas have been monitored to determine if targets are being met. In some of these areas, forest licensees said they are challenged to find enough unconstrained timber to harvest their allowable cut. Something clearly isn't working when neither objective is being met.

What was committed/planned/assumed/ recommended…	What we have now…
Adaptive management through continuous monitoring and regular updates	No substantial monitoring or updates since implementation in 1995
Periodic reviews of the entire old growth and biodiversity management system	None to date
Maintain old forest (both the mature and overmature age classes) at acceptable targets	OGMAs focus primarily on overmature in most of the province (mature is not included)
Tracking implementation and achievement of mature and overmature targets	No consistent system to track compliance with targets except in areas of the province where government staff have led special projects
Biodiversity targets for retention of old forests was set at various levels above the minimum threshold of 30%	Some areas were lowered by subsequent political decisions — some lower than the minimum threshold
Old growth would contain old forests, and preferably some of the best.	Many OGMAs do not contain old forests and some contain forests less than 40 years old

Despite commitments made to formally evaluate their effectiveness as a policy tool on an ongoing basis, no review of the OGMA system has taken place since it was implemented more than 20 years ago. Furthermore, there has been no formal, consistent monitoring program to determine whether there is compliance with the current targets, or if they are achieving the intended results. That makes it impossible for the public to know if it is getting good value. The government has small pockets of work underway that may help to alleviate some of these problems. For example, over the last decade, effort has been put into developing methods to assess cumulative effects, including for old growth and biodiversity values. Also, following a special investigation by the Forest Practices Board in 2012 the government formed a working group to address the Board's recommendations. Our impression is that, while these initiatives could lead to some improvements, they have not been a high priority for government and are not presently well enough resourced to have any meaningful impact on management of old forests, at least in the near future.

While the foremost goal of science and practices to conserve and manage forests with old trees is maintaining biodiversity, there are many other objectives that can also be achieved. Managing for most values is quite site-specific. The amount of forest with old trees and the conditions we require depend on the objective. For example, if we're protecting the character of a spiritual or historical site, it may only be necessary to delineate a small area, but it has to be at a very particular location. If the objective is protecting mule deer winter range, we may be able to distribute areas in several suitable places on the landscape. If our objective is preserving visual quality, our actions will be based on attributes as they appear from certain viewpoints or travel corridors.

It is often possible to manage the same area for a multitude of old forest values, provided the objectives are clear and compromises are not so great that critical values (e.g., biological diversity or water quality) are put at high risk in order to accommodate values where we have more discretion (e.g., timber or tourism). This suggests the need for the Province to have clear priorities and objectives for managing old forest values at all scales.

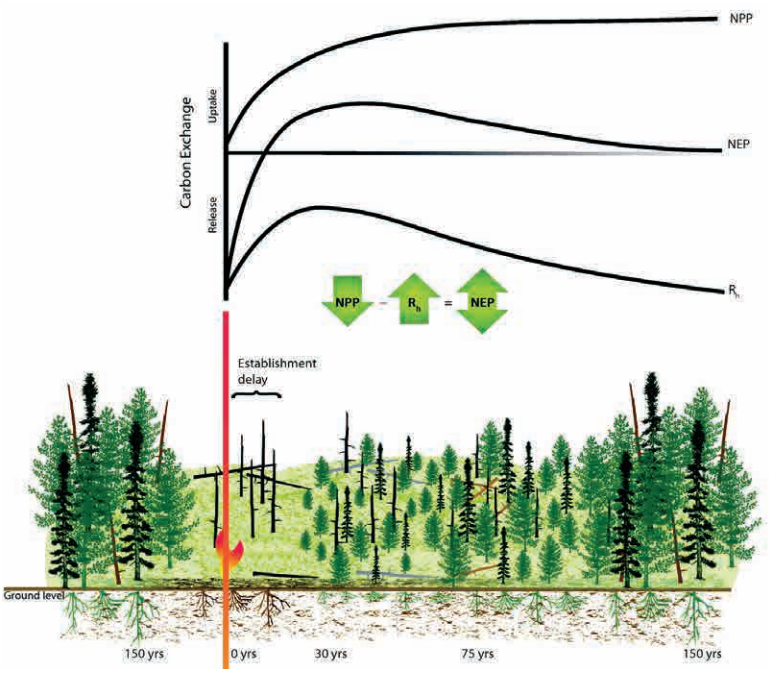
Carbon balance and climate

Many people we heard from linked forests with old trees to climate change, often with conflicting perceptions about its value for absorbing and storing carbon.

The impact of the forest on net atmospheric carbon is complicated. We heard evidence for and against old forests as carbon sinks (taking up more carbon than they release). The answer can vary considerably depending on the circumstances and the timeframe. Forests accumulate carbon in new plant material when they are green and growing. The carbon is returned to the atmosphere when plant material decomposes and combusts (whether it burns in the forest or as wood products).

Carbon can be stored in trees, soil, and long-lived wood products for decades, or even centuries. This storage is considered an important factor in the effort to curb climate change. Of course, we need to keep in mind that not all old forest is the same: in coastal Douglas Fir or cedar-hemlock forests, trees are very long lived and have a relatively low risk of natural disturbances, while many interior forests have shorter lived tree species, and more frequent large natural disturbances (e.g., fire). In other areas, such as the Interior NDT4 Douglas Fir forests can be maintained in a relatively stable old-forest condition through frequent low-intensity fires that burn the understory and keep the forest spaced.

The ability of a forest to absorb and store carbon is age dependent.



NPP net amount of carbon that enters the ecosystem.
Rh respiration from decay
NEP net ecosystem production – total amount of organic carbon

Source: Kurz et al, Carbon in Canada's boreal forest — A synthesis, Environmental Reviews Vol. 21, 2013 (Courtesy NRC Research Press)

- Immediately after disturbance it is a carbon source because post-disturbance organic materials are decaying more quickly, and very young trees are not accumulating high biomass volumes.
- Young forests that begin to accumulate high biomass volumes are strong carbon sinks because they are quickly accumulating biomass.
- The amount of carbon sequestered declines with old age but the amount of carbon stored is very high.
- The timing of maximum amount that is stored and the maximum sink differs.

Timber harvesting causes short-term emissions from the activity itself (e.g., from equipment to harvest, transport and manufacture), and when forest debris (e.g., slash) is burned. We can expect harvested stands to be net carbon sources for several years, until the capacity of new trees to capture carbon overtakes the emissions from the forest floor, soil, and decay of woody debris. The relative carbon impact of harvesting the primary forest depends upon a number of factors, including:

1. Condition of the primary forest at the time of harvest (storing, sequestering, or emitting carbon);
2. The method of harvesting, level of wood utilization, and method of slash disposal;
3. Longevity of the products the wood is used for (e.g., pellets or paper compared to lumber or timbers);
4. How quickly and completely new trees occupy the site and grow;
5. How long the new trees are allowed to grow before being harvested again (rotation age); and
6. The substitution value of using wood over an alternative (e.g., concrete, steel, or plastic).

A report prepared in 2019 entitled Forestry and Carbon in BC suggests that a managed secondary forest could-in principle-recapture the lost forest carbon if allowed to regrow long enough to fully recover its carbon stock, which could be achieved more quickly and easily in most interior forests than in coastal or interior wetbelt forests. It also emphasized that underlying carbon budget calculations are complex and depend on assumptions about a future with much uncertainty.

Another team of BC researchers recently wrote, *"Every old-growth forest is made up of a unique history of management choices and disturbances. Furthermore, their carbon storage value is dependent on future climatic changes specific to the region in question. There seems to be sufficient evidence indicating that many old-growth forests already protected in BC are likely carbon sinks."* And *"more research is needed into which old growth forests are carbon sinks and which are sources, and under what conditions."*

Mountain Pine Beetle-killed timber.
Photo by Traci Van Spengen

Photo by Al Gorley

Many of the old trees in the forest on the left are dead or dying and it would likely be better from a carbon management perspective to recover the salvageable wood and establish a crop of young trees. The old trees in the forest on the right, on the other hand, are relatively healthy, and are still absorbing and storing significant quantities of carbon.

In addition to the function of forests with old trees in the carbon cycle, old trees also play a role in mitigating the impacts of climate change on ecosystems, human communities and infrastructure. For example:

- Regulation of air temperatures (cooler in summer, warmer in winter) and local climate that can be critical to the health of other plant communities, wildlife, and humans.
- Regulation of water temperature, evaporation, cleanliness, flow volume and timing.
- Resistance to fire due to cooler, moister internal forest conditions.

These mitigation functions require having enough mature and old trees in a forest to carry out the hydrological functions and provide canopy. How much primary forest needs to be retained in an older-tree state to influence micro-climates will depend on the local circumstances and objectives.

History of forest conversion

Until the early 1900s, BC's old forests were so extensive that few people would likely have anticipated the circumstances we are in today. The early years of industrial timber harvesting were limited by access — there were few roads, so cutting took place in areas where timber could be manufactured close-by or economically moved by water. Most of the forest was left alone. The scope and scale of harvesting increased considerably though the middle of the 20th century, reaching nearly every region of the province. This led to public concern that the timber supply was exhaustible, and the encouragement of "tree farming".

The result was a policy of "sustained yield", the idea being, that over a period of about 80-120 years, subject to economics, the natural (primary) forest would be logged and converted to managed (farmed) forest, mostly by clearcutting. The subsequent crops of timber would be harvested at their economic culmination age (depending on species, usually 60 – 100 years), thus creating an even, perpetual supply of timber. It is important to note that this is not a typical agrarian model. The intent has always been to conduct forestry with indigenous species on the sites where they would naturally occur.

Under this model of conversion to managed forest, we would expect to transition over a period of time from harvestable primary forest to areas that have another crop ready after harvesting. However, many regions will have a decline in harvest for several decades because of a disproportional amount of young forest. In some regions of the province, mainly on the South Coast, conversion has been underway long enough, and trees grow fast enough that some of the timber being harvested now is from previously converted areas, or "second growth". In some of these, the transition from harvesting old primary forest to second growth will likely be complete within 20 to 30 years. However, in other areas it will be several decades before previously harvested areas are ready to cut again. This means that the situation is highly variable across the province. (We note that some of the areas where harvesting only began at a large scale in the late 1960s or early 1970s have accelerated conversion due to salvaging Mountain Pine Beetle-killed timber and some of these areas have neither an abundance of remaining old forest nor second growth approaching harvestable age).

Areas with the best timber and typically closest to access were often the first to be converted, and few remain in their natural state. These are not only the best timber growing sites, they are also high in biological diversity, often critical to water and fish, and many other values. A recent study tells us: *"Sites with the potential to grow very large trees (Site Index >25) cover less than 3% of the province. Old forests on these sites have dwindled considerably due to intense harvest so that only 2.7% of this 3% is currently old."* We found near unanimous agreement for conserving more of these areas.

Many things have changed since the inception of sustained yield, but it remains the underlying premise for most of our forest management system, except perhaps in the areas under ecosystem-based management regimes. Beginning sometime in the 1980s and following global trends, the public became more aware of the importance of forests for a wide range of ecological values. This led to the creation of more parks and other conservation areas through the Protected Areas Strategy and various forms of land use plans, thus reducing the areas available for conversion to managed forest. It also gave rise to new constraints on forest practices to protect a variety of "non-timber" values, such as water, wildlife, visual quality, and biological diversity — including old forest, within the areas still open to harvesting.

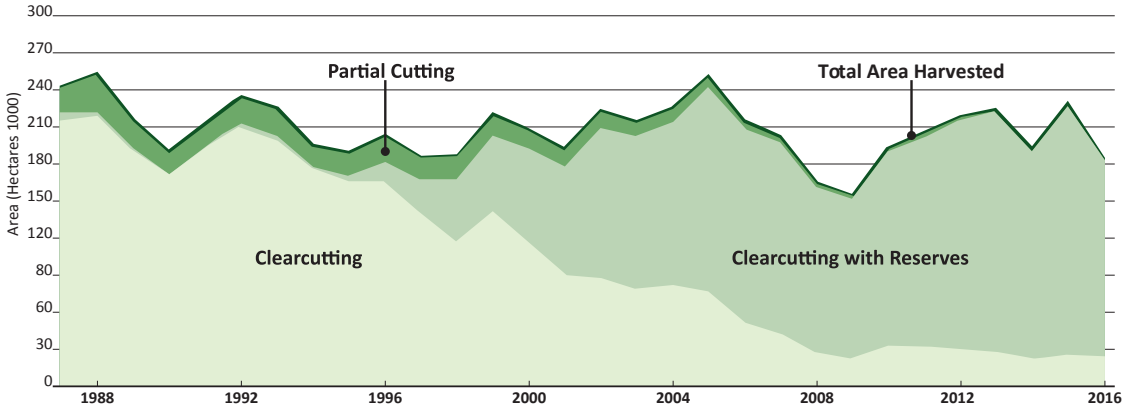
Harvesting methods

Traditionally, most forest harvesting in BC was done by clearcutting, which is the most efficient and least expensive method. Generally speaking, clearcutting removes all trees from an area of one hectare or more, and greater than two tree heights in width, in a single harvesting operation. A new even-aged stand is obtained by planting, natural or advanced regeneration, or by direct seeding. It is most appropriate in forest ecosystems where tree species require an abundance of sunlight or naturally grow in large, even-age stands. Social concerns about large clearcuts have led to a decrease in their average size from 45 hectares on public lands in 1989 to 30 hectares in 2006. We were told that, in some areas, the average size is now 2-3 hectares, but we are also aware of extensive clearcuts carried out in salvage areas during the last several years, and of cutting adjacent to recently harvested areas before they reach the full green-up (continuous clearcut).

Clearcutting with reserves began in the early 1990s and is a variation of the conventional clearcutting silvicultural system in which trees are retained, either uniformly or in small groups. The trees retained may be combinations of small and large trees. They may be chosen to provide wildlife habitat, nesting and den trees, future sources of snags or coarse woody debris, or some level of visual quality.

In 1995, a system of variable retention was adopted for some coastal harvesting as an alternative to conventional clearcutting. This system has two approaches: distributed, where retained individual trees are distributed relatively evenly across the area; or aggregate, where groups of trees are retained to maintain structural diversity over the cutblock. The generally accepted parameters for variable retention are that the retained trees distributed throughout the cutblock, must remain for at least one rotation and be configured to leave more than half the total cutblock area within one tree height from the base of a tree or group of trees including the edge of the cutblock. Note that many scientists and industry advocates of variable retention argue that clearcut with reserves generally does not meet the parameters for variable retention.

Partial cutting is a general term for silvicultural systems (which includes variable retention) in which some trees are left standing after logging. Compared to other systems, the distribution of remaining trees will typically be fairly even across the cut area. Depending on the management objectives, the selection of trees to be retained may be based on their value to a future timber crop, mimicking natural processes to maintain biodiversity, wildlife habitat, aesthetics, or some other purpose.



Source: Trends in Silviculture in B.C. (1987-2016). Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 2018

Until the mid-1990s, most harvesting on public lands in British Columbia involved conventional clearcutting. Government reports show that from 1970 to 1998, clearcutting systems were applied on 87% of the area harvested on public lands. By 2015-2016, harvesting on public lands was by clearcutting with reserves (85%), clearcutting (11%), retention cutting (3%) and other cutting methods (1%). One of the challenges for the public is often to differentiate between conventional clearcutting and clearcutting with reserves, especially in some of the salvage areas in the Interior, where very large contiguous areas have been logged and reserves constitute only small forest remnants.

More use of systems that emulate natural ecological processes may allow us to continue harvesting timber from forests with old trees without converting them to unnaturally uniform managed stands. However, that approach is influenced by a complex combination of numerous factors, such as: government leadership and support, timber value, operating costs, stumpage rates, desired profitability, terrain, technology, blowdown risk, stand condition, forest health, worker safety, expertise, and other land use objectives for the area.

Scientists and professionals use a broad system of natural disturbance types (NDT) to differentiate these processes:

NDT1: Ecosystems with rare stand-initiating events
NDT2: Ecosystems with infrequent stand-initiating events
NDT3: Ecosystems with frequent stand-initiating events
NDT4: Ecosystems with frequent stand-maintaining fires
NDT5: Alpine tundra and subalpine parkland

We heard from several forest managers who said they would like to change their harvest systems to better reflect natural processes but are constrained by these factors, or by the Province's forest practices and timber pricing policies. We also heard about various partial cutting silviculture systems having been applied in the past, but many have been discontinued, except in the case of a few select companies. The results of these experiments need to be better understood.

Generally speaking, under the present system, an area is either reserved from harvesting or available to be converted to managed forest. We heard from many people who are frustrated that the managed forest lacks many of the previously existing natural attributes and they oppose further conversion. We also heard from many forest managers about the costs of uncertainty due to incremental reductions in area available for harvesting. Concerns about this have led many forest-dependent communities to repeatedly call for the designation of a "working forest" to provide greater certainty for on-going access to timber.

The 1992 Old Growth Strategy proposed a conservation framework with:

- A system of reserves to conserve old growth values;
- Commodity emphasis areas supporting sustainable economic activity;
- Special management areas where forest practices maintain old growth attributes.

The current management system has gone part way to this three-zone conservation framework by assigning biodiversity emphasis areas for the setting of old growth targets, but there is no definitive, legally established zoning as was originally envisioned. We believe there is an opportunity to bring greater certainty to the management system, achieve a more optimal mix of public benefits, and encourage innovation, by formalizing this three-zone concept.

The role of the provincial government

We heard a lot of dissatisfaction with government from people on all sides of the issues. While some of that is inevitable in an exercise like ours, this was largely non-partisan, focused on policy and priorities, and had a lot of commonality. We observed widespread concern that the government lacks an "on the ground" presence and needs to have a more active role in ensuring the public's interests are met. The views were not always specific to management of old forests but were offered in that context.

We frequently heard:

1. We need a clear and legally supported long-term vision and set of priorities for our forests.
2. The vision and priorities need to be supported by a principles-based management framework that will meet the needs of the province and provide the flexibility to accommodate the diversity of ecosystems and communities. The principle of proximity, (those who are most directly affected by a decision should have a proportional say) should be embedded in the framework.
3. Government policies for forestry tenures, stumpage, and forest practices discourage the innovation necessary to meet the optimum mix of public values.
4. The management framework needs to be supported by efficient and adequate policies and resources (capacity) to enable implementation.
5. The province has to take a much more active role at all levels to ensure the public's interests are being met. This includes oversight, monitoring, enforcement, and objectively and regularly informing the public about forest conditions and trends.
6. Where the government has direct control (e.g., BC Timber Sales) it should show leadership in developing and demonstrating best practices for sustainably managing forest values.
7. The government's rules for regulating the industry should not oscillate between "command and control" and "hands off" based on the ideology of the government of the day.
8. The government should facilitate a planned and orderly transition from harvesting primary forests to second growth, on timelines suited to specific areas.

Indigenous involvement

Support for Indigenous involvement was heard from every sector and the majority of people who submitted input to the panel. This is obviously top of mind for a variety of legal, social, and environmental reasons: legal with the Crown's duty of consultation and accommodation plus the recent passing of the province's Declaration of the Rights of Indigenous Peoples Act; social with the Province's commitment to a New Relationship; and environmental where many are looking to Indigenous communities for guidance on how to establish land management that achieves a higher standard of land care.

The panel heard a mix of Indigenous perspectives, ranging from calls for increased involvement of Indigenous communities in the timber industry and continued access to old forests for harvesting, through to increased protection for the range of other values from the forest. One common theme was the necessity for increased involvement of local Indigenous communities in the planning and oversight of forest use in their local areas.

Many of the Indigenous groups that were interviewed are actively involved in planning in their own forest management areas and many have developed very innovative, practical, and effective approaches to the management of old forests. These approaches were developed and are continually monitored with close involvement of the local Indigenous community, particularly the Elders in those communities. However, at a provincial level, the capacity of Indigenous communities to do this is very uneven and in some areas underdeveloped. We believe supporting the development of capacity and extending learning amongst Indigenous communities presents an opportunity to support effective forest management and advance reconciliation.

Public and community involvement

Just as we heard almost universal support for government collaboration with Indigenous communities, we also heard from local governments and stakeholders who said that they want more meaningful roles in forest planning and decision-making. We believe their current level of involvement contributes to a significant amount of uncertainty and discontent.

In previous sections, we touched on concerns about a lack of trusted information and process for the public to engage in a meaningful dialogue about forest management, including for forests with old trees. We did encounter a small number of areas in the province where community and stakeholder groups are engaged with government and industry on an ongoing basis, however this was the exception. Yet almost every local government, community organization, and often individuals, expressed a need for a place to learn, exchange ideas and perspectives, and develop useful input to forest management.

In several areas, we heard about the positive experiences with land use planning committees, and the benefits of bringing together experts and civil society with a variety of interests in a collaborative forum where provincial and local priorities could be addressed. Despite an expressed intent, when plans were completed (most during the 1990s), to maintain monitoring committees and have a periodic plan updates, government support declined, and most were disbanded. In some cases, government-facilitated groups were replaced by public advisory groups struck under the auspices of various market certification programs. Convened by forest licensees, these groups helped fill the gap, but many of them ceased operating when companies changed certification systems.

Lessons from other jurisdictions

The panel explored experience from other areas in the world to see if there were any lessons that could be learned around the management of old forests from those areas. Some of the main points were:

- Every jurisdiction's reasons for moving towards the management of old forests were different but most of the areas that adopted a system of significant old forest protection did so as a response to overwhelming public pressure that included either civil disobedience or legal actions;
- Many of the jurisdictions that responded to public pressure went through public policy swings that alternated between favoring the timber industry and favoring protection groups before landing on protection;

- Well-organized ENGOs were deeply involved in almost every jurisdiction's shifts to greater protection;
- The term "old growth" is relatively recent term used primarily in North America: Other jurisdictions use a variety of terms such as old forest, primeval forest, primary forest, virgin forest, ancient forest, wildwood, etc.;
- The trend towards greater protection for old forests had less to do with the age of the timber industry and the associated forest management system in each country and more to do with increased public understanding of issues related to biodiversity, ecosystems and climate change, the use of civil disobedience and legal tactics, and increased public involvement in forest management (generally within with the last few decades);
- Some jurisdictions went to protection measures applied only to old forests while others went to a more comprehensive zoning system to identify measures for lands are protected, managed for ecosystem health or intensively managed for timber production;
- Some countries that have gone through multiple rotations under intensive management are dealing with significant biodiversity loss and associated forest health issues; and
- Many jurisdictions have committed to detailed forest monitoring although in practise many defaulted on those requirements.

Compared to much of the world, our situation in BC is somewhat unique in that:

1. Large-scale commercial cutting of primary forests in BC began less than 100 years ago in southern and coastal regions, and 50 years ago or less in much of the central and northern interior;
2. The vast majority of cutting has been done with the expectation of managing the area for a perpetual crop of timber, rather than forest removal;
3. We have maintained a policy of reforesting with native species that are ecologically suited to the area logged.

This means that although much of the forest is altered from its natural condition, most of the original components still exist somewhere on the landscape. We can't go back and replace the primary forest, but we do have the opportunity to maintain viable examples of the remaining ecological attributes, and possibly restore others.

Summary of key points

1. Ecosystems with large, old trees are important to British Columbians for many different reasons.

- The term "old growth" has become a generic label for forests or trees that hold a variety of different values beyond the definitions used in timber management. OG means different things to many people and has a diverse array of sometimes conflicting values, all of which warrant consideration.
- Old forest values and objectives need to be clearly articulated, with less emphasis on the generic "Old Growth" label.

2. Retaining and managing forests of old trees is a key strategy for maintaining biological diversity and cannot be done in isolation.

- The ability of ecosystems to support species, including humans, and adapt to change is dependent upon their resilience, which comes largely from the natural diversity they harbour.
- Old forests are part of complex multi-scaled, interdependent ecosystems, and are also impacted by complex interdependent forest management policies.

- The total amount of old forest in the province is not as important as the distribution and ecosystem representativeness.
- There are many impacts to old forest arising from various activities in almost every resource sector.

3. The extent and condition of ecosystems with old trees, relative to natural condition, is highly variable across the province.

- The risk to biodiversity is extremely high in some ecosystems and there is a wide-spread call to protect them.
- The forests' ecological conditions, history of natural and human disturbances, and social, cultural, and economic importance are too variable to suggest a single sweeping approach, although there is strong support for a common management framework.
- In many areas, we are not meeting the intent of the biodiversity conservation strategy adopted 25 years ago.
- The approaches to managing old forest have to be adaptable to the ecosystem and natural disturbance regimes.

4. The economy is heavily dependent on trees harvested from primary forests of old trees.

- The degree of economic reliance differs amongst regions and individual communities. For example, some have undergone a transition to greater reliance on tourism, or other sectors, while many others have not.
- In some areas, a transition to second-growth forests is well underway, while in most of the province that transition will require decades of forest growth.
- There is widespread support for assisting workers and communities negatively affected by reduced access to timber supplies, for whatever reason.

5. The current system for retaining old forest and managing their attributes has issues.

- The original intent of the science-based guidance has not been fully implemented.
- The approaches to managing, tracking, and reporting on old forest retention and management requirements are inconsistent and, in some cases, absent.
- Old Growth Management Areas (OGMAs) are applied inconsistently and sometimes ineffectively.
- The use of clearcutting silviculture systems limits the ability to manage for old forest attributes and conserve biological diversity, especially in ecosystems that don't naturally experience large stand-replacing disturbances.

6. Opportunities have been identified to provide greater economic certainty about the blend of benefits from old forests:

- Formalizing designation of forest areas outside reserves to be either managed primarily for commercial production (conversion) or managed for key ecosystem attributes with compatible forestry practices.
- Analysis and pursuit of an optimal blend of public benefits from a wide range of uses (timber, tourism, natural infrastructure, botanical forest products, recreation, etc.).
- Transition to silviculture systems that more closely emulate natural process on remaining unconverted forest.

7. Climate change will become an increasingly bigger factor in choices about forest management.

- The role of old forests in climate change is complex.
- Mitigating climate change through carbon sequestration and storage needs to be fully analyzed and integrated into forest management decision-making.

8. Information around the types, condition and current status of old forests is highly variable across the province.

- There is no regular, objective public reporting about forest condition and trends.
- Classification based on timber inventory criteria, which does not necessarily reflect other old forest values.
- The existing inventory is not well suited to stand-level identification of many old forest attributes.

9. There is widespread support for the provincial government and Indigenous governments to collaboratively create updated strategies and policies for the management of old forests that include:

- Transparent expressions of the public's long-term interests, priorities, and policies;
- Ongoing public involvement in planning and strategic decisions, supported by objective and comprehensive information regarding related issues, risks and opportunities;
- Economic analysis tools to inform public discussion and choices;
- Clear and measurable objectives at meaningful scales, supported by well-resourced enforcement and evaluation of long-term effectiveness;
- Oversight that ensures public interests are considered and incorporated in forest planning and practices, monitoring, compliance and enforcement;
- Ongoing research, innovation and information sharing to foster continual learning and expand the province's collective forest management expertise;
- Adequate monitoring and objective reporting of forest conditions and trends, including the cumulative effects on all values and transparent communication of risks and benefits; and
- The means and authority to address risks to critical values.

Old coastal forest.
Photo courtesy BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development

KEY FINDINGS

Based on the situation overview and key points above we find that, while there may be debate about how much old forest we have and where, there is a near-unanimous agreement that managing and protecting ecosystems for forests with old trees provides many benefits. However, there are serious concerns about the ability of our current management policies and implementation of old forest strategies to achieve that in the long-term. We observed what we believe to be fundamental weaknesses in the system relating to the core foundations for forest management success identified earlier in this report: ecosystem health; public support; and effective management.

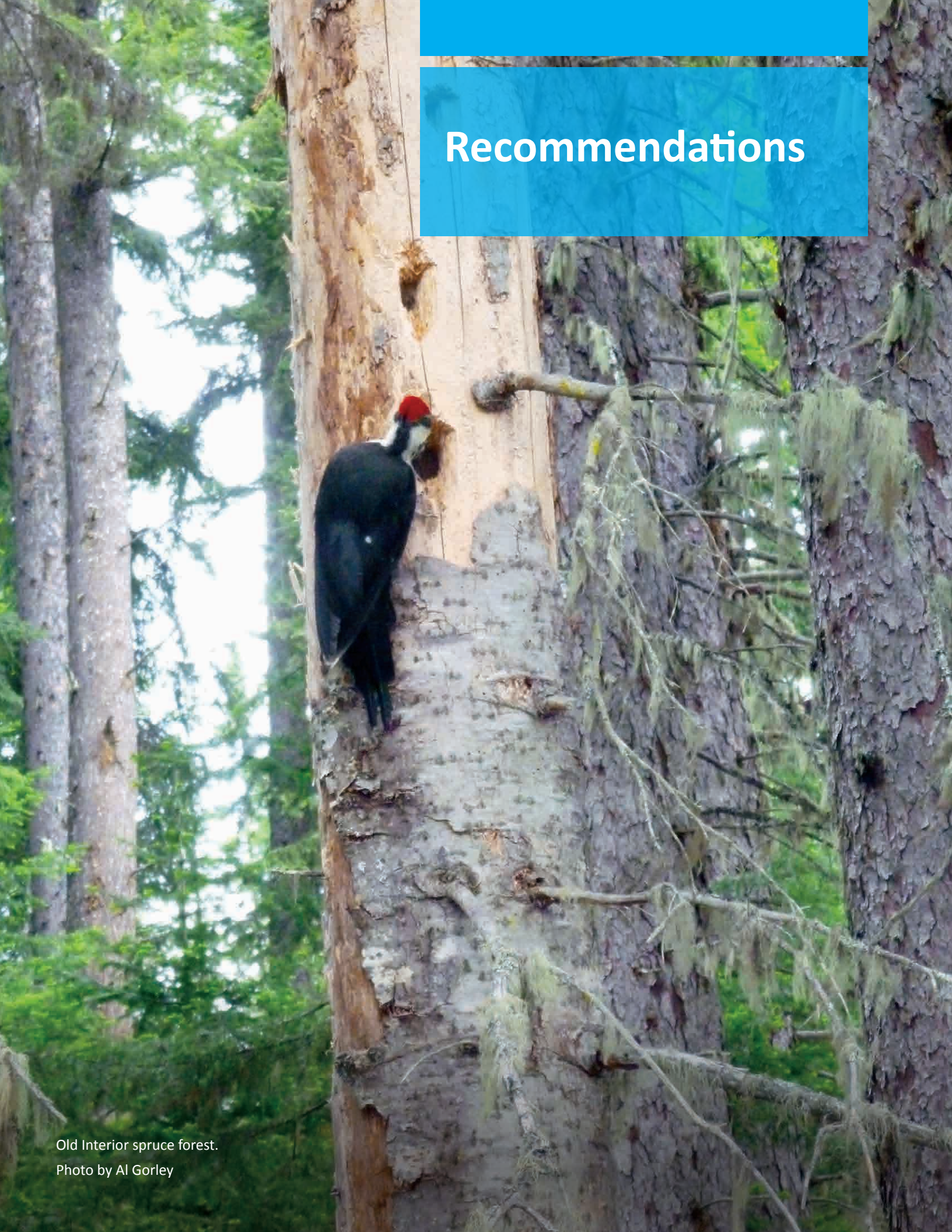
1. **Ecosystem Health:** The priorities that currently drive our forest management system are backwards. Rather than determine what must be done to maintain ecosystem health and resilience, and then what social and economic benefits we can derive within that guidance, we often do the opposite. We consistently refer to measures required to protect ecosystem values as "constraints" on timber. An example is the policy for implementation of biodiversity conservation, which has a fixed ceiling on timber supply impact, reinforced by the objectives in the *Forest and Range Practices Act*. Many members of the public and government staff expressed concerns about this bias in the current system.

2. **Effective Management:** Many aspects of the system are seriously lacking and are not anchored in sound management theory. In particular, our system does not measure the performance of policy implementation relative to clear and measurable objectives and then adapt accordingly. The panel is also not convinced that government has demonstrated a serious, and sustained commitment to applying science-based methods to implementing management policies for conserving and managing old forest.

   Significant recent examples of this are: in 2012, the Forest Practices Board conducted a special investigation resulting in six recommendations about tracking, monitoring, enforcing, and evaluating implementation of old growth management areas, and in 2013, the Auditor General conducted an audit to assess the effectiveness of key tools for managing biodiversity in BC. Although these investigations concluded there was a lack of adequate measuring and reporting within our current forest management system, little has changed as a result of those reports.

3. **Public Support:** Much of the public is not well informed or engaged regarding old forests and forest management. This appears to be contributing to a pervasive lack of supportive for the current system. We frequently heard from individuals, organizations and communities that they have no reliable source of information about the condition and trends in local forests, and little influence over decisions that directly affect them. Over the past several years, direct ongoing involvement of communities in forest management has declined. A lack of confidence in the system was also reflected in concerns about a lack of clear long-term priorities, inconsistent policies for land users, and a lack of government oversight.

Recommendations



Old Interior spruce forest.
Photo by Al Gorley

RECOMMENDATIONS

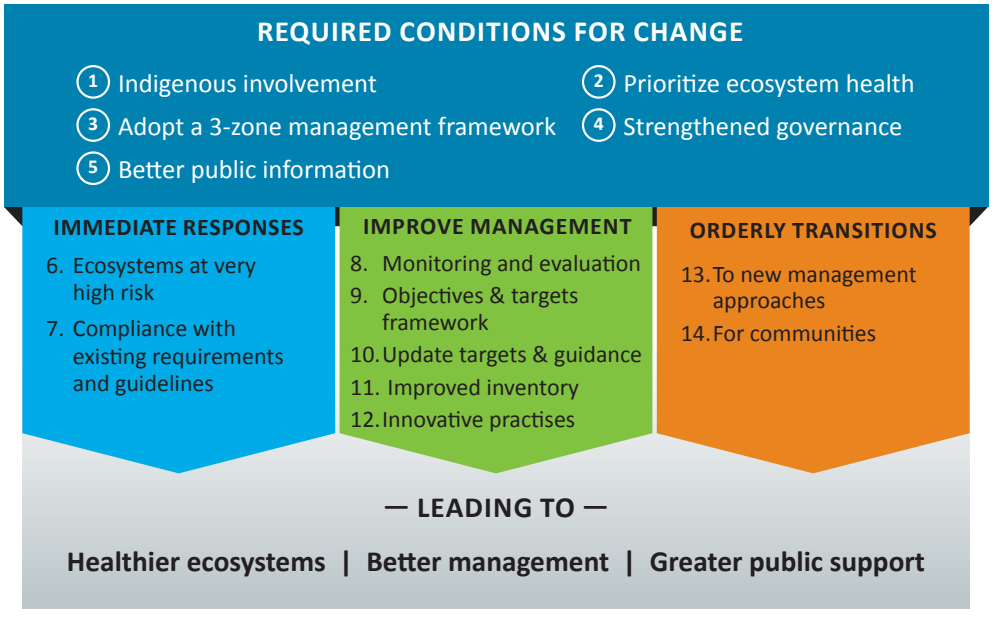
Our recommendations address the conditions we believe are needed for successful long-term management of old forests, the actions needed now to prevent irreversible loss of biodiversity, improvements to the management processes, and transition requirements to ensure change happens. The implementation advice supporting each recommendation is offered as a starting point for the government to consider, with the understanding that other approaches will likely emerge through dialogue with Indigenous leaders, input from stakeholders, and analysis by government staff.

Old forests do not exist in isolation. They are part of a complex ecosystem that has evolved over thousands of years. Similarly, our forest management system has also evolved over the long term, often in response to changing economic conditions and community needs. While we recognize that it is sometimes necessary to deal with a specific management component such as old forests, this must be done with the whole system in mind. To do otherwise would be a fundamental error. Therefore, our recommendations, although developed with a focus on old forests, by necessity extend to the broader forest management system in order to support healthy ecosystems, and by extension, healthy people, as well as old forests.

In our introduction, we identified a paradigm shift in the way we approach managing forests. We found widespread support for a new way of thinking during the engagement phase of our review. We believe that if our recommendations are implemented with this new paradigm in mind, they will be more likely to succeed, and will contribute to facilitating the desired paradigm shift over time.

As illustrated in the figure below, we have structured these recommendations to start with those that we believe are necessary to create the proper conditions for management of old forests in the future and important to ensuring the subsequent recommendations achieve their intended results for the long-term. The remaining recommendations focus on responding immediately to curbing biodiversity loss, improving the management system, and transition requirements. We believe that implementing these recommendations will lead to healthier ecosystems, better long-term land management and greater public support for forest management.

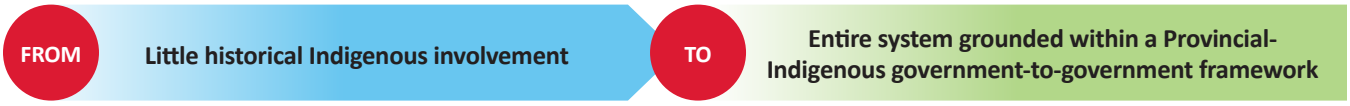
We recognize that these recommendations will be refined and adjusted through engagement with Indigenous communities and stakeholders, and with additional technical and scientific input.



Required conditions for change

1. Indigenous Involvement

Engage the full involvement of Indigenous leaders and organizations to review this report and any subsequent policy or strategy development and implementation.



Rationale:

The panel understands that Indigenous involvement is built into almost every provincial land-based activity, especially a policy review of this scale, however we feel it is worth reinforcing because it is essential to creating conditions for successful and sustainable implementation of both the shorter- and longer-term actions proposed.

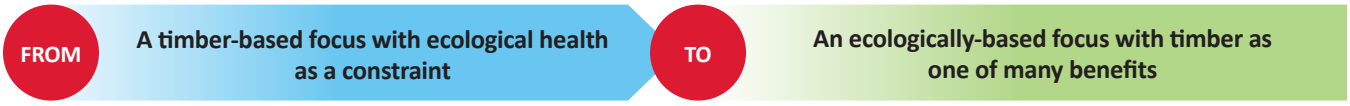
1. **Widespread support and expectation:** The panel heard support or acknowledgement of this priority from every sector and the majority of those who provided input to the panel.
2. **Legal imperative:** BC has legal consultation and accommodation obligations with respect to possible infringements on Indigenous rights, which is now even more strongly affirmed with the BC government's recent passing of the *Declaration on the Rights of Indigenous Peoples Act*.
3. **Social Imperative:** The Province has committed to a New Relationship where the Indigenous population has the opportunity to achieve the same economic, environmental and social societal goals as the rest of the population in the province.
4. **Environmental Imperative:** Recognizing Indigenous commitment to environmental stewardship, which has extended for millennia, many are looking to Indigenous communities for guidance on how to establish a land management regime that achieves a higher standard of land care.
5. **Address the Gap:** Indigenous peoples were not involved creating most of the higher-level plans and orders that dominate the management of old forests. This is a significant source of frustration among Indigenous communities and could also mean that most of these historic plans and orders do not conform to the Province's current legal consultation and accommodation requirements or DRIPA legislation.
6. **Sustenance Dependence:** Many Indigenous communities still depend on the natural resources of their traditional territories for a significant portion of their sustenance and livelihood.
7. **Practical Working Models:** Indigenous communities are becoming more active in most economic and management aspects of the forest sector and are leading many interesting and potentially valuable on-the-ground approaches to land stewardship and management of old forests.
8. **Develop Readiness:** Many Indigenous communities need support to develop their internal readiness to accept a leadership position in forest management and the Province also needs to build its internal readiness so that it can effectively participate in these new government-to-government relationships.

Implementation Advice:

1. As soon as practicable, engage provincial Indigenous governments in developing a policy response to these recommendations.
2. In collaboration with Indigenous leadership, develop provincial guidelines for implementation:
    a. Develop criteria for establishing government-to-government planning relationships between the Province and Indigenous groups, including appropriate involvement and associated criteria for third-party participation in these planning relationships;
    b. Establish planning units that conform to local Indigenous group's territories while still adhering to ecologically and administratively practical planning units; and
    c. Establish mechanisms for local Indigenous groups to meet provincial targets and standards for biodiversity protection, and ecosystem representation, etc.
3. Establish support programs for Indigenous groups to build their land/forest management expertise and capacity including:
    a. Direct support to establish G2G land management relationships in accordance with point 2.a above;
    b. Programs to support the development of internal management capacity; and
    c. Opportunities to share experiences among Indigenous groups.
4. Develop focused training for government staff to support the establishment of appropriate G2G relationships and develop provincial government capacity to meet its responsibilities under these relationships.

2. Prioritizing Ecosystem Health and Resilience

Declare the conservation and management of ecosystem health and biodiversity of British Columbia's forests as an overarching priority and enact legislation that legally establishes this priority for all sectors.



Rationale:

Conserving and managing old forests is a cornerstone of the Province's biodiversity conservation strategy. We believe that strategy has underperformed in several areas due to competing pressures.

1. Outdated Thinking: An overriding theme heard throughout our engagement phase was that we need to change the way that we think about our forests and that we need to preserve the integrity of our natural systems as much as possible, particularly the old forests component. Individuals with international experience and our own research on other jurisdictions indicate that this sentiment is consistent with global trends.

2. Focus on the right priorities: Managing forests in a way that does not unduly compromise timber supply puts our focus on the wrong thing. This treats ecosystem resilience and reducing biodiversity risk as constraints, which, over time, are constantly being eroded by compromises. Making choices about risk to biodiversity in return for another defined benefit might be a necessity but those choices need to be made with the overarching goal of maintaining ecosystem health in mind.

3. **Ecosystem Risk:** Several scientists project that under our current management strategy, much of the province, especially the areas covered with productive forest, will be in a high biodiversity risk situation in the near future. It is time to reorient and integrate the system towards an overarching priority that applies to all incursions in the forest, i.e., to maintain ecosystem health by managing biodiversity risk. Without this reorientation, we are losing old forests and possibly ecosystems that are non-renewable.

4. **Complete Implementation:** The original old forest management strategy contemplated a number of components that were never fully implemented or were addressed ad hoc, e.g., seral stage distribution, site series representation, landscape connectivity, and adaptive management, which has compromised the effectiveness of that strategy.

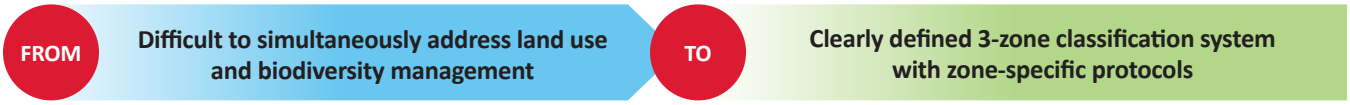
5. **Multiple Sectors:** There is only one land and every land-based sector has some potential to compromise that land, some to the point of undermining provincial ecosystem health goals, if they do not adhere to a common standard. Aligning all sectors towards an overarching goal improves our chances of achieving our ecosystem health goals, reduces conflict between sectors and fosters a common target for everyone involved.

Implementation Advice:

1. The province should declare that managing for ecosystem health and minimizing biodiversity risk are key priorities of its provincial land management framework.
2. This priority should be reinforced through overarching legislation that:
    a. Formalizes this priority and sets a broad framework to work towards that commitment (similar to the DRIPA construct);
    b. Includes principles that will guide the overall shift to this new framework, e.g.:
        i. Province-Indigenous government-to-government foundation;
        ii. Science-based;
        iii. Monitoring, evaluation and regular updates;
        iv. Planning and oversight involving a range of interests; and
        v. Accountability, particularly to the public; and
    c. Establishes a commitment to align all other land-related provincial legislation, management systems and processes to this overarching goal.

3. A Formalized Three-Zone Forest Management Framework

Adopt a three-zone forest management framework to guide forest planning and decision-making.



Rationale:

We believe that the Province can better focus its management efforts if it partitions the forest into three overarching and distinct management zones. The concept is already partially used to apply biodiversity emphasis zones for setting old forest targets but needs to be formalized and communicated. Other jurisdictions have moved in this direction to try and create greater certainty for both conservation and economic activities.

We suggest the following categories (the names can change but we feel their substance should remain relatively the same.)

1. **Protected:** These are forests that will be largely left alone, although there may be some management activities within them to maintain ecosystem health and manage risk from fire, disease or insects (depending on their designation and associated jurisdiction). One example of a Protected area that might allow some management activities are fire-maintained forests, where fire regularly removes the understory while maintaining the overstory. If fire is excluded from these areas and no other intervention is allowed, then they tend to become dense pockets of unhealthy forests that support the development of pest or pathogens or have increased susceptibility to catastrophic wildfire.

2. **Converted:** Converted forests are those that we have already or intend to change from their natural state to intensive management areas as industrial timberlands. Although these lands do not provide all the same services as old and ancient primary forests, they can still provide a number of important ecosystem services in addition to timber, such as water, recreation, carbon sequestration, wildlife, tourism, etc.), especially since many are close to communities. Conversion areas may have multiple objectives compatible with industrial timber production.

3. **Consistent:** These are forests and forest landscapes that are managed for ecosystem health and biodiversity risk by using planning and practises that result in forest landscapes that are reasonably consistent with the attributes of the original forests and forest landscapes. We recognize that we can never fully replicate what nature creates over time, but with careful management we can plan and use practises at a forest or forest landscape level that are reasonably consistent to what the original forest or forest ecosystem would have created.

The following are reasons that we feel that we need to move in this direction.

1. **Reduced confusion:** Despite the existence of land use plans, there is significant confusion or misperception about which forests should be managed for which goals, particularly outside parks and protected areas. Partitioning the forest, focussing on goals for each partition and having clear rules about if and when partitions can contribute to another partition's goals (e.g., protected areas contributing to ecosystem health) or when an area can move from one partition to another can significantly reduce this confusion.

2. **Reduced conflict:** Our current system also entrenches the idea that we need to either completely protect or allow use of an area. This all-or-nothing mentality oversimplifies management, does not allow us to focus on the right thing for the right area, fosters an "us versus them" behavior and ultimately narrows our focus as land stewards. To paraphrase an Indigenous Elder's perspective, "The reason that we create parks is because we don't trust ourselves to look after land." Many people expressed frustration about second growth forests that are managed like plantations because they think these forests should be more like their iconic undisturbed counterparts. Having them zoned as "Converted" provides clear direction on the goals for these areas and transparency for the public.

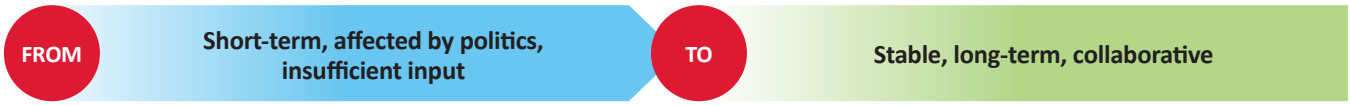
3. **More focused management:** We have forests that are already in the Converted category but we still try to manage them as part of an ecosystem to reduce biodiversity risk, we have forests that are protected for ecosystem biodiversity reasons but are promoting landscape ecosystem health problems because of our no-touch policy, and we have mixed biodiversity targets across the province which in many cases may not be able to achieve their intended ecosystem resilience goals because of their location and ongoing levels of disturbance.

Implementation Advice:

1. Use a collaborative process under the umbrella of a Provincial-Indigenous government-to-government framework to support ongoing designation of these areas.
2. Develop criteria for:
    a. Slotting parcels of land into each of the three management zones (e.g., Areas that are already under intensive management and in close proximity to population centers are high candidates for Converted Forests);
    b. How Protected Forests or Converted Forests might contribute to Consistent Forest objectives; and
    c. Moving areas from one zone to another.
3. Prioritize the designation process in management units (e.g., TSAs and TFLs) that have already logged a high percentage of their operable land and are facing the greatest risk to ecological and economic values. Areas with existing plans and legal orders like Clayoquot Sound, Haida Gwaii, and the Great Bear Rain Forest may be deferred from this process for now.
4. Where possible, coordinate the designation of forest areas with active land use planning, but do not wait for the renewal of land use planning to designate zones in high priority management units.
5. Where applicable, consider the implications to public safety and infrastructure (e.g., wildfire, floods).
6. In addition to the any other information required, support the collaborative decision-making process and stakeholder input by:
    a. Conducting objective, government-led multi-value assessments in remaining areas of primary old and ancient forest;
    b. Identifying special features (e.g., large, and unique trees or stands, unique ecosystems) that are close to communities and presently or foreseeably provide important recreational, cultural, spiritual, or educational opportunities; and
    c. Developing and analyzing various risk-benefit scenarios and options, including the probabilities.
7. Establish the zones formally through legislation.
8. Establish mandatory transition plans to implement changes on a scheduled basis, specific to the management unit(s) involved.

4. A More Inclusive and Stabilizing Approach to Governance

Adopt a more inclusive and stable governance model that gives local communities and stakeholders a greater role in forest management decisions that affect them.



Rationale:

British Columbia needs a forest management governance system that is more inclusive and grounded in the long-term vision of local communities in order to create strategies that are more consistent with long-term ecosystem timeframes. This is needed for the following reasons:

1. **Stability:** We are managing ecosystems that often take thousands of years to form with policies that can change based on election cycles. We have seen how frequent changes in priorities due to the ideologies of different governing parties can cause uncertainty and loss of continuity. Frequent changes in management direction and emphasis do not align well with most forest management activities. While changes will be inevitable, they should be based more on science-based adaptive management than short-term pressures. We believe the combination of collaborative management with Indigenous communities and formal ongoing participation of local communities, within a provincial science-based framework, can provide a stabilizing effect on policy by ensuring the local and provincial impacts of change are thoroughly considered and understood before decisions are made.

2. **Accumulation of Wisdom:** There is often high turn-over amongst forest managers, especially in government, and frequently the professionals working in a forest do not reside in local communities. This results in varying levels of knowledge about local forests and community interests and can put communities and forest managers at cross purposes.

   Managing forests to achieve a spectrum of community and provincial interests requires an understanding that benefits from local knowledge, continuity, and accumulated wisdom. Involving more people in the process of informing and making decisions increases the opportunity to retain and pass on knowledge.

3. **Proper Link to Public Policy:** Forest management has less to do with forests and more to do with translating pubic expectations around forests into policy that drives how we manage those forests. A governance system that more effectively integrates public knowledge and priorities also integrates a much closer link to support developing effective and timely policy.

4. **Public Trust:** The panel heard consistently from across the province that local communities do not have confidence that the government or large corporations will manage their forests properly, and that they want to better understand what's happening in their forests and be more involved in managing them. This was particularly true among Indigenous communities, many of whom are already assuming that role in their respective territories.

Implementation Advice:

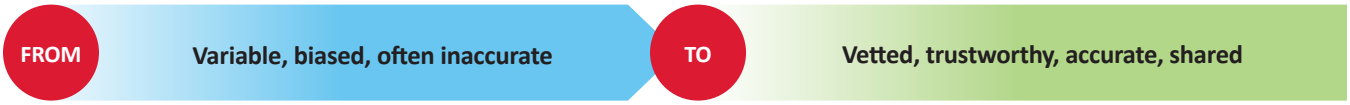
1. The governance system should exist under the umbrella of Provincial–Indigenous government-to-government relationships.
2. Redefine planning areas considering:
   a. Existing administrative boundaries, e.g., TSAs, LUs;
   b. Indigenous territories (likely multiple Indigenous groups in one planning area);
   c. Biogeoclimatic Ecosystem Classification (BEC) / ecosystem boundaries;
   d. Administrative practicality; and
   e. Other factors.
3. Establish local forest boards/planning tables that may be formalized through the overarching legislation described earlier (Recommendation 2).
4. Local forest boards for each planning area could include a range of groups, potentially including:
   a. Scientific experts;
   b. Land planners;
   c. General public;
   d. Resource professionals (foresters, biologists, ecologists, hydrologists); and
   e. All land-based sectors (e.g., mining, oil & gas, tourism, highways, etc.).
5. Responsibilities of local forest boards may include:
   a. Tailoring provincial goals and priorities to their planning area;

b. Monitoring adherence to and reporting on their region's status and progress towards provincial goals and priorities;
c. Overseeing transition to an updated management system;
d. Participating in and possibly overseeing implementation of regional land use planning processes;
e. Establishing and monitoring (possibly involved with approving changes) in regional partitions, e.g., Protected, Converted, Consistent; and
f. Supporting public reporting.

6. Provide local forest board with appropriate support to meet their responsibilities including:
   a. Mapping;
   b. Scenario development;
   c. Training & education of participants;
   d. Scientific methods; and
   e. Others?
7. Adopt formal Terms of Reference for each local forest board that conform the overarching legislation and provincial guidelines.
8. Although this recommendation has much broader application, it could be used as a mechanism to help implement other aspects of this report.

5. Public Information

Provide the public with timely and objective information about forest conditions and trends.



Rationale:

As we indicated earlier in this report, we frequently found local governments, organizations, and individuals that wanted to be better informed about the condition of old forests but were not sure where to go for accurate and objective information.

1. **Build Trust & Reduce Bias:** As stated before, very few people we heard from said they trust information regarding the condition of BC's forests. Many feel the information provided to the public around BC's forests is biased, regardless of its source.

2. **Reduce Polarization:** There are very strongly held views regarding how best to manage BC's forests and those views are largely based on where people are getting their information. Although opposing viewpoints may never be fully reconciled, we can reduce the level of conflict and improve the quality of dialogue with greater access to unbiased science-based information.

3. **Foster Engagement & Wisdom:** Having an informed public can foster increased public engagement and hopefully bring more wisdom and stability to the forest management process.

Implementation Advice:

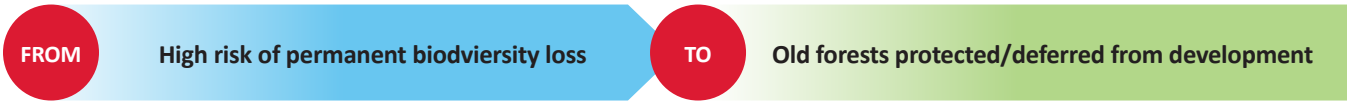
1. Provide the public with proactive reporting on forest condition through an objective, professional voice, free from political influence. Options for this may include:

    a. Formally expanding the role of the Forest Practices Board;
    b. Creating a statutory provision for independent reporting by a senior public servant with an ombudsperson-type role;
    c. Reporting through an independent scientific panel; or
    d. Establishing a new office.
2. Significantly enhance public reporting on forest conditions by producing regularly scheduled updates, including:
    a. Local scale reports, perhaps building on the Multiple Resource Values Assessment (MRVA) approach;
    b. Regional scale or value-themed reports (e.g., biodiversity), possibly by expanding the work already underway through the Cumulative Effects Assessment initiative; and
    c. Periodic Provincial Forest Condition reports (e.g., every five years).
3. Where available, utilize existing internal data gathering and analysis processes to inform reporting that is specifically aimed at the public.
4. Ensure reports provide context and relevant commentary to make them meaningful to the public. (Answer the contextual "so what?" question).
5. Have this new public reporting function provide an annual report on its activities and how it achieved its goals during that year.

Immediate Responses

6. Immediate Response to Ecosystems at Very High Risk

Until a new strategy is implemented, defer development in old forests where ecosystems are at very high and near-term risk of irreversible biodiversity loss.



Rationale:

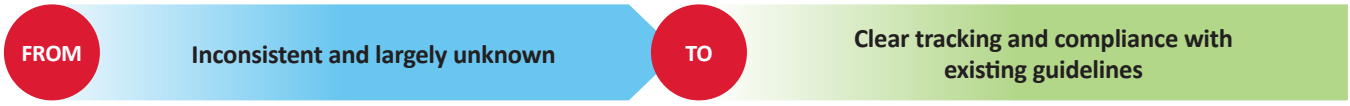
There are some areas of the province where failure to act now could lead to the permanent loss of rare or unique ecosystem components contained in old and ancient forests. Many of these areas are the primary subject of a public call for protection of old forests. They tend to be iconic stands in relatively close proximity to public access or population centers and have a number of other economic, ecosystem services and intrinsic values that are important to a wide range of the general public. A system of new, more sustainable, and effective approaches to managing biodiversity and other old-forest values will take some time to fully develop and implement. In the meantime, any of these stands that are intended for harvesting or other significant disturbance should be deferred from development.

Implementation Advice:

1. Act on this recommendation as quickly as possible.
2. Use the information already compiled by FLNRORD staff, supplemented by other information available in the scientific community, to identify the ecosystems at highest risk to permanent biodiversity loss.
3. Consider the following old forest areas (and possibly others) for short-term deferrals:
    a. Any BEC variant with less than 10% old forest remaining today;
    b. Old forest in any BEC – Landscape Unit combination that has less than 10% old forest today;
    c. Ancient forests (e.g., forests >500 years on the coast and wet ICH) and forests > 300 years in ecosystems with higher disturbance intervals);
    d. Areas with a high potential to contribute towards larger ecosystem resilience; and
    e. Areas with a Site Index of >20m.
4. Determine which of those areas are subject to harvesting or other significant disturbances within the next two years. We would expect the FLNRORD staff to have this information or be able to collect it from licensees.
5. Establish a prioritized and spatialized list of potential deferral areas and verify them on the ground and with recognized experts.
6. Use various mechanisms as needed for deferrals, for example:
    a. Instruct BCTS to cease development and defer selling timber in the areas;
    b. Request authorized tenure holders to voluntarily defer development;
    c. Decline to authorize new permits or licences in deferral areas; and
    d. If necessary, establish regulatory provisions and incentives to enable deferrals.
7. Carry out an economic impact analysis of deferrals.
8. Establish a fair and equitable process to mitigate economic impacts to holders of small area-based timber tenures (e.g., replacement area or compensation).
9. Provide a public progress report on how these priority areas have been addressed at the end of the first year after this report.
10. After two years, confirm which temporary deferral areas will be subject to protection or further management measures.
    a. For each identified area, determine whether biodiversity conservation requires full exclusion from development or special management.
    b. Establish legal protection for areas confirmed to be critical for biodiversity conservation.

7. Compliance with Existing Requirements

Bring management of old forests into compliance with existing provincial targets and guidelines for maintaining biological diversity.



Rationale:

The existing targets for retention of old forest reflect policy decisions that balanced risk to biodiversity with economic considerations more than two decades ago. While we feel these should be revisited

and updated to reflect current circumstances (see recommendation 10), we have been shown by government staff and scientists that some regions are below the approved targets, and at higher biodiversity risk than current policy allows. We also learned that some of the existing provisions are not enforceable because legal commitments are vague and an approved FSP takes precedence over discretionary decision-making.

1. **Reputation:** The province's reputation as a forest land steward is at risk if it has failed to comply with or enforce its own legal orders and targets, even if this is largely because it didn't implement an adequate system to track those targets. This is not about effectiveness or changing management approaches – it is simply about knowing what is happening and taking corrective actions.

2. **Unknown Compliance:** Although there are existing guidelines and legal orders and targets for protection of old forest, we don't have an adequate system of tracking compliance with, and enforcing those requirements.

3. **Urgency:** Many of the existing targets already reflect a negotiated compromise, where a high risk to biodiversity was accepted in favour of economic benefits. These targets are already below scientifically accepted minimums and failure to achieve them increases the risk of moving into critical biodiversity risk situations and possible irreversible losses.

4. **Setting a Base:** An accurate assessment of where we are at with respect to our targets and how we are managing OGMAs now is essential to future decision-making.

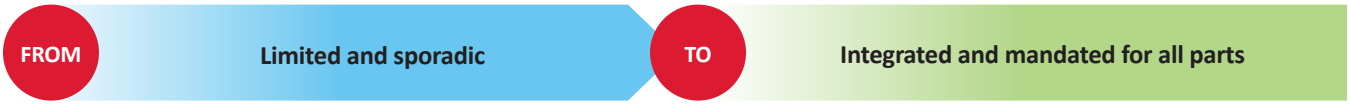
Implementation Advice:

1. Determine a schedule for completing this work starting with priority areas, e.g., Kootenay, Vancouver Island and Central Interior regions, moving towards less urgent areas over time, e.g., Muskwa-Kechika, Haida Gwaii, Clayoquot and the Great Bear Rain Forest.
2. Using the current work occurring under the auspices of the Cumulative Effects Assessment initiative (e.g., October 2018 Biodiversity Analysis for Arrow and Kootenay) as an example or template, complete an evaluation for all priority regions of the province by the end of 2020 and the entire province by the end of 2021 to answer the questions:
    a. Are legal targets being met with the OGMA layer?
    b. Is there enough old forest to meet aspatial old seral targets?
3. Where the analysis shows non-compliance, take the necessary steps to bring the area into compliance as soon as practicable, including:
    a. Deferring development in any BEC variant/Landscape Unit/Site series old forests that are below targets (including existing development permits);
    b. Amending OGMAs where necessary to ensure that they contain old forest, have enough area to meet both mature and old targets, and are adequate (functional shape, size and level of incursions);
    c. Clarifying, strengthening, and standardizing the OGMA amendment requirements and procedures;
    d. Ensuring the provincial government has the necessary tools (tracking and regulatory) and capacity to enforce the requirements.

Improve Management

8. Monitoring and Evaluation

Establish and fund a more robust monitoring and evaluation system for updating management of old forests.



Rationale:

There is little value in setting objectives and targets if they are not monitored. Without monitoring we cannot know if they are being complied with or if they are effective. We heard from nearly every region of the province that there has been no formal monitoring plan for old growth management, even though the guidelines have been in place for more than two decades.

Sound, science-based management requires monitoring and evaluation of results. It also establishes the basis for adapting to what is learned, and to changing circumstances, which is especially important in view of the current pace of environmental change. Public confidence requires reporting and acting on those results.

This is a significant and relatively straightforward opportunity to improve management and demonstrate excellence.

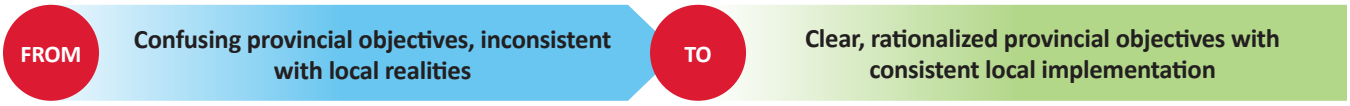
Implementation Advice:

1. Adopt a formal management discipline, such as adaptive management or continuous improvement, as the underpinning to monitoring, evaluation and update, but do not stall implementation of this objective choosing and adopting a discipline (note that scientists are generally more familiar with the adaptive management methodology).
2. Ensure that this system includes the core elements required for success, i.e.:
    a. dedicated research function;
    b. dedicated monitoring function;
    c. link to operations;
    d. regular updates; and
    e. objectivity.
3. Publicly report on activities undertaken in response to previous recommendation to update the monitoring and evaluation of old forests such as the FPB (2012) report and the assessments underway through the Cumulative Effects Framework, as soon as practicable.
4. Establish a dedicated organization, possibly building on the existing FREP program by expanding its mandate and resources to:
    a. Monitor implementation of and adherence to old forest orders, targets, and guidelines on an ongoing (scheduled periodic) basis across the province;
    b. Evaluate the effectiveness of old forest (and seral stage) management at all scales; and
    c. Update the management system for old forests based on the latest research and effectiveness audits on a periodic basis, e.g., minor updates every two years, major updates every six years.

5. Integrate government and external scientists, operations specialists, management experts and other specialists into this system to support information gathering and analysis, evaluation and providing options for updating the system.
6. Continue to develop and utilize standardize protocols for monitoring and evaluation of both compliance and effectiveness at achieving objectives (which may be multiple, including socio-economic).
7. Establish and maintain strong linkages between monitoring and evaluation results, research and inventory priorities, innovative practices trials (discussed elsewhere), periodic updates to practise guidelines and public reporting. This can be achieved through:
    a. Information protocols;
    b. Clear decision processes, authorities, and timelines; and
    c. Others means.
8. Use the information collected from this system to enhance public reporting of results and management responses (also see recommendation on forest condition reporting).
9. Ensure that regional planning tables drive regional reporting.

9. Setting and Managing Objectives and Targets

Establish a standardized system and guidance that integrates provincial goals and priorities to local objectives and targets.



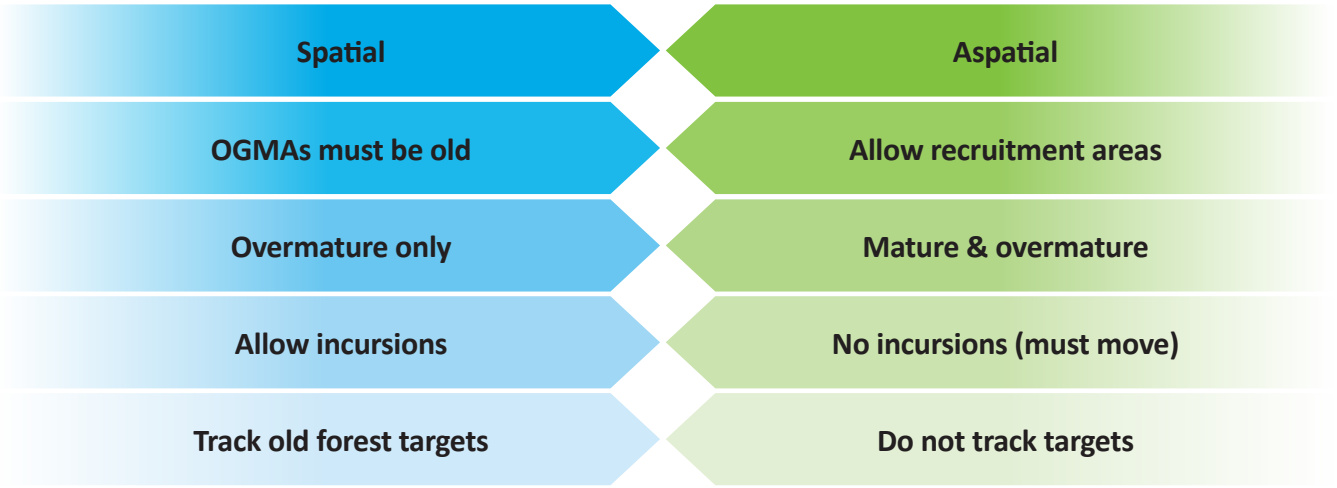
Rationale:

1. Local flexibility within a clearly defined framework: The current management system for old forests is applied inconsistently and often ineffectively across the province and is not achieving its original intent. Many areas have different methodologies, often arising from a higher-level plan, e.g., CORE, LRMP, or when they were applied. The figure below illustrates some aspects of the variation across the province. Local areas want flexibility and feel that the current system often sets inflexible rules that do not work in their local situation. However, almost all local areas did recognize (and support) that their local management strategies had to conform to some larger objectives and in a manner that allows the Province to track how each area was conforming and contributing to these larger objectives.

2. Changed circumstances: The original guidance for the management of old forests set out in the Biodiversity Guidebook and the Landscape Planning Unit Guide two decades ago were not fully and consistently implemented. Since that time, some ecosystems have been heavily disturbed, circumstances have changed due to climate change, and risk to biodiversity has increased. The introduction of FRPA in 2002 reduced the ability of government managers to directly control and coordinate activities on the landscape, and many current managers and professionals were not involved in the creation of the current guidance and likely don't fully understand its intent.

3. **Incorporate what has been learned:** Many managers expressed frustration because they feel the OGMA approach is not working and that many OGMAs are ineffective and sometimes managed inconsistently with natural forest processes (e.g., Interior Douglas Fir NDT 4, where lack of management is resulting in a considerable increase in the risk for insects, disease and catastrophic wildfire). These managers need support to have an informed voice in the system, which will in turn make the overall system more effective. We have also seen modified approaches taken in some regions, such as the Great Bear Rain Forest and Haida Gwaii, which can inform update provincial approaches.

4. **Consistent Implementation:** A new government policy that prioritizes conservation and management of forest biodiversity will require the existing guidelines to be adjusted, and implementation of some of the original intent to be reinforced. Having an operational framework that regularly provides the latest guidance to front-line workers and effectively engages those workers in developing this new guidance, helps to ensure that the management of old forests is implemented consistently across the province on an ongoing basis. The following illustrates a sampling of the range of OGMA approaches.



Implementation Advice:

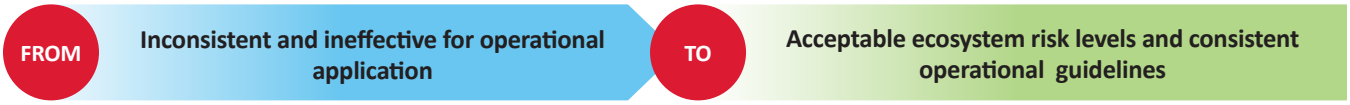
1. Clearly define and communicate the government's overarching objective(s) and priorities for the management of old forests in guidance or standards that provide:
    a. clear direction on the intent; and
    b. provide flexibility for local adaptation.
2. Establish a scientific and technical panel to provide oversight and advice to developing updated guidance, including government and external experts, and incorporating operational knowledge and experience.
3. Establish a scheduled review and update process for guidance.
4. Review the Biodiversity Guidebook (1995) and the Landscape Unit Planning Guide (1999) and determine whether it would be better to update or replace them. In doing so, decide where and how to place:
    a. Biological diversity: Should be addressed for the whole landscape, including seral stage distribution and grasslands; and
    b. Old forest: Focus on categories of old, ancient, and rare forests and the various values and objectives assigned to them.
5. Provide for consistent processes and administrative requirements across the province, while accommodating the diversity of ecosystems, disturbance history (natural and anthropogenic), and community values, e.g.:

a. Reporting requirements, i.e., content, geographic unit, timing;
b. How to buffer for unplanned events, e.g., wildfire, disease pests, slides, etc.;
c. Assign clear objectives to every OGMA);
d. Consistent, rigorous, objective and transparent processes for assessing options, including risk to ecological values and economic costs and benefits; and
e. Adopt a standardized, responsive process for amending (moving) spatial designations.

6. Incorporate an extension and education component tailored to practitioners, managers, and decision-makers.

10. Update Biodiversity Targets and Guidance

Update the targets for retention and management of old and ancient forest.



Rationale:

Implementation of the aforementioned recommendations will ensure we are meeting current targets, establishing a more inclusive and informed governance process and providing updated guidance to managers. Establishing the recommended overarching commitment to ecosystem health will also require us to update our retention targets and improve our guidance for retention and management of old forests.

1. **Ecosystem Health:** Scientific research provided to the panel projects that almost all of the province's most productive forest ecosystems are, or very shortly will be, in a high biodiversity risk scenario and the rest of the ecosystems will move into a similar situation under the current old forest policies and practices. This will result in lower ecosystem resilience, loss of species and compromised ecosystem services in many areas.

2. **Use Best Science:** Developing new guidance is of little value if it is not incorporated into both our targets and practices. Current targets have been in place for up to 25 years and no longer reflect today's reality. It is time to reset them to incorporate the latest research and practises and recognize the impacts to old forests that have occurred in the intervening time.

3. **Shifting Paradigm:** The survey conducted as part of our review and the panel's outreach process suggests there is widespread support for conserving and maintaining biodiversity and other old forest values. Many argue that increased retention of old forest is necessary to achieve this, and to provide a buffer against uncertainty. We heard concurrently the sentiment that families and communities that depend on harvesting and manufacturing timber from old forests need to be considered in any change.

4. **Conserve Future Options/Choices:** Very old and ancient primary forests have evolved over a long time, including some that have not experienced significant stand-replacing events. As a result, these forests are repositories of biota and process we may not even know or understand. This makes them an extremely important buffer against species extinction, climate change, and lost future opportunities. Many of these irreplaceable forests are in the THLB and are subject to harvesting. Harvesting them would mean their inherent value and future options will also be lost.

Implementation Advice:

1. Re-evaluate the assignment of biodiversity risk in light of overarching commitments to ecosystem health and managing biodiversity risk.
    a. Develop a schedule that prioritizes areas where we have the greatest risk to biological diversity under the current targets and management regime.
    b. Utilize information and advice from evaluation work and updated guidance to inform implementation.
    c. Formally incorporate the importance of very old or ancient forests and ecosystems by adding new classifications and specific management targets and guidelines.
    d. Be specific about whether the objectives of each area identified are required to be left undisturbed or managed to maintain attributes.
    e. Address connectivity and multiple-scale objectives.
2. Where there is a deficit of old forest necessary to meet the updated targets, incorporate a formal recruitment strategy.
    a. Conduct analysis of the expected socio-economic benefits and costs, both short and long term.
    b. Involve local communities in making decisions and choosing options.
3. Verify that OGMAs have the intended attributes through LIDAR, ground-truthing, or other means.
4. Adopt a standard set of provincial guidelines for OGMAs in each OGMA category as illustrated in the figure below.

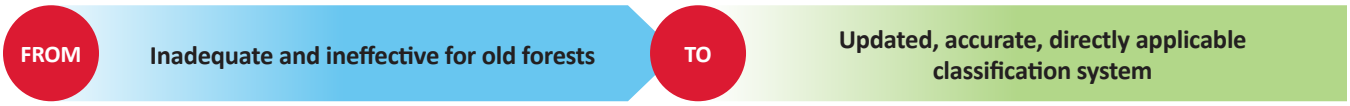
OGMA GUIDELINE CONSIDERATIONS

1. What is an old forest (OGMA), i.e., must be old, must be big, etc.
2. Guidelines for the size and shape for old forest areas to achieve the objectives of that area.
3. Types of management activities that are allowed in those areas, e.g., stand treatments to maintain NDT properties.
4. Incursions — when allowed, what type of incursion.
5. Requirements for unavoidable incursions (e.g., need replacement areas).
6. How to move an OGMA.

5. Eliminate generalizing, including ensuring that Protected and Conversion zones (see recommendation 3) are allocated to the proper BEC/LU/SI category.

11. Inventory and Old Forest Classification

Improve the mapping and classification of old forests to recognize multiple values.



Rationale:

1. Refine Guidance: The current system uses age class as a proxy for old forest — over 140 years in the interior and over 250 years on the coast. Only using age class does not recognize the inherent complexity in old forests and the range of values that they contain. We cannot separate whether an area was categorized as an OGMA because of its biodiversity, spiritual, recreation or other values and

it is very difficult if not impossible to set parameters on how to manage the area to protect its values. Even full protection can fail if the value being protected requires some level of intervention, e.g., maintaining structure in old fire-maintained ecosystems.

2. **Recognize Variation:** The mature and over-mature age classes were created from a timber perspective and are valuable from that perspective, however, these age classes need to be further refined when managing for genetic or biological diversity. A 250-year-old Douglas Fir stand that has regrown after a disturbance is completely different than a 250-year-old Douglas Fir stand in a 3,000-year-old undisturbed ecosystem in terms of genetic, scientific, ecological, ecosystem function and intrinsic values.

3. **Protect Values:** Our current classification does not allow us to identify important values that we may all want to protect. It is impossible to differentiate between an area that has old big trees that has value for recreation and some minor habitat from another area that contains ancient genetic material that may help save landscapes or contain cures for diseases that help save mankind, or have critical habitat necessary for the survival of an important species.

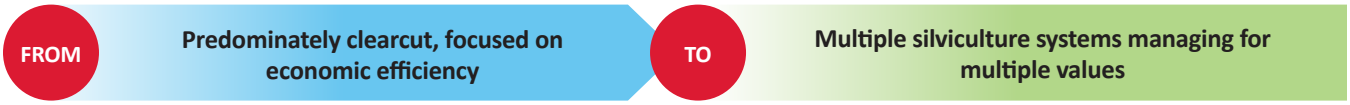
4. **Improve Management:** The quality and even existence of forest and BEC mapping in the province is highly variable ranging from very good (not excellent) to poor or non-existent. While this mapping has improved over time, most OGMAs and strategies for the management of old forests were implemented 25 years ago when much of this information was of a much poorer standard. Numerous errors have been found where old forests that were incorrectly labeled or mapped or in some cases don't even have old trees. Some regions have undergone adjustments, but many areas still have poor information or haven't updated their old forest strategies to the new information.

Implementation Advice:

1. Refine the Province's Natural Disturbance Types (NDTs) to a finer classification system. For example, one submission said that there could be as many as 8 refinements to fire regime NDTs.
2. Work with a team of inventory and habitat mapping specialists and scientific experts in the management of old forests and classification to develop a new classification system for old forests.
    a. It might be something like habitat mapping, i.e., considers a number of factors to assign a classification.
    b. Refine the OGMA name to reflect the objective, e.g., biodiversity, iconic, ancient, recreation, spiritual, etc.
3. Add new age classes to the current inventory system.
    a. Recommend 250-500 years, 500-1,000 years and 1,000 years plus (confirm these new age class definitions with old forest experts).
4. Refine mapping of all old forest in the province:
    a. 100+ years for the interior, 140+ years for the coast;
    b. Do at a relatively detailed level;
    c. Ideally this would adopt the use of LIDAR for these areas; and
    d. Continually verifying that OGMAs have the intended attributes through LIDAR, ground-truthing, or other means.
5. Establish a program with industry to acquire their inventory information for public use.

12. Innovative Silviculture Systems

Create a silviculture innovation program aimed at developing harvesting alternatives to clearcutting that maintain old forest values.



Rationale:

1. **Improve Acceptance:** The clearcut (including clearcut with reserves) silviculture system is the mainstay of the BC forest industry because, as numerous industry representatives told the panel, it is the most cost-effective. However, this system is also the most contentious because it often significantly compromises many other values on the land (e.g., biodiversity, tourism, Indigenous sustenance use) and many ecosystem services. Most of the communities, local governments, local organizations and citizens we interviewed from across the province told us they were frustrated that their landscapes were being cleared, their local values were being compromised (particularly water supply) and they were getting little or no local return or compensation for these impacts. Areas that used gentler silviculture systems to mimic NDT patterns or enhance ecosystem services (e.g., water retention, visual, and habitat), were generally deemed more acceptable.

2. **Ecosystem Heath:** Managing for ecosystem health and low biodiversity risk requires maintaining a percentage of the ecosystem in as close to its original state as possible, but very few of BC's NDTs yield stands look or function like clearcut systems. Even the fire-dominated northern NDT 3 areas (frequent stand replacing events) yield landscapes that are a mixture of species, standing dead and live trees and varying structure. Managing for attributes that mimic the NDT type can support ecosystem health at a stand and a landscape level plus preserve the integrity of many ecosystem services.

3. **Increase Access:** Using silviculture systems that are more gentle and manage for multiple values are generally more acceptable to the wider public because they tend to be gentler on the land, have a higher chance of protecting important community ecosystem services and result in forests that are more appealing because they look more like the pre-harvest forests. As the public gains trust with these systems, they should generally become more amendable to timber harvesting thus increasing access to the forest land base.

4. **Reduce Conflict:** In much of British Columbia, the forest industry has played out as clearcut or no-cut, often with little attempt to manage for multiple values. This tends to foster an all or nothing approach, i.e., allow or don't allow industrial activity, which leads to tensions and compromises that may not be necessary if more balanced options were available. The variable retention system used on parts of the Coast starts to move away from this hard distinction, as do selective systems in the Interior Douglas Fir zone. While conventional clearcut harvesting (with appropriate measures to protect water, soil, and critical habitat) may still be appropriate in a few areas (e.g., second growth plantations), other approaches are needed to achieve additional public objectives across the land base.

5. **Operational Efficiency:** There are pockets that use, and there have been sporadic attempts at creating, silviculture systems that manage for multiple values and are more acceptable to the public, but they generally didn't get the appropriate support, have a longer-term program framework and/or become adopted a wider scale. Having a dedicated program that designs, operationally tests,

measures, and reports on silviculture systems aimed at optimizing a suite of ecological and socio-economic objectives at an operational level increases options available to forest managers.

6. **Increase Overall Returns:** The current clearcut systems preserve relatively few valuable ecosystem services. There are examples of alternate systems such as Interior Douglas Fir on dry sites, where continuous shelterwood systems are needed because clearcut sites are generally too hot for seedling survival. Due to climate change, this same condition may also be true of Cedar-Hemlock sites in the near future. Alternate silviculture systems tend to preserve more of the inherent ecosystem services (e.g., Shelter for seedlings, filtered water, cooler streams for fish, carbon storage, habitat), make the area more conducive for other forest sector businesses, and reduce mitigation costs for other sectors, all of which in turn tend to increase overall net returns from those areas.

Implementation Advice:

1. Implement a program that supports a collaboration of industry, operations practitioners and scientists to develop and implement a set of silviculture systems that are cost-effective and maintain or enhance other values, e.g., maintain each NDTs old forests as close as possible to their inherent states, water retention, habitat, etc.
2. Develop partnerships with:
    a. Other governments (e.g., Forestry Canada and Indigenous);
    b. Existing research organizations (e.g., FP Innovations, universities, non-profits);
    c. Forest licensees (especially community forests and other area-based licensees);
    d. BC Timber Sales program;
    e. Local governments and water purveyors;
    f. Wildlife management programs;
    g. BC Climate Action Secretariat; and
    h. Other potential public and private sector collaborators.
3. Test a series of silviculture systems and variations to achieve the previous goals, i.e., manage old forests to effectively achieve a defined suite of values and objectives, recruit and encourage old forest attributes where required to meet long-term objectives; and demonstrate and encourage new practises.
4. Once tested, make these proven silviculture systems the default requirement for each NDT and/or ecosystem type and provide clear guidance on when these systems might be varied because of local operational constraints.
5. Ensure that there is support for operations to effectively utilize these systems, such as:
    a. Facilitate communication and collaboration across jurisdictions and disciplines;
    b. Facilitate knowledge transfer to practitioners;
    c. Involve local residents and stakeholders; and
    d. Ensure that the stumpage system provides appropriate offsets to cover extra costs.

Orderly Transition

13. Transition Planning at the Provincial and Local Levels

Once developed, implement the new policies and strategies for the management of old forests through mandatory provincial and local transition plans that define, schedule and monitor the process.

Rationale:

1. **Credibility**: Past attempts at changing the management system for old forests have not been as effective as they could have been because they lacked formal implementation plans, comprehensive implementation, appropriate resourcing and effective public accountability mechanisms. In light of this history, there is significant skepticism about this current Old Growth Management review process. This can be mitigated to some degree by planning for results with mandatory, publicly accountable transition plans.

2. **Avoid Unnecessary Harm**: In the absence of mandatory, publicly accountable transition plans, history has shown us that we tend to fall back to old habits, further compromise ecosystem health, continue to impact other forest values and create more negative socio-economic impacts.

3. **Proactive:** The primary forest is finite and diminishing, and each area's transition requirements vary depending on how much primary forest currently exists, economic conditions (expansion or contraction of the THLB) and land-use decisions. Areas that proactively plan for this transition generally have more options than areas that only react to the situation when they run out of available timber.

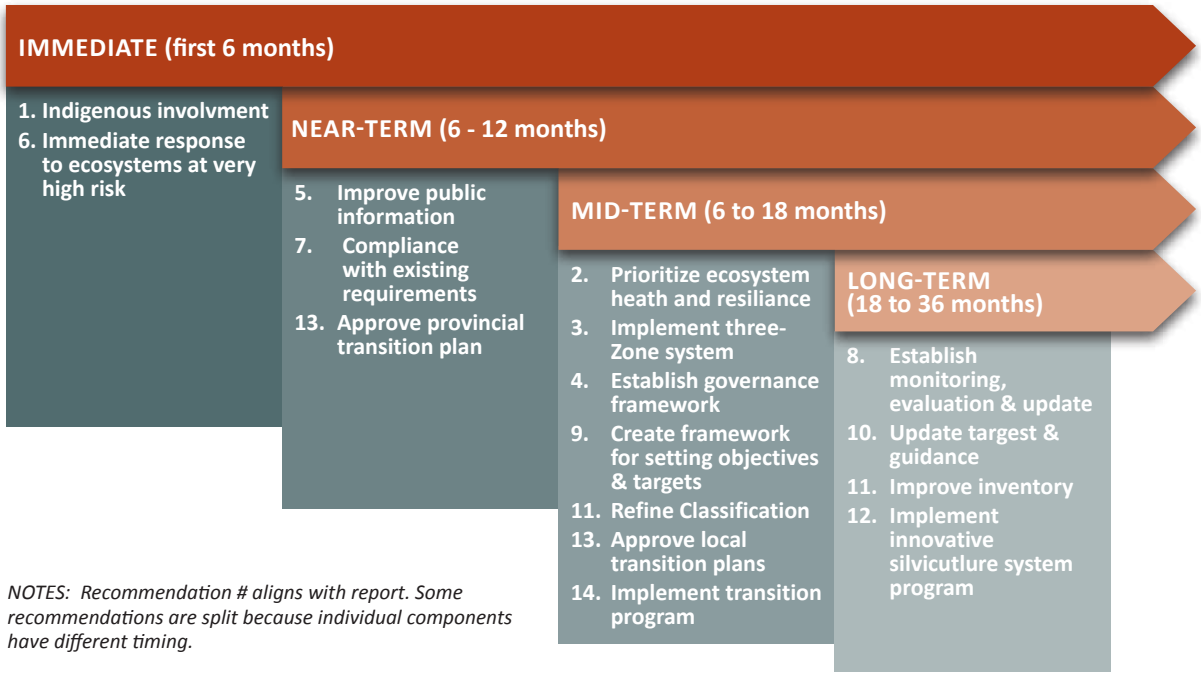
4. **Stability:** At a larger scale, these transitions are attempting to address destabilizing events, but it is possible to provide some level of stability by proactively planning ahead, being accountable for achieving targets in mutually supported mandatory plans and having the ability to adjust those plans as circumstances evolve. These parameters improve an area's ability to adjust their trajectory and work their way through inevitable economic cycles.

Implementation Advice:

1. Recognize that transitions will occur at:
    a. The provincial level from the resultant old forest policy and strategy that will arise from these recommendations; and at
    b. The local level from:
        i. Deferrals and long-term strategies to address immediate threats to ecosystems;
        ii. Moving to compliance with current biodiversity targets; and
        iii. adopting updated biodiversity targets, OGMA guidelines and practices.
2. Immediately engage Indigenous leadership at the appropriate level (provincial and/or local) in each of these transitions (this includes developing a quick response plan to recommendation #6).
3. Review the government's internal organization to ensure that the strategies and priorities for management of old forests will be successfully implemented:
    a. Inter-ministry accountabilities, authorities, and coordination;
    b. Clear cross-government priorities and direction to staff;

c. Adequate staffing and resources;
d. Support for the new planning systems; and
e. Effective multi-disciplinary processes.

4. Develop and formally approve an overall implementation plan that will accompany the provincial old forest policy and strategy that will result from this report's recommendations. Implementation recommendations include:
   a. Done under a Province-Indigenous government-to-government umbrella;
   b. Needs to engage various government, scientific, operational and planning experts; and
   c. Should include a clear schedule (the following provides an overview of the panel's view on prioritization and broad scheduling of the recommendations in this report).



NOTES: Recommendation # aligns with report. Some recommendations are split because individual components have different timing.

5. Provide for local transition plans in legislation (perhaps initially in FRPA and the Old & Gas Activities Act, but eventually in the new proposed overarching legislation).
   a. Make transition plans a mandatory consideration in AAC determinations by including a new clause in the *Forest Act* Section 8(8)(a).
   b. Provide direction and authority to statutory decision makers to consider the impact of authorizations on the objectives of a transition plan.
6. Develop government-led local transition plans on a scheduled, prioritized basis.
   a. Begin immediately in management units with the:
      i. Highest risk to biodiversity;
      ii. Most constrained timber supply (hard to find the AAC); or
      iii. High public values in the primary forest that are not compatible with conventional timber harvesting.
   b. Complete remaining plans in conjunction with scheduled TSRs.
7. Recognize the unique ecological, social, economic, and timber supply circumstances of each management unit and its dependent communities and develop a plan specific to its needs.
   a. Develop implementation plans collaboratively with the most directly affected communities.
   b. Recognize and address the potentially disproportional impact on small area-based tenures.
   c. Conduct a realistic assessment of economic diversification opportunities and options, including the time required to realize them, and the probability of success (could be value-added manufacture of wood products, botanical forest products, tourism, and commercial recreation, etc.). Ensure they are viable options — not just ideas.

d. Assess the opportunities/suitability of the forest to alternative silviculture systems outside the Converted zone.
e. Assess timber operations' dependence on old forests for economic viability and possible transition to second growth.

8. Review the stumpage system to evaluate: the true direct and indirect costs and effects of silviculture systems that are carried out; its effect on the Province's ability to meet biodiversity targets and other established old forest objectives; and its effect on potential silviculture innovation.
9. Explore the potential of a land acquisition fund to enable the purchase of land or covenants to retain or recruit old forest in ecosystems at high biodiversity risk, or otherwise of high public interest.
10. Report publicly on implementation of transition plans.

14. Transition Support for Communities

Support forest sector workers and communities as they adapt to changes resulting from a new forest management system.

Rationale:

1. Proactive versus Reactive: There are already a number of areas in the province that are facing significant economic restructuring because they are at or near the point of diminished timber supply. It is much better to be proactive and manage this transition when we still have options versus reacting to a crisis when it is upon us, e.g., a mill shutdown.

2. Local Dependence: The importance of the forest sector to the economy and social well-being of the province as a whole is diminishing but still important. This broader picture belies the fact that there are still a significant number of local areas that are highly dependent on this sector and any transition away from a timber-based economy will drive deep into the core and possibly even the economic survival of those areas. Those communities will need support to reform themselves now and develop other options while they still have choices.

3. Fairness: We live in a society where the generally accepted convention is to support communities that bear a disproportional share of the negative consequences from broader societal decisions. The support we provide them should be sufficiently substantive to meaningfully mitigate the effects of those consequencess.

4. Foster Confidence: There is a tremendous amount of local uncertainty and lack of confidence within the timber sector, and it is too late to pretend that things are fine or to try to avoid the inevitable shortages of timber. Areas that are facing economic changes are generally aware that negative changes are coming, and they need support in planning a scheduled change. This will help foster confidence and support for the larger system in those areas.

5. Improve Local Economies: There are still forest-based economic options that can be realized in many areas. On their own, these options may not offer the same level of local employment or economic spin-offs as the timber sector in the short-term, however they may be much more sustainable in the long-term. There are still probably significant opportunities for continued local timber sector benefits if new innovative systems can be used.

Implementation Advice:

1. Require a socio-economic transition plan for every area where the forest transition plan may result in a higher negative impact than a defined threshold to local, regional or provincial social and economic values.
2. Provide adequate funding for plan implementation, including:
    a. Capacity to investigate and facilitate local and regional economic opportunities;
    b. Bridge financing assistance for businesses;
    c. Workforce adjustment; and
    d. Conservation funding (e.g., carbon, biodiversity).
3. Develop and implement policies and programs aimed directly at promoting local manufacture, especially for value-added specialty and high-value products.
4. Develop and implement policies and programs aimed directly at generating sustainable economic benefits from forest-focused tourism, e.g., Improved access, facilities and interpretation for visiting big trees and unique ecosystems (e.g., Similar to Cathedral Grove, Ancient Forest Recreation site etc.) and other non-timber forest businesses.
5. Review existing administrative practices, including the stumpage system, to ensure they do not inhibit local economies.

Spruce –Lady fern-Oak fern ecosystem.
Photo courtesy Deb MacKillop.

In Closing...

High-elevation old forest in Babine Mountains near Smithers.
Photo by Al Gorley

IN CLOSING…

Our strategic review of the management of old forests led us to conclude that despite the good intentions and efforts of many people, including government personnel associated with forest management development and implementation, the overall system of forest management has not supported effective implementation or achievement of the stated public objectives for old forests. This has not come about because of any one group or decision, but by a pattern of many choices made over several decades, within an outdated paradigm.

Our current system of forest management emerged in the middle of the of the 20th century, when the provincial policy was focused on generating economic wealth and "building the province" by monetizing the vast natural supplies of timber and converting them to tree farms. Only later, especially through the 1990s, did conservation and management for ecological values across the landscape receive serious attention. Since that time, a great deal of effort has gone into creating protected areas, planning for multiple uses of forest lands, and designing systems to manage forest practices that respect a range of values including biological diversity. The underlying timber policy remained oriented toward a sustained yield of timber but was now somewhat constrained by these new policies and practices.

Our ever-expanding understanding of forest behavior and management, as well as the effects of climate change, have made it clear that we can no longer continue to harvest timber and manage forests using the approaches we have in the past while also conserving the forest values we cherish. We therefore have to be honest with ourselves and collectively and transparently make the difficult choices necessary to ensure future generations of British Columbians can enjoy and benefit from our magnificent forests, as we have done.

Recently planted woodlot near Port Hardy.
Photo by Trevor Pancoust

Old dry pine forest in the Interior.
Photo by Al Gorley

Forest Stewardship Within Pacheedaht Territory
Pacheedaht Chief & Council, Port Renfrew, BC
April 12th, 2021

Pacheedaht First Nation holds unceded Aboriginal title and rights in our Territory, which is located on the southwest coast of Vancouver Island. We have a spiritual connection with our Territory, and our culture is based on our relationship with our lands and resources. We have inherent governance rights and sacred responsibilities to manage the human use of resources in our Territory.

Pacheedaht is concerned about the increasing polarization over forestry activities in our Territory. Decisions about the use of our forestry resources in our Territory need to be made by Pacheedaht. Pacheedaht has always harvested and managed our forestry resources, including old-growth cedar, for cultural, ceremonial, domestic and economic purposes. Our constitutional right to make decisions about forestry resources in our Territory, as a governing authority in our Territory, must be respected.

We are in the process of undertaking an Integrated Resource Stewardship Plan that will be developed by our community, for our community and will be led by our hereditary and elected leaders. Our Stewardship Plan will include the identification of special sites, traditional use areas and places where conservation measures will be in place. Given our governance rights, this Stewardship Plan must guide forestry activities in our Territory. To provide our community with the time necessary to develop our Stewardship Plan, we have secured commitments from tenure holders and the government of British Columbia to suspend and defer third-party forestry activities within specific areas identified by Pacheedaht. This will result in the implementation of an immediate interim conservation measure. We are also engaged in treaty and other government-to-government negotiations with British Columbia and Canada to recognize our Aboriginal rights, including governance rights.

Our rightful ownership and management of forest resources within our Territory need to be acknowledged. All parties need to respect that it is up to Pacheedaht people to determine how our forestry resources will be used. We do not welcome or support unsolicited involvement or interference by others in our Territory, including third-party activism. Pacheedaht needs to be left in peace to engage in our community-led stewardship planning process so that we can determine our own way forward as a strong and independent Nation.

Klecko, Klecko!

Pacheedaht Hereditary Chief

Frank Queesto Jones

Pacheedaht Chief Councillor

Jeff Jones

RAINFOREST
FLYING SQUAD

A LETTER FROM ELDER BILL JONES

Hello all defenders of our sacred forests.

I am an elder in the community of Pacheedaht. We all have a role and a part in this and we need to appreciate and honour our differences. Difference is a good thing. Different strategies are a good thing. People of all ages and genders and races and cultures and classes need to walk together in order to help heal the wounds of colonialism and environmental destruction.

Get out to the woods.

Talk to each other, listen to each other. If you feel like somebody is not honourable take the time to communicate directly with them and meet them face-to-face to discuss your concerns.

We must trust that people involved in this movement are taking time out of their short lives and doing their very best to make positive change in this world. If people are willing to put themselves in this vulnerable position – of standing on a logging road or speaking out on the internet about the damage to our mother earth and the destruction of our sacred places – then we must trust that although we might not always say the right things or walk the right path we still deserve to be treated with respect.

The Fairy Creek watershed is a sacred place for many reasons. I have many stories about this area, from my own experiences as a child and young man and also stories that were told to me by my elders. It breaks my heart in half when I see these last remaining stands being ravaged so a few people can have jobs for a few more months.

For any of you who are non-indigenous or do not identify with your indigeneity, do your best to follow the protocols of the land and culture where you live but also know that lifelong learning happens for everybody, in every culture. You will make mistakes, as we all do, and you, like myself, will continue to learn until the day you die.

For those of you who are indigenous, remember that there are many voices within our communities and many different priorities and many different paths to take. Some of us have committed our entire lives to upholding or reviving our cultures and traditions and some of us [illegible] to that place early in life and some of us came to it late. We are men and women of all ages. Some of us live in cities, some of us live in the bush. Some of us live on reserves, and some of us live thousands of miles away from our homeland. We work in offices, we are loggers, we are miners, we are healthcare providers and teachers and students and activists. We, like everyone else, are wonderfully diverse.

These forests bring us the clean air that we need to breathe and the clean water that we need to drink and all the plants and animals that we need to sustain not only our bodies but also our spirits.

Be humble and remember why you have all crossed paths in the first place.

I'll say this again. Go for a walk in the woods.

Thank you all.

RAINFOREST
FLYING SQUAD

DONATE

For all inquiries:
rain4estflyingsquad@gmail.com

© Rainforest Flying Squad

Rainforest Flying Squad
Instagram Rainforest Flying Squad
Facebook Fairy Creek Blockade
Instagram Fairy Creek Blockade

DISTRICT OF
HIGHLANDS

May 6, 2021

Colin Plant
Chair, CRD Board
Capital Regional District
PO Box 1000
Victoria BC V8W 2S6

Via email: cplant@crd.bc.ca

Dear Colin Plant:

Re: Old-Growth Logging

At a meeting held May 3, 2021, Highlands Council considered a motion regarding old-growth logging and passed the following resolution:

That Council endorse the following resolution and direct staff to forward copies to the Premier of British Columbia, Members of the Legislative Assembly representing constituencies on Vancouver Island, the Capital Regional District Board, municipalities in the Capital Region, and the Association of Vancouver Island Coastal Communities, requesting favorable consideration:

WHEREAS ancient high productivity (big tree) old growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and bank of biodiversity;

AND WHEREAS, of the miniscule amount (2.7%) of the original high productivity (big tree) old-growth forests that are left (less than 1% of BC's total current forested area), 75% are still slated to be eliminated through logging;

THEREFORE BE IT RESOLVED THAT the District of Highlands Council call on the provincial government to immediately defer logging in all high productivity, rare, oldest, and most intact old-growth forests as recommended by the Old-Growth Strategic Review, until all 14 of the panel's recommendations have been implemented; including deferrals in such at-risk old-growth forests as the head waters of Fairy Creek, the Upper Walbran Valley, Nahmint Valley, Eden Grove, Edinburgh Mountain, Upper Tsitika Valley, East Creek, Klaskish Valley, Nimpkish Lake and the Inland Old-Growth Temperate Rainforest.

AND THAT the District of Highlands formally oppose the logging of at-risk old-growth forests;

AND THAT the District of Highlands call on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation and to support the economic transition of affected First Nations and non-First Nation communities from unsustainable old-growth logging for the development of long-term sustainable local economies.

1980 Millstream Road, Victoria, B C V9B 6H1
Tel: (250) 474-1773 Fax: (250) 474-3677 Web: www.highlands.ca

If you require any additional information, please contact me at dhopkins@highlands.ca or 250-474-1773.

Sincerely,

Deb Hopkins
Corporate Officer

cc: Marlene Lagoa, Manager, Legislative Services & Deputy Corporate Officer

[redacted]

From: Andy MacKinnon <amackinnon@metchosin.ca>
Sent: May 19, 2021 8:33 AM
To: [redacted]
Subject: Fw: CRD motion about pacheedaht and old growth logging

Metchosin's resolution.

Andy MacKinnon
Councillor, Metchosin

From: tammie van swieten <tvanswieten@metchosin.ca>
Sent: May 19, 2021 7:59 AM
To: Andy MacKinnon <amackinnon@metchosin.ca>; Tina Hansen <thansen@metchosin.ca>
Cc: Lisa Urlacher <lurlacher@metchosin.ca>
Subject: RE: CRD motion about pacheedaht and old growth logging

Good Morning, please see resolution below made at Council's April 12, 2021 Council meeting. Thank you.

Tammie Van Swieten
Deputy Corporate Officer
District of Metchosin

c) Old Growth Forests Resolution

Moved and Seconded by Councillors MacKinnon and Epp that Council endorse the following resolution;
And that staff send a letter to the City of Nanaimo informing them of the resolution.

WHEREAS ancient high productivity (big tree) old growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and bank of biodiversity;

AND WHEREAS, of the miniscule amount (2.7%) of the original high productivity (big tree) old-growth forests that are left (less than 1% of BC's total current forested area), 75% are still slated to be eliminated through logging;
THAT BE IT RESOLVED

THAT the District of Metchosin call on the provincial government to immediately defer logging in all high productivity, rare, oldest, and most intact old-growth forests as recommended by the Old-Growth Strategic Review, until all 14 of the panel's recommendations have been implemented; including deferrals in such at-risk old-growth forests as, the head waters of Fairy Creek, the Upper Walbran Valley, Nahmint Valley, Eden Grove, Edinburgh Mountain, Upper Tsitika Valley, East Creek, Klaskish Valley, Nimpkish Lake and the Inland Old-Growth Temperate Rainforest.

AND THAT the District of Metchosin formally oppose the logging of at-risk old-growth forests;

AND THAT the District of Metchosin call on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation and to support the economic transition of affected First Nations and non-First Nation communities from unsustainable old-growth logging for the development of long-term sustainable local economies.

AND THAT the following resolution be sent to the Union of BC Municipalities and as a late submission to AVICC

Carried

[redacted]

ADMINISTRATION

Notice of Motion

Monday, April 12, 2021

From: Councillor Ned Taylor

That Council endorse the following resolution and direct staff to forward copies to the Premier of British Columbia, Members of the Legislative Assembly representing constituencies on Vancouver Island, the Capital Regional District Board, municipalities in the Capital Region, and the Association of Vancouver Island and Coastal Communities, requesting favourable consideration:

WHEREAS ancient high productivity (big tree) old growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and bank of biodiversity;

AND WHEREAS, of the miniscule amount (2.7%) of the original high productivity (big tree) old growth forests that are left (less than 1% of BC's total current forested area), 75% are still slated to be eliminated through logging;

BE IT RESOLVED THAT the District of Saanich call on the provincial government to immediately defer logging in all high productivity, rare, oldest, and most intact old-growth forests as recommended by the Old Growth Strategic Review, until all 14 of the panel's recommendations have been implemented; including deferrals in such at-risk old-growth forests as, the head waters of Fairy Creek, the Upper Walbran Valley, Nahmint Valley, Eden Grove, Edinburgh Mountain, Upper Tsitika Valley, East Creek, Klaskish Valley, Nimpkish Lake and the Inland Old-Growth Temperate Rainforest.

AND THAT the District of Saanich formally oppose the logging of at-risk old-growth forests;

AND THAT the District of Saanich call on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation and to support the economic transition of affected First Nations and non-First Nation communities from unsustainable old-growth logging for the development of long-term sustainable local economies.

This motion will be considered at the April 26, 2021 Special Council Meeting.

THE CITY OF VICTORIA OFFICE OF THE MAYOR

April 9, 2021

The Honourable John Horgan
Premier of British Columbia
PO Box 9041 Stn Prov Govt
Victoria, BC V8W 9E1

Dear Premier Horgan,

On behalf of Victoria City Council, I am writing today to request favourable consideration of the motion below passed at the April 1, 2021 Council meeting:

> WHEREAS Ancient high productivity old-growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and preservation of biological diversity;
>
> AND WHEREAS Less than 3% of the original high productivity (big tree) old-growth forests in British Columbia remain standing, and of this residual land base, 75% is slated to be eliminated through industrial logging operations;
>
> AND WHEREAS Alternatives exist to increase protection of biological diversity and employment, through the immediate transition to sustainable management of second-growth forests with expanded value-added processing and manufacturing;
>
> THEREFORE BE IT RESOLVED THAT the City of Victoria calls on the Government of British Columbia to immediately defer logging in all high-productivity old-growth forests on Vancouver Island, as recommended by the Old Growth Strategic Review, until all 14 of the panel's recommendations have been implemented, including the Fairy Creek watershed in the Capital Regional District and all other at-risk old-growth forests on Vancouver Island;
>
> AND BE IT FURTHER RESOLVED THAT the City of Victoria calls on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation and to support the economic transition of affected First Nations and non-First Nation communities from unsustainable old-growth logging toward the development of long-term sustainable local economies.

.../2

The City of Victoria recognizes the Songhees and Esquimalt Nations in whose traditional territories we live and work "Hay swx qa"

1 Centennial Square Victoria British Columbia Canada V8W 1P6
Telephone (250) 361-0200 Fax (250) 361-0348 Email mayor@victoria.ca
www.victoria.ca

Thank you for your time and consideration. Please do not hesitate to reach out should you have any questions regarding this letter.

Sincerely,

Lisa Helps
Victoria Mayor

Cc: MLA's representing constituencies on Vancouver Island
Capital Regional District Board
Capital Region Municipalities
Association of Vancouver Island and Coastal Communities

The City of Victoria recognizes the Songhees and Esquimalt Nations in whose traditional territories we live and work "Hay swx qa"

OFFICE OF THE MAYOR
CITY OF NANAIMO, BRITISH COLUMBIA

March 31, 2021

Sent via email: premier@gov.bc.ca

The Honourable John Horgan
Premier of British Columbia
PO Box 9041 STN PROV GOVT
Victoria, BC V8W 9E1

Dear Premier Horgan,

Re: City of Nanaimo Councillor Ben Geselbracht Motion
Call For Immediate Protection Of All At-Risk Old-Growth Forests In BC

At the Regular Council meeting of the City of Nanaimo held on March 29, 2021, Council passed the following motion:

It was moved and seconded that:

WHEREAS ancient high productivity (big tree) old growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and bank of biodiversity;

AND WHEREAS, of the miniscule amount (2.7%) of the original high productivity (big tree) old-growth forests that are left (less than 1% of BC's total current forested area), 75% are still slated to be eliminated through logging; BE IT RESOLVED

THAT the City of Nanaimo call on the provincial government to immediately defer logging in all high productivity, rare, oldest, and most intact old-growth forests as recommended by the Old-Growth Strategic Review, until all 14 of the panel's recommendations have been implemented; including deferrals in such at-risk old-growth forests as, the head waters of Fairy Creek, the Upper Walbran Valley, Nahmint Valley, Eden Grove, Edinburgh Mountain, Upper Tsitika Valley, East Creek, Klaskish Valley, Nimpkish Lake and the Inland Old-Growth Temperate Rainforest.

CITY HALL, 455 WALLACE STREET, NANAIMO, BRITISH COLUMBIA, CANADA V9R 5J6
TELEPHONE (250) 755-4400 • WEBSITE: WWW.NANAIMO.CA • FAX (250) 754-8263

AND THAT the City of Nanaimo formally oppose the logging of at-risk old-growth forests;

AND THAT the City of Nanaimo call on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation and to support the economic transition of affected First Nations and non-

First Nation communities from unsustainable old-growth logging for the development of long-term sustainable local economies.

AND THAT the following resolution be sent to the Union of BC Municipalities and as a late submission to AVICC.

Immediate Protection for all at-risk Old-growth Forests in BC

WHEREAS ancient high productivity (big tree) old growth ecosystems are globally one of the most valuable climate mitigation and resiliency assets in terms of carbon storage, sequestration, protection against wildfire, storage of water and bank of biodiversity;

AND WHEREAS, of the minuscule amount (2.7%) of the original high productivity (big tree) old-growth forests that are left (less than 1% of BC's total current forested area), 75% are still slated to be eliminated through logging; BE IT RESOLVED

THAT the UBCM and AVICC call on the provincial government to immediately defer logging in all high productivity, rare, oldest, and most intact old-growth forests as recommended by the Old-Growth Strategic Review, until all 14 of the panel's recommendations have been implemented; including deferrals in such at-risk old-growth forests as the head waters of Fairy Creek, the Upper Walbran Valley, Nahmint Valley, Eden Grove, Edinburgh Mountain, Upper Tsitika Valley, East Creek, Klaskish Valley, Nimpkish Lake and the Inland Old-Growth Temperate Rainforest.

AND THAT the UBCM and AVICC call on the Government of British Columbia to allocate funding to enact deferrals in an economically just manner, in the full spirit of reconciliation and to support the economic transition of affected First Nations and non-First Nation communities from unsustainable old-growth logging for the development of long-term sustainable local economies.

The motion carried.

Opposed: Mayor Leonard Krog, Councillors Armstrong, Thorpe, Turley

Sincerely,

Leonard Krog
M A Y O R

DISTRICT OF TOFINO – OFFICE OF THE MAYOR

P.O. Box 9, 121 Third Street, Tofino, B.C. V0R 2Z0
Telephone: 250.725.3229 | Fax: 250. 725.3775 | Email: dlaw@tofino.ca | Website: www.tofino.ca

Honourable Katrine Conroy
Minister of Forests, Lands, Natural Resource Operations and Rural Development
PO BOX 9049, Stn. Provincial Government
Victoria BC, V8W9E2

May 11, 2021
File No. COM-02 FLNRORD
FLNR.Minister@gov.bc.ca

Dear Minister Conroy,

Re: Support for Expedient and Resourced Implementation of the Old-Growth Strategic Review

On behalf of the District of Tofino Council, I write to you expressing support for the expedient and resourced implementation of the 14 recommendations in the report titled "A Strategic Review of How British Columbia Manages for Old Forests Within its Ancient Ecosystems" (the Strategic Review) written by Registered Professional Foresters Garry Merkel and Al Gorley.

We commend the Minister and Premier Horgan for having publicly committed to implement the Strategic Review in its totality. However, to adequately manage and protect BC's old forest biodiversity, attributes, values and benefits for future generations, we specifically request an expedient Provincial response to recommendations 6 and 7:

6. Until a new strategy is implemented, defer development in old forests where ecosystems are at very high and near-term risk of irreversible biodiversity loss.
7. Bring management of old forests into compliance with existing provincial targets and guidelines for maintaining biological diversity.

The District of Tofino also adds our voice to concerns that BC Budget 2021 shows no allocated funding toward the implementation of the recommendations, or to transitional supports for communities and Indigenous governments as they adapt to changes resulting from new forest management systems.

While BC Budget 2021 does include increased funding for land-use planning modernization, support for negotiations with Indigenous communities, and funds to enact the *Declaration on the Rights of Indigenous Peoples Act*, the budget is missing critical funding pieces needed to fully implement the Old Growth Strategic Review recommendations.

Situated within the Territory of the Tla-o-qui-aht First Nation in the Clayoquot Sound UNESCO Biosphere Reserve, thirty years ago our region was also at a crossroads with respect to the ongoing harvest of timber resources. Since that time, the District of Tofino has continued to engage with the Province and other governments on issues of sustainability and equity, as noted in our most recent Strategic Plan, protocol agreements and other corporate strategies.

Our intention in writing to you, Minister, is to not only show the District of Tofino's support for the expedient implementation of the Strategic Review's recommendations, but also to add our voice to the calls for dedicated funding to enact the recommendations in an economically just manner to build healthier ecosystems, better long-term land management and greater public support for this much needed paradigm shift.

Sincerely,

Dan Law, Mayor
District of Tofino

cc. MLA Josie Osborne
Local Governments of British Columbia

City of Powell River

City Hall – MacGregor Building
6910 Duncan Street, Powell River, BC V8A 1V4
Telephone 604.485.6291 • Fax 604.485.2913
www.powellriver.ca • info@cdpr.bc.ca

File No. 0410-01

From the Office of the Mayor

March 16, 2021

The Honourable Katrine Conroy
Minister of Forests, Lands, Natural Resource Operations
& Rural Development Contacts
FLNR.Minister@gov.bc.ca

Dear Minister Conroy:

Re: Old Growth Strategic Review Recommendations

At the March 2, 2021 Committee of the Whole meeting, Powell River City Council put forward a resolution endorsing the recommendations in the Old Growth Strategic Review Report, with particular emphasis on recommendations 1 (Indigenous Involvement) and 6 (Immediate Response to Ecosystems at Very High Risk).

As was outlined in your November 26, 2020 mandate letter, we encourage the Province and your Ministry to follow through on the expectation to "Implement the recommendations of the Old Growth Strategic Review in collaboration with Indigenous leaders, labour, industry, and environmental groups to protect more old growth stands – in addition to the 353,000 hectares protected in September 2020".

Thank you for your consideration.

Yours truly,
CITY OF POWELL RIVER

David Formosa
Mayor

DF/jl
Ec: Council
Premier Horgan

City of Port Moody

Council Resolution

March 23, 2021

RC21/164 (moved, seconded, CARRIED)

WHEREAS ancient high productivity (big tree) old growth ecosystems are one of the most valuable tourism, First Nations culture, wild salmon enhancing, biodiversity banking, and climate resiliency assets;

AND WHEREAS only a miniscule fraction of the planet's original, high productive, ancient forests remain in BC, the vast majority of which is slated to be eliminated through logging; including the headwaters of Fairy Creek, the last unprotected intact old-growth watershed on southern Vancouver Island; THEREFORE BE IT RESOLVED:

THAT the City of Port Moody formally oppose the logging of at-risk old growth forests as recommended in the report dated March 12, 2021 from Mayor Rob Vagramov regarding Old Growth Logging;

AND THAT the City of Port Moody call on the Government of British Columbia to immediately and permanently protect the Fairy Creek watershed from further logging;

AND THAT the City of Port Moody call on the Government of British Columbia to immediately defer logging in all at risk old growth forests, including all remaining high-productivity old growth forests, as identified by the independent Old Growth Strategic Review Panel, until all 14 of the panel's recommendations have been implemented;

AND THAT the City of Port Moody call on the Government of British Columbia to allocate funding to support the economic transition of affected communities away from unsustainable old growth logging, in the full spirit of Indigenous reconciliation where applicable, for the development of long term sustainable local economies and Indigenous Protected and Conserved Areas where applicable;

City of Port Moody

Council Resolution

March 23, 2021

RC21/164 (moved, seconded, CARRIED)

AND THAT the following resolution be sent to the Lower Mainland Local Government Association and the Union of BC Municipalities with this report, dated March 12, 2021 from the Office of Mayor Rob Vagramov regarding Old Growth Logging:

WHEREAS ancient high productivity (big tree) old growth ecosystems are one of the most valuable tourism, First Nations culture, wild salmon enhancing, biodiversity banking, and climate resiliency assets;

AND WHEREAS only a miniscule fraction of the planet's original, high productive, ancient forests remain in BC, the vast majority of which is slated to be eliminated through logging; including the headwaters of Fairy Creek, the last unprotected intact old-growth watershed on southern Vancouver Island;

THEREFORE BE IT RESOLVED THAT the Government of British Columbia immediately defer logging in all at risk old-growth forests, as identified by the independent Old Growth Strategic Review panel until all 14 of the panel's recommendations have been implemented, and support the transition of affected local communities toward more sustainable jobs.

AND BE IT FURTHER RESOLVED THAT the Government of British Columbia allocate funding to support the economic transition of affected communities away from unsustainable old growth logging, in the full spirit of Indigenous reconciliation where applicable, for the development of long-term sustainable local economies and Indigenous Protected and Conserved Areas where applicable.