

## Notice of Meeting and Meeting Agenda Capital Regional District Board

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Wednesday, December 14, 2022

1:00 PM

6th Floor Boardroom  
625 Fisgard Street  
Victoria, BC

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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 PROVIDED BY CHIEF ROB THOMAS OF THE ESQUIMALT NATION

### 2. APPROVAL OF THE AGENDA

### 3. ADOPTION OF MINUTES

#### 3.1. [22-663](#) Minutes of the October 12, 2022 and November 16, 2022 Capital Regional District Board meetings

**Recommendation:** 1. That the minutes of the Capital Regional District Board meeting of October 12, 2022 be adopted as circulated.  
2. That the minutes of the Special Session of Capital Regional District Board of November 16, 2022 be adopted as circulated.

**Attachments:** [Minutes - October 12, 2022](#)  
[Minutes - November 16, 2022](#)

#### 3.2. [22-674](#) Previous Minutes of Other CRD Committees and Commissions

**Recommendation:** 1. That the minutes of the Committee of the Whole meeting of November 30, 2022 be adopted as circulated.  
2. That the minutes of the Performing Arts Facilities Select Committee meeting of January 19, 2022 be adopted as circulated.

**Attachments:** [PAFSC Minutes - January 19, 2022](#)  
[COW Minutes - November 30, 2022](#)

### 4. REPORT OF THE CHAIR

### 5. PRESENTATIONS/DELEGATIONS

#### 5.1. Delegations

##### 5.1.1. [22-682](#) Delegation - Dave Cowen; Representing Peninsula Biosolids Coalition/The Butchart Gardens: Re: Agenda Item 7.8.: Management of Biosolids - Update

**6. CONSENT AGENDA**

- 6.1.**      [22-646](#)      British Columbia Structure Firefighter Minimum Training Standards
- Recommendation:** The Electoral Areas Committee recommends to the Capital Regional District (CRD) Board:  
To direct CRD staff to proceed with Electoral Area fire service consultation to determine requirements to comply with British Columbia Structure Firefighter Minimum Training Standards, implement an appropriate training program no later than Q1 2024, and adjust the future fire service budgets accordingly.  
(NWA)
- Attachments:**      [Staff Report: BC Structure Firefighter Minimum Training Standards](#)  
[Appendix A: BC Structure Firefighter Minimum Training Standards](#)
- 6.2.**      [22-647](#)      Community Resiliency Initiative Grant: 2023 FireSmart Community Funding & Supports
- Recommendation:** The Electoral Areas Committee recommends to the Capital Regional District Board:  
That the Board support an application to the Union of British Columbia Municipalities Community Resiliency Initiative Fund for the FireSmart Community Funding & Supports program and direct staff to provide overall grant management.  
(NWA)
- Attachments:**      [Staff Report: Community Resiliency Initiative Grant: FireSmart](#)  
[Appendix A: UBCM 2023 FireSmart Community Funding & Support Application](#)
- 6.3.**      [22-648](#)      Community Emergency Preparedness Fund Grant: Volunteer & Composite Fire Department Training & Equipment
- Recommendation:** The Electoral Areas Committee recommends to the Capital Regional District Board:  
That the Board support an application to the Union of British Columbia Municipalities Community Emergency Preparedness Fund for the Fire Department Training and Equipment program and direct staff to provide overall grant management.  
(NWA)
- Attachments:**      [Staff Report: Community Emerg Prep Fund Grant: Volunteer & Composite](#)  
[Appendix A: UBCM 2022 Volunteer & Composite Fire Dpt Equip & Training App](#)
- 6.4.**      [22-657](#)      Magic Lake Estates SCADA Communication Upgrades
- Recommendation:** The Magic Lake Estates Water and Sewer Committee recommends the Electoral Areas Committee recommends to the Capital Regional District Board:  
That the provisionally approved Magic Lake Estates Water Service 2023-2027 Capital Plan and Budget be amended to include a new Capital Project for 2023 to complete communication improvements at all Magic Lake Estates Water sites with a budget of \$90,000 to be funded from the Water Service Capital Reserve Fund.  
(WA)
- Attachments:**      [Staff Report: Magic Lake Estates SCADA Communication Upgrades](#)  
[Appendix A: SCADA Radio Path Analysis](#)

**6.5.**      [22-675](#)      2023 Schedule of Regular Board Meetings

**Recommendation:** That the regular meetings for the Capital Regional District Board will be scheduled in 2023 on the second Wednesday of each month as follows: January 11, February 8, March 8, April 12, May 10, June 14, July 12, August 9 (at the call of the Chair), September 13, October 11, November 8 (inaugural), December 13.  
(NWA)

**Attachments:**      [Staff Report: 2023 Schedule of Regular Meetings](#)

**6.6.**      [22-681](#)      2023 Terms of Reference for Standing Committees

**Recommendation:** That the Board approve the 2023 Terms of Reference for Standing Committees attached as Appendix A.  
(NWA)

**Attachments:**      [Staff Report: 2023 ToR Standing Committees](#)  
[Appendix A: 2023 ToR Standing Committees\\_Redlined](#)

**7. ADMINISTRATION REPORTS****7.1.**      [22-620](#)      Archie Galbraith Memorial Scholarship 2022

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

**Attachments:**      [Staff Report: Archie Galbraith Memorial Scholarship 2022](#)  
[Appendix A: Sofia Auger Nybida Student Profile](#)

**7.2.**      [22-664](#)      2023 Committee and External Membership Appointments

**Recommendation:** That the Board receive the standing committee appointments and endorse the external appointments and nominations put forward in the attachment.  
(NWA)

**Attachments:**      [2023 Board & Committee Membership Appointments](#)

**7.3.**      [22-672](#)      McLoughlin Point Wastewater Treatment Plant - Performance Period Closeout Update

**Recommendation:** There is no recommendation, the report is for information only.

**Attachments:**      [Staff Report: MPWWTP - Performance Period Closeout Update](#)  
[Appendix A: October 12, 2022 CALWMC Staff Report](#)  
[Appendix B: Stantec Project Completion Letter](#)  
[Appendix C: Compliance Reports](#)  
[Appendix D: Odour Investigation](#)  
[Appendix E: CRD Response to Township of Esquimalt](#)

7.4. [22-683](#) Alternative Approval Process for Bylaw 4522 - Regional Goose Management

**Recommendation:** 1. That in accordance with section 86(3) of the Community Charter, the date of January 23, 2023 be confirmed as the deadline by which electoral response, under the regional Alternative Approval Process for CRD Bylaw No. 4522, must be submitted to the Capital Regional District by qualified electors within the Capital Regional District;  
2. That the attached Synopsis of Bylaw No. 4522 (Appendix B), Notice of Alternative Approval Process (Appendix C), and the Elector Response Form (Appendix D) be approved; and  
3. That the total number of registered electors within the service area is 332,080 and that 10% of that number is 33,208 electors.  
(NWA)

**Attachments:** [Staff Report: AAP for Bylaw 4522 - Regional Goose Management](#)  
[Appendix A: Bylaw No. 4522](#)  
[Appendix B: Synopsis of Bylaw 4522](#)  
[Appendix C: Notice of AAP for Bylaw 4522](#)  
[Appendix D: Elector Response Form for Bylaw 4522](#)  
[Appendix E: Previous Staff Report October 12, 2022](#)  
[Appendix F: Previous Staff Report May 18, 2022](#)

7.5. [22-684](#) Alternative Approval Process for Bylaw 4515 - Solid Waste Disposal Loan Authorization

**Recommendation:** 1. That in accordance with section 86(3) of the Community Charter, the date of January 23, 2023 be confirmed as the deadline by which electoral response, under the regional Alternative Approval Process for CRD Bylaw No. 4515, must be submitted to the Capital Regional District by qualified electors within the Capital Regional District;  
2. That the attached Synopsis of Bylaw No. 4515 (Appendix B), Notice of Alternative Approval Process (Appendix C), and the Elector Response Form (Appendix D) be approved; and  
3. That the total number of registered electors within the service area is 332,080 and that 10% of that number is 33,208 electors.  
(NWA)

**Attachments:** [Staff Report: AAP for Bylaw 4515 - Solid Waste Disposal Borrowing](#)  
[Appendix A: Bylaw No.4515](#)  
[Appendix B: Synopsis Bylaw for 4515](#)  
[Appendix C: Notice of AAP for Bylaw 4515](#)  
[Appendix D: Elector Response Form for Bylaw 4515](#)  
[Appendix E: Previous Staff Report October 12, 2022](#)



- 7.6. [22-632](#) Bylaw Nos. 4526, 4527, and 4528: Updates to Water Supply, Bulk Water Fees and Charges and Water Distribution Bylaws
- Recommendation:** 1. That Bylaw No. 4526, "Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997, Amendment Bylaw No. 24, 2022", be introduced and read a first, second and third time; and  
(WP - All except SGI & SSI)  
2. That Bylaw No. 4526 be adopted.  
(WP - All except SGI & SSI, 2/3 on adoption)  
3. That Bylaw No. 4527, "Bulk Water Rates Bylaw, 1977, Amendment Bylaw No. 42, 2022", be introduced and read a first, second and third time; and  
(WP - Central Saanich, North Saanich & Sidney)  
4. That Bylaw No. 4527 be adopted.  
(WP - Central Saanich, North Saanich & Sidney, 2/3 on adoption)  
5. That Bylaw No. 4528, "Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013, Amendment Bylaw No. 12, 2022", be introduced and read a first, second and third time; and  
(WP - Colwood, Highlands, Langford, Metchosin, Sooke, View Royal, JDF)  
6. That Bylaw No. 4528 be adopted.  
(WP - Colwood, Highlands, Langford, Metchosin, Sooke, View Royal, JDF, 2/3 on adoption)
- Attachments:** [Staff Report: Bylaws 4526-4528 Water 2023 Fees & Charges](#)  
[Appendix A: Bylaw 4526 Water Supply Fees & Charges 2023](#)  
[Appendix B: Bylaw 4527 Bulk Water Rates 2023](#)  
[Appendix C: Bylaw 4528 Water Distribution Fees & Charges 2023](#)
- 7.7. [22-633](#) Parcel Tax Roll Review Panel
- Recommendation:** 1. That the Parcel Tax Roll Review Panel meeting be held on Wednesday, 8 March 2023, at 12:00 pm in Room 652 of the Capital Regional District offices, 625 Fisgard Street, Victoria, BC; and  
2. That the following individuals be appointed to the Parcel Tax Roll Review Panel for the year 2023:  
Colin Plant, CRD Board Chair  
Al Wickheim, Director, Juan de Fuca Electoral Area  
Paul Brent, Director, Southern Gulf Islands Electoral Area  
Gary Holman, Director, Salt Spring Island Electoral Area  
(NWA)
- Attachments:** [Staff Report: Parcel Tax Roll Review Panel](#)
- 7.8. [22-671](#) Management of Biosolids - Update
- Recommendation:** There is no recommendation. This report is for information only.
- Attachments:** [Staff Report: Management of Biosolids - Update](#)  
[Appendix A: Wastewater Treatment - Biosolids Production Report \(Oct 2022\)](#)

## 8. REPORTS OF COMMITTEES

### Electoral Areas Committee

8.1. [22-673](#) Saturna Island Fire Protection Society (SIFPS) - Medical Patient Transportation

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

1. That Bylaw No. 4534, "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993, Amendment Bylaw No. 3, 2022", be introduced and read a first, second, and third time;  
(NWA)
2. That elector approval be obtained by the Electoral Area director consenting on behalf; and
3. That Bylaw No. 4534 be referred to the Inspector of Municipalities for approval.  
(NWA)

**Attachments:** [Staff Report: SIFPS - Medical Patient Transportation](#)

[Appendix A: SIFPS Request Letter](#)

[Appendix B: Bylaw No. 4534](#)

[Appendix C: Bylaw No. 2165 Redlined](#)

8.2. [22-669](#) Salt Spring Island Local Community Commission - Implementation

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

1. That Bylaw No. 4507, "Salt Spring Island Local Community Commission Bylaw No. 1", be adopted;  
(NWA)
2. That staff proceed with the planning and establishment of a local community commission election with a target date of May 27, 2023, and associated bylaw amendments to dissolve certain commissions which will be assumed by the Salt Spring Island Local Community Commission.  
(NWA)

**Attachments:** [Staff Report: SSI LCC Implementation](#)

[Appendix A: Services assumed by LCC](#)

[Appendix B: Bylaw No. 4507, "SSI Local Community Commission Bylaw No. 1"](#)

[Appendix C: EAC Staff Report, July 13, 2022 Bylaws 4507&4508 Est. of LCC fo](#)

8.3. [22-607](#) Bylaw Nos. 4524 and 4525: Fees and Charges Bylaw Amendments for Utilities within the Three Electoral Areas

- Recommendation:** The Electoral Areas Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4524, "Southern Gulf Islands and Juan de Fuca Electoral Areas Utilities and Street Lighting Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 11, 2022", be introduced and read a first, second, and third time.  
(WP - JDF & SGI)
  2. That Bylaw No. 4524 be adopted.  
(WP - JDF & SGI, 2/3rds on adoption)
  3. That Bylaw No. 4525, "Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 16, 2022", be introduced and read a first, second, and third time.  
(NWA)
  4. That Bylaw No. 4525 be adopted.  
(NWA, 2/3rds on adoption)

- Attachments:** [Staff Report: Bylaws 4524-4525 Fees & Charges Bylaws](#)  
[Appendix A: 4524 SGI JDF Utility Fees & Charges Amendment 11](#)  
[Appendix B: 4525 SSI Utility Fees & Charges Amendment 16](#)  
[Appendix C: Bylaws 4524-4525 Changes Summary](#)

8.4. [22-645](#) Electoral Areas "Fire Regulation Bylaw No. 2", Bylaw No. 4489

- Recommendation:** The Electoral Areas Committee recommends to the Capital Regional District Board:
1. That Bylaw No. 4489, "Fire Regulation Bylaw No. 2, 2022", be introduced and read a first, second, and third time;  
(WP - JDF & SGI)
  2. That Bylaw No. 4489 be adopted.  
(WP - JDF & SGI, 2/3 on adoption)
  3. That Bylaw No. 4499, "Capital Regional District Ticket Information Authorization Bylaw, 1990, Amendment Bylaw No. 74, 2022", be introduced and read a first, second, and third time;
  4. That Bylaw No. 4499 be adopted.  
(WP - JDF & SGI, 2/3 on adoption)
  5. That Bylaw No. 4523, "Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 2, 2022", be introduced and read a first, second, and third time;  
(WP - JDF & SGI)
  6. That Bylaw No. 4523 be adopted.  
(WP - JDF & SGI, 2/3 on adoption)

- Attachments:** [Staff Report: Electoral Area Fire Regulation Bylaw No. 4489](#)  
[Appendix A: Bylaw #4489 Fire Regulation Bylaw No. 2, 2022](#)  
[Appendix B: Bylaw #4499 CRD Ticket Info Authorization Bylaw](#)  
[Appendix C: Bylaw #4523 CRD Fire Protect'n Svcs Fees & Charges Bylaw](#)  
[Appendix D: Draft Guide to Fire Regulation Bylaw No. 2](#)

8.5. [22-676](#) Motion with Notice: Electoral Area Director Remuneration (Director Holman)

- Recommendation:** That the Electoral Area Director remuneration be maintained at 2022 levels for 2023.  
(NWA)

8.6. [22-677](#) Motion with Notice: Sooke Basin Aquaculture Proposal (Director Wickheim)

**Recommendation:** Move that discussion relating to the aquaculture proposal for the Sooke basin be brought for discussion at the next board meeting.  
(NWA)

### Juan de Fuca Land Use Committee

8.7. [22-653](#) Public Hearing Report on Bylaw No. 4423, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021"

**Recommendation:** 1) That the minutes that form the Report of the Public Hearing for Bylaw No. 4423, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021", which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4423, be received; (NWP - Voting Block A: JDF EA, Colwood, Langford (Goodmanson), Metchosin, Sooke)  
2) That Bylaw No. 4423 be read a third time; and  
(NWP - Voting Block A: JDF EA, Colwood, Langford (Goodmanson), Metchosin, Sooke)  
3) That Bylaw No. 4423 be adopted.  
(NWP - Voting Block A: JDF EA, Colwood, Langford (Goodmanson), Metchosin, Sooke, with 2/3 on adoption)

**Attachments:** [Staff Report: Public Hearing Report on Bylaw No. 4423](#)

[Appendix A: Proposed Bylaw No. 4423](#)

[Appendix B: Report of the Public Hearing November 8, 2022](#)

8.8. [22-658](#) Public Hearing Report on Bylaw No. 4496, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022"

**Recommendation:** 1) That the minutes that form the Report of the Public Hearing for Bylaw No. 4496, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022", which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4496, be received; (NWP - Voting Block A: JDF EA, Colwood, Langford (Goodmanson), Metchosin, Sooke)  
2) That Bylaw No. 4496 be read a third time; and  
(NWP - Voting Block A: JDF EA, Colwood, Langford (Goodmanson), Metchosin, Sooke)  
3) That Bylaw No. 4496 be adopted.  
(NWP - Voting Block A: JDF EA, Colwood, Langford (Goodmanson), Metchosin, Sooke, with 2/3 on adoption)

**Attachments:** [Staff Report: Public Hearing Report on Bylaw No. 4496](#)

[Appendix A: Proposed Bylaw No. 4496](#)

[Appendix B: Report of the Public Hearing November 8, 2022](#)

## 9. BYLAWS

- 9.1. [22-659](#) Bylaw 4487 - "Seagirt Water System Local Service Establishment Bylaw No.1, 2022"

**Recommendation:** That Bylaw 4487- "Seagirt Water System Local Service Establishment Bylaw No.1, 2022" be adopted.  
(NWA)

**Attachments:** [Bylaw No.4487](#)

- 9.2. [22-660](#) Bylaw 4488 - "Seagirt Water System Local Service Loan Authorization Bylaw No. 1, 2022"

**Recommendation:** That Bylaw 4488- "Seagirt Water System Local Service Loan Authorization Bylaw No. 1, 2022" be adopted.  
(NWA)

**Attachments:** [Bylaw No.4488](#)

## 10. NOTICE(S) OF MOTION

## 11. NEW BUSINESS

## 12. MOTION TO CLOSE THE MEETING

- 12.1. [22-635](#) Motion to Close the Meeting

**Recommendation:**

1. That the meeting be closed for Appointments in accordance with Section 90(1)(a) of the Community Charter. [1 item]
2. That the meeting be closed for a Legal Update in accordance with Section 90(1)(i) of the Community Charter. [1 item]
3. That the meeting be closed for Intergovernmental Negotiations in accordance with Section 90(2)(b) of the Community Charter. [1 item]

## 13. RISE AND REPORT

## 14. ADJOURNMENT

### Voting Key:

**NWA - Non-weighted vote of all Directors**

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

**WA - Weighted vote of all Directors**

**WP - Weighted vote of participants (as listed)**

**Meeting Minutes**

**Capital Regional District Board**

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Wednesday, October 12, 2022

1:10 PM

6th Floor Boardroom  
625 Fisgard Street  
Victoria, BC

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**PRESENT:**

C. Plant (Chair), R. Mersereau (Vice Chair), D. Blackwell, P. Brent, S. Brice, B. Desjardins (EP), F. Haynes (1:56 pm) (EP), L. Helps, M. Hicks, G. Holman, B. Isitt (EP), J. Loveday, C. McNeil-Smith, R. Martin, K. Murdoch, G. Orr, J. Ranns, D. Screech, L. Seaton, M. Tait (1:42 pm), N. Taylor, K. Williams, R. Windsor, 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; K. Morley, General Manager, Corporate Services; T. Robbins, General Manager, Integrated Water Services; D. Elliot, Senior Manager, Housing; S. Henderson, Manager, Real Estate Services; M. Lagoa, Deputy Corporate Officer; S. Orr, Senior Committee Clerk (Recorder)

EP - Electronic Participation

The meeting was called to order at 1:18 pm.

**1. TERRITORIAL ACKNOWLEDGEMENT**

A Territorial Acknowledgement was provided in a preceding meeting.

**2. APPROVAL OF THE AGENDA**

**MOVED** by Director Helps, **SECONDED** by Director Blackwell,  
That the agenda for the October 12, 2022 Session of the Capital Regional District Board be approved.  
**CARRIED**

**3. ADOPTION OF MINUTES**

**3.1.**     [22-601](#)     Minutes of the August 10, 2022 and the minutes of the September 21, 2022 Capital Regional District Board meetings

**MOVED** by Director Orr, **SECONDED** by Director Murdoch,  
That the minutes of the Capital Regional District Board meetings of August 10, 2022 and September 21, 2022 be adopted as circulated.  
**CARRIED**

**3.2.** [22-615](#) Minutes of Previous Committee and Commission Meetings

**MOVED** by Director Orr, **SECONDED** by Director Murdoch,

1. That the minutes of the Committee of the Whole meeting of May 11, 2022 be adopted as circulated.

2. That the minutes of the CAO Recruitment Selection Committee meeting of July 20, 2022 be adopted as circulated.

3. That the minutes of the Committee of the Whole meeting of September 21, 2022 be adopted as circulated.

**CARRIED**

**4. REPORT OF THE CHAIR**

Good afternoon. It's hard to believe it's been only four years. And it's hard to believe it's been FOUR years. Regardless how you look at it, this has been an effective term and Board of Directors for the CRD. Some sitting here would like to have seen us do more, others perhaps less. But at the end of the day we have remained a respectful, contemplative and effective and we moved forward together. We opened a wastewater treatment facility in the Core that saw our region start treating wastewater after debating about it for decades. We continued to buy land for future park use and ecological preservation. We invited First Nations members to sit with us on committees and we declared a Climate Emergency. And we did much of this under the challenging situations of a world pandemic that had great impact here in the CRD. We did a lot. This 59 page document of our Board Highlights will be attached to my final Board Chair Memo tomorrow. We started doing these highlights in November 2019 and there is a full year's worth of work that we did that is not included. Thank you to the men and women of this Board and this entire organization for the incredible work you. Today I am going to be serving a Notice of Motion later in the meeting regarding supporting the Greater Victoria Harbour Authority's pursuit of shore power. I hope you will raise your voice with me to see the GVHA develop shore power to lower emissions in our region from visiting cruise ships. Today is the last meeting of the board and I'd like to acknowledge some Directors who have made the decision to not seek re-election to the CRD and/or their local government role. Thanks Bob Lapham. He has been a steady hand these past four years and has helped set the organization up for future success. And on behalf of the board we wish Ted Robbins and the future board of directors nothing but success. There is always more to do. I'm going to request that at the end of this meeting we take another Board photo like we did when we first were inaugurated. Maybe we can even sit and stand in the same place. So take a look at that photo. And finally; to thank each other. Let's get on with our meeting.

**5. PRESENTATIONS/DELEGATIONS**

There were no presentations or delegations.

**6. CONSENT AGENDA**

Agenda item 6.1. was moved to be considered under Administration Reports as item 7.7.

Agenda item 6.2. was moved to be considered under Reports of Committees as item 8.7.

**MOVED by Director Windsor, SECONDED by Director Mersereau,  
That consent agenda items 6.3. through 6.13. be approved.  
CARRIED**

- 6.3.**     [22-227](#)     Wastewater Treatment Project (WTP) Final Funding and Financing Strategy Performance  
  
This Informational Report was received for information.
- 6.4.**     [22-573](#)     Core Area Inflow & Infiltration Program - 2022 Summary  
  
This Informational Report was received for information.
- 6.5.**     [22-597](#)     2022/23 B.C. Active Transportation Infrastructure Grant Application - Merchant Mews Pathway  
  
That approval be given to submit a 2022/23 Active Transportation Infrastructure grant application for the Salt Spring Island Electoral Area Merchant Mew pathway project in the amount of \$130,000; and further that the project proceed as soon as project funding is approved and local weather conditions allow.  
**CARRIED**
- 6.6.**     [22-610](#)     Saturna Island Fire Medical Patient Transportation (Alternate Director Brent)  
  
That staff be directed to report back with amendments to Bylaw No. 2165, "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993" to include medical patient transportation.  
**CARRIED**
- 6.7.**     [22-572](#)     Regional Housing First Program: Project Update, Third Quarter, 2022  
  
This Informational Report was received for information.
- 6.8.**     [22-538](#)     Development Permit with Variance for Lot 14, Section 97, Sooke District, Plan 14282 - 35 Seagirt Road  
  
That Development Permit with Variance DV000090, for Lot 14, Section 97, Sooke District, Plan 14282, to vary Juan de Fuca Land Use Bylaw No. 2040, Part 2, Section 10.09(b) by reducing the side yard setback requirement from 6 m to 3 m to authorize construction of a single family dwelling with secondary suite and related services, be approved.  
**CARRIED**



- 6.9. [22-537](#) Development Permit with Variance for Strata Lot 5, Section 16, Otter District, Strata Plan VIS7096 - 11-7450 Butler Road
- That Development Permit with Variance DV000087, for Strata Lot 5, Section 16, Otter District, Strata Plan VIS7096 to vary Juan de Fuca Land Use Bylaw, 1992, Bylaw No. 2040, Part 2, Section 27B.09(d)(ii) by reducing the rear yard setback requirement from 4.5 m to 0.6 m for the purpose of constructing an industrial building and to authorize the siting of a permanent shipping container, be approved.
- CARRIED
- 6.10. [22-541](#) Juan de Fuca Water Distribution Service 2023 Operating and Capital Budget
1. Approve the 2023 Operating and Capital Budget and the Five Year Capital Plan;
  2. Approve the 2023 Juan de Fuca Water Distribution Service retail water rate of \$2.5466 per cubic metre, adjusted if necessary, by any change in the Regional Water Supply wholesale water rate;
  3. Direct staff to balance the 2022 actual operating deficit or surplus on the 2022 capital fund transfer; and
  4. Direct staff to amend the Water Distribution Local Service Conditions, Fees and Charges Bylaw accordingly.
- CARRIED
- 6.11. [22-567](#) Regional Water Service 2023 Operating and Capital Budget
1. Approve the 2023 Operating and Capital Budget and the Five Year Capital Plan;
  2. Approve the 2023 wholesale water rate of \$0.7698 per cubic metre;
  3. Approve the 2023 agricultural water rate of \$0.2105 per cubic metre;
  4. Direct staff to balance the 2022 actual revenue and expense on the transfer to the water capital fund; and
  5. Direct staff to amend the Water Rates Bylaw accordingly.
- CARRIED
- 6.12. [22-561](#) Saanich Peninsula Wastewater Service 2023 Operating and Capital Budget
1. Approve the 2023 Saanich Peninsula trunk sewers, treatment and disposal operating and capital budget and the 2023 Saanich Peninsula Liquid Waste Management Plan (LWMP) program budgets including the LWMP administration budget, the Saanich Peninsula Stormwater Quality Management Program budget and the Saanich Peninsula Stormwater Source Control budget, and the Harbours Environmental Action Service (Peninsula) budget;
  2. Direct staff to update carry forward balances in the 2023 Capital Budget for changes after year end; and
  3. Direct staff to balance the 2022 actual revenue and expense on the transfer to capital reserve fund.
- CARRIED

**6.13.**     [22-559](#)           Saanich Peninsula Water Service - 2023 Operating and Capital Budget

1. Approve the 2023 operating and capital budget;
2. Approve the 2023 Saanich Peninsula bulk water rate of \$1.1439 per cubic metre, and Agricultural Research Station water rate of \$1.1791 per cubic metre, adjusted if necessary by any changes in the CRD Regional Water Supply wholesale water rate;
3. Direct staff to balance the 2022 actual revenue and expense on the transfer to capital reserve fund;
4. Direct staff to update carry forward balances in the 2023 Capital Budget for changes after year end; and,
5. Direct staff to amend the Bulk Water Rates Bylaw accordingly.

**CARRIED**

**7. ADMINISTRATION REPORTS****7.1.**     [22-583](#)           CAO Quarterly Progress Report No. 3, 2022

R. Lapham spoke to Item 7.1.

**This Informational Report was received for information.**

**7.2.**     [22-525](#)           Bylaw No. 4513: Revenue Anticipation (General Purpose) Bylaw No. 1, 2022

N. Chan spoke to Item 7.2.

**MOVED by Director Orr, SECONDED by Director Murdoch,**

1. That Bylaw No. 4513, "Revenue Anticipation Borrowing (General Purpose) Bylaw No. 1, 2022", be introduced and read a first, second, and third time.

**CARRIED**

**MOVED by Director Orr, SECONDED by Director Murdoch,**

2. that Bylaw No. 4513 be adopted.

**CARRIED**

7.3. [22-546](#) Bylaw No. 4515: Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022

N. Chan spoke to Item 7.3.

Alternate Director Bateman left the meeting via Electronic Participation at 1:42 pm.

Director Tait joined the meeting in person at 1:42 pm.

**MOVED** by Director Mersereau, **SECONDED** by Director Tait,

1. That Bylaw No. 4515, "Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022", be introduced and read a first, second and third time.

**CARRIED**

**MOVED** by Director Mersereau, **SECONDED** by Director Tait,

2. That Bylaw No. 4515 be referred to the Inspector of Municipalities for approval, and if received, that staff conduct an alternative approval process for the entire service area, as per section 345 of the Local Government Act, and, if successful, that Bylaw 4515 then be brought forward for adoption.

**CARRIED**

7.4. [22-529](#) Bylaw No. 4516: Financial Plan Amendment No. 3, 2022

N. Chan spoke to Item 7.3.

**MOVED** by Director Mersereau, **SECONDED** by Director Helps,

1. That Bylaw No. 4516, "2022 to 2026 Financial Plan Bylaw, 2022, Amendment Bylaw No. 3, 2022", be introduced and read a first, second, and third time.

**CARRIED**

**MOVED** by Director Mersereau, **SECONDED** by Director Williams,

2. That Bylaw No. 4516 be adopted.

**CARRIED**

7.5. [22-565](#) Bylaw No. 4521: Capital Regional District Regional Services Operating Reserve Funds Bylaw No. 1, 2016, Amendment No. 3, 2022

N. Chan spoke to Item 7.5.

**MOVED** by Director Mersereau, **SECONDED** by Director Helps,

1. That Bylaw No. 4521, "Capital Regional District Regional Services Operating Reserve Fund Bylaw No. 1, 2016, Amendment No. 3, 2022", be introduced and read a first, second and third time.

**CARRIED**

**MOVED** by Director Mersereau, **SECONDED** by Director Williams,

2. That Bylaw No. 4521 be adopted.

**CARRIED**

**7.6.**     [22-593](#)           Bylaw No. 4522 - Regional Goose Management Service

L. Hutcheson spoke to Item 7.6.

Discussion ensued regarding:

- implementation of service strategy
- First Nations participation
- ecological and agricultural benefits
- harvesting strategies including non-lethal harvesting
- limitations of service

**MOVED by Director Hicks, SECONDED by Director Mersereau,**

**1. That Bylaw No. 4522, "Canada Goose Management Service Establishment Bylaw No. 1, 2022", be introduced and read a first, second, and third time.**

**CARRIED**

**MOVED by Director Windsor, SECONDED by Director Mersereau,**

**2. That participating area approval be obtained by regional alternative approval process; and**

**3. That Bylaw No. 4522 be forwarded to the Inspector of Municipalities for review of the elector approval method.**

**CARRIED**

**7.7.**     [22-569](#)           Capital Regional District External Grants Update

N. Chan spoke to Item 7.7.

Discussion ensued regarding:

- process of reporting out on grant funding
- quantity of public and confidential grants
- zero emission vehicle
- communications protocol for announcing grant awards

**This Informational Report was received for information.**

**Director Haynes joined the meeting electronically at 1:56 pm.**

**8. REPORTS OF COMMITTEES****Electoral Areas Committee****8.1.**     [22-530](#)           Bylaw No. 4514: Tax Exemption (Permissive) Bylaw, 2022

**MOVED by Director Hicks, SECONDED by Alternate Director Brent,**

**1. That Bylaw No. 4514, "Tax Exemption (Permissive) Bylaw, 2022", be introduced and read a first, second and third time.**

**CARRIED**

**MOVED by Director Hicks, SECONDED by Alternate Director Brent,**

**2. That Bylaw No. 4514 be adopted.**

**CARRIED**

**Environmental Services Committee****8.2. [22-486](#) BC Local Government Climate Action Program - Funding Distribution**

**MOVED by Director Taylor, SECONDED by Director Helps,**

**1. That the funding associated with the new BC Local Government Climate Action Program in 2022, 2023 and 2024 be distributed as follows: \$79,496 for CRD Climate Action Service; \$11,512 for Juan de Fuca Electoral Area; \$24,552 for Salt Spring Island Electoral Area; and \$10,522 for Southern Gulf Islands Electoral Area.**

**2. That the CRD Board allocate \$73,150 of the funding available through reserves to help complete the Vancouver Island and Coastal Communities Climate Leadership Plan.**

**CARRIED**

8.3. [22-566](#) Award of Contract ERM2022-006 - Curbside Collection of Packaging and Printed Paper

**MOVED** by Director Taylor, **SECONDED** by Director Blackwell,

1. That staff be directed to enter into a six-year contract with GFL Environmental Incorporated to provide residential curbside blue box collection from January 1, 2024 to December 31, 2029; and,
2. That the Chief Administrative Officer be authorized to execute the contract and do all things incidental to finalizing the agreement.

Discussion ensued regarding:

- service delivery timeline
- increase in vehicle volume
- in-house service delivery analysis
- procurement method

**Referral Motion**

**MOVED** by Director Isitt, **SECONDED** by Director Loveday,

To refer the report back to staff to undertake a proper business case analysis of in-house delivery of this service and report back to the Board as soon as practical.

Discussion ensued regarding:

- timeline of service
- in-house delivery analysis in future
- funding model
- living wage policy
- service continuity
- update on glass collection
- supply chain issues with creating a new service

The question was called on referral motion:

To refer the report back to staff to undertake a proper business case analysis of in-house delivery of this service and report back to the Board as soon as practical.

**DEFEATED**

Opposed: Blackwell, Brent, Brice, Desjardins, Helps, Hicks, Holman, Martin, McNeil-Smith, Mersereau, Murdoch, Orr, Plant, Ranns, Screech, Seaton, Tait, Taylor, Williams, Windsor, Young

Director Haynes was not present for the vote when called upon by the Chair.

The question was called on the main motion:

1. That staff be directed to enter into a six-year contract with GFL Environmental Incorporated to provide residential curbside blue box collection from January 1, 2024 to December 31, 2029; and,
2. That the Chief Administrative Officer be authorized to execute the contract and do all things incidental to finalizing the agreement.

**CARRIED**

Opposed: Isitt, Loveday

**Motion Arising**

**MOVED** by Director Isitt, **SECONDED** by Director Loveday,

That the Board direct staff to report back to the Finance Committee on a

mechanism for reviewing the delivery model prior to the commencement of procurement for the next recycling collection contract.

**CARRIED**

**Referral Motion**

**MOVED** by Director Screech, **SECONDED** by Director Tait,

That the motion arising be referred to the Environmental Services Committee of the new CRD Board.

**CARRIED**

Opposed: Isitt, Loveday, Ranns

**8.4.**     [22-558](#)     Hartland Area Road Access Mitigation

Discussion ensued regarding:

- technical analysis with regard to the investments
- consultation with community associations and municipal staff
- options for passing lane

**MOVED** by Director Taylor, **SECONDED** by Director Hicks,

1. That Kirk & Co.'s recommended community options be approved and funded to a maximum of \$4 million from the 2023 Environmental Resource Management capital budget; and

2. That staff work with the District of Saanich to finalize the identified intersection improvements prior to moving forward with the Willis Point Road parking lot.

3. That staff reassess options for a passing lane.

**CARRIED**

**Juan de Fuca Land Use Committee**

**8.5.**     [22-539](#)     Zoning Bylaw Amendment to Add Detached Accessory Suite as a Permitted Accessory Use in the Wildwood Terrace 4 (WT-4) Zone

**MOVED** by Director Hicks, **SECONDED** by Director Blackwell,

1. That the referral of proposed Bylaw No. 4496, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022", to the Shirley-Jordan River Advisory Planning Commission, appropriate CRD departments, BC Hydro, District of Sooke, FLNR -Archaeology Branch, FLNR - Ministry of Forests, Lands, Natural Resource Operations and Rural Development, FLNR - Water Protection Section, Island Health, Ministry of Transportation & Infrastructure, Pacheedaht First Nation, RCMP, Sooke School District #62, and T'Sou-ke First Nation be approved and the comments received.

**CARRIED**

**MOVED** by Director Hicks, **SECONDED** by Director Blackwell,

2. That proposed Bylaw No. 4496 be introduced and read a first time and read a second time.

**CARRIED**

**MOVED** by Director Hicks, **SECONDED** by Director Blackwell,

3. That in accordance with the provisions of section 469 of the Local Government Act, the Director for the Juan de Fuca Electoral Area, or Alternate Director, be delegated authority to hold a Public Hearing with respect to Bylaw No. 4496.

**CARRIED**

- 8.6. [22-544](#) Zoning Amendment for That Part of Section 17, Otter District, Lying East of Otter Point Road, Except Parcel C (DD43782I) And Except Parts in Plans 3054 And 17721 - 3542 & 1-3542 Otter Point Road

**MOVED** by Director Hicks, **SECONDED** by Director Blackwell,

a) That the referral of proposed Bylaw No. 4423, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021" to the Otter Point Advisory Planning Commission; the Juan de Fuca Electoral Area Parks and Recreation Advisory Commission; CRD departments; BC Hydro; Department of Fisheries and Oceans; District of Sooke; Ministry of Agriculture; Ministry of Environment and Climate Change Strategy; Ministry of Forests, Lands and Natural Resource Operations; Ministry of Transportation and Infrastructure; RCMP; Sooke School District #62; and T'Sou-ke First Nation be approved and the comments received.

**CARRIED**

**MOVED** by Director Hicks, **SECONDED** by Director Blackwell,

b) That proposed Bylaw No. 4423, "Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021" be introduced and read a first time and read a second time.

**CARRIED**

**MOVED** by Director Hicks, **SECONDED** by Director Blackwell,

c) That in accordance with the provisions of Section 469 of the Local Government Act, the Director for the Juan de Fuca Electoral Area, or Alternate Director, be delegated authority to hold a public hearing with respect to Bylaw No. 4423.

**CARRIED**

- 8.7. [22-599](#) McLoughlin Point Wastewater Treatment Plant - Performance Period Closeout

Discussion ensued regarding:

- public response to odours from the wastewater treatment plant
- contractual obligations

**Motion Arising**

**MOVED** by Director Blackwell, **SECONDED** by Director Seaton,

That the committee request that staff return with a report prior to signing off that outlines the work and commitments that will be done to alleviate odour issues at this plant and that the zoning odour standards are met as per expectations and that the expectations within the Township of Esquimalt letter is addressed.

**CARRIED**

## 9. BYLAWS

There were no bylaws for consideration.

## 10. NOTICE(S) OF MOTION



10.1. [22-619](#) Notice of Motion (same day): GVHA Letter of Support for Shore Power Project Funding (Chair Plant)

Chair Plant proposed the following Notice of Motion with same day consideration:

"Whereas the introduction of Shore Power is in the interests of the Capital Regional District's residents,  
And Whereas the introduction of Shore Power will lessen the carbon footprint of cruise ships and other vessels docking at Ogden Point,  
Be it resolved, That the Chair write a letter of support for funding of this project on behalf of the CRD Board be sent to Dominic LeBlanc, Minister of Intergovernmental Affairs, Infrastructure and Communities.  
And be it further resolved if further opportunities to advocate for the GVHA shore power project in the CRD be available the Board Chair undertake that work."

**MOVED by Director Windsor, SECONDED by Director McNeil-Smith,  
That same day consideration be applied to the Notice of Motion.  
CARRIED**

**MOVED by Director Mersereau, SECONDED by Director Loveday,  
Whereas the introduction of Shore Power is in the interests of the Capital Regional District's residents,  
And Whereas the introduction of Shore Power will lessen the carbon footprint of cruise ships and other vessels docking at Ogden Point,  
Be it resolved, That the Chair write a letter of support for funding of this project on behalf of the CRD Board be sent to Dominic LeBlanc, Minister of Intergovernmental Affairs, Infrastructure and Communities.  
And be it further resolved if further opportunities to advocate for the GVHA shore power project in the CRD be available the Board Chair undertake that work.  
CARRIED**

## 11. NEW BUSINESS

There was no new business.

## 12. MOTION TO CLOSE THE MEETING

12.1. [22-611](#)

Motion to Close the Meeting

**MOVED** by Director Mersereau, **SECONDED** by Director Blackwell,

1. That the meeting be closed for Labour Relations in accordance with Section 90(1)(c) of the Community Charter.

**CARRIED**

**MOVED** by Director Mersereau, **SECONDED** by Director Blackwell,

2. That the meeting be closed for Land Acquisition in accordance with Section 90(1)(e) of the Community Charter.

**CARRIED**

**MOVED** by Director Mersereau, **SECONDED** by Director Blackwell,

3. That such disclosures could reasonably be expected to harm the interests of the Regional District.

**CARRIED**

**MOVED** by Director Mersereau, **SECONDED** by Director Blackwell,

4. That the meeting be closed for Legal Update in accordance with Section 90(1) (i) of the Community Charter.

**CARRIED**

The Capital Regional District Board recessed at 3:12 pm and moved to the Closed Session at 3:49 pm.

**13. RISE AND REPORT**

The Capital Regional District Board rose from its closed session at 4:45 pm without report.

**14. ADJOURNMENT**

**MOVED** by Director Seaton, **SECONDED** by Director Taylor,

That the October 12, 2022 Capital Regional District Board meeting be adjourned at 4:46 pm.

**CARRIED**

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**CHAIR**

**CERTIFIED CORRECT:**

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**CORPORATE OFFICER**

## Meeting Minutes

### Capital Regional District Board

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Wednesday, November 16, 2022

1:00 PM

6th Floor Boardroom  
625 Fisgard Street  
Victoria, BC

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#### Special Meeting - Inaugural

#### PRESENT

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

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

Guest: R. Bortolin; Stewart McDannold Stuart, Barristers & Solicitors

Regrets: Director(s) B. Desjardins

#### 1. CALL TO ORDER

The Chief Administrative Officer called the meeting to order at 1:02 pm.

#### 2. TERRITORIAL ACKNOWLEDGEMENT

The Chief Administrative Officer provided the Territorial Acknowledgement.

### 3. ELECTION OF CRD BOARD CHAIR

The Chief Administrative Officer called for nominations for the position of Chair of the Capital Regional District Board for 2023.

Director Kobayashi nominated Director Windsor. Director Windsor accepted the nomination.

The Chief Administrative Officer called for nominations a second time.

Director Brice nominated Director Plant. Director Plant accepted the nomination.

The Chief Administrative Officer called for nominations a third time.

Director Wickheim nominated Director Williams. Director Williams accepted the nomination.

Hearing no further nominations, the Chief Administrative Officer invited each nominee to address the Board.

Ballots were distributed by K. Morley and M. Lagoa, and collected by M. Lagoa.

The ballots were counted by K. Morley, M. Lagoa, and R. Bortolin, Solicitor.

The Chief Administrative Officer declared Director Plant Chair of the Capital Regional District Board.

**MOVED by Director Tait, SECONDED by Director McNeil-Smith,  
That the ballots be destroyed.  
CARRIED**

### 4. ELECTION OF CRD BOARD VICE CHAIR

Chair Plant called for nominations of Vice Chair of the Capital Regional District Board for 2023.

Director de Vries nominated Director Tait. Director Tait accepted the nomination.

Chair Plant called for nominations a second time.

Chair Plant called for nominations a third and final time.

Hearing no further nominations, Chair Plant declared Director Tait Vice Chair of the Capital Regional District Board by acclamation.

### 5. HOUSING CORPORATION APPOINTMENTS

**5.1. [22-625](#) Appointment of Capital Region Housing Corporation Board**

K. Morley spoke to Item 5.1.

**MOVED** by Director Murdock, **SECONDED** by Director Alto,

**That the Capital Regional District Board:**

- 1. Resolve to appoint its directors as the directors of the Capital Region Housing Corporation;**
- 2. Resolve to exercise its single Capital Region Housing Corporation share in the form attached as Appendix A; and**
- 3. Instruct staff as the shareholder's representative to execute the special resolution in the form attached as Appendix A with immediate effect.**

**CARRIED**

**6. RECESS FOR MEETING OF THE CAPITAL REGIONAL HOSPITAL DISTRICT BOARD AND THE CAPITAL REGION HOUSING CORPORATION BOARD**

**MOVED** by Director Murdoch, **SECONDED** by Director Brent,

**That the meeting be recessed for the meetings of the Capital Region Housing Corporation Board and Capital Hospital Board.**

**CARRIED**

**The meeting recessed at 1:21 pm.**

**The meeting reconvened at 2:15 pm.**

**7. INAUGURAL ADDRESS OF THE CHAIR**

Thank you for supporting me as your Chair. It is truly an honour. I did speak for nearly four minutes during the election so I will be briefer. However, I do want to mention a few items. As you know, we will undertake Strategic Priority setting on Nov 30th. It is very important that you come to this meeting with some ideas on how you want to see the organization move forward. Of course we are not starting from scratch. Our current priorities are large in scope and are addressed through the staff's corporate plan. Current priorities include Community Wellbeing, Transportation and Housing, Climate Actions and Environmental Stewardship, First Nations Reconciliation, Advocacy, Governance and Accountability. I am confident that these priorities will get full consideration. It is also important to note that three items have been passed forward from the previous Board to this Strategic Planning session; Transportation Priorities, Arts Service participation, and the discussion on an Arts Facilities service. As to committees, you heard from Kristen that the Chair populates the committees and the chairs/vice-chairs. You will be receiving an email tomorrow with a request for you to indicate your interest. This will need to be completed in one week so by the end of next Wednesday. I also welcome phone call if you want to discuss your interests on committees. And finally, I would like to formally encourage you to work with staff and get to better know this organization. As you saw this morning, there is a lot that goes on in the CRD. And like your jurisdictions, staff are our greatest assets. Now let's get on with the meeting.

## 8. APPROVAL OF THE AGENDA

**MOVED** by Director Wickheim, **SECONDED** by Director Williams,  
That the rules of the Capital Regional District Board Procedures Bylaw be  
suspended to allow a Notice of Motion to be read in at the Special meeting.

**CARRIED**

Opposed: Jones, Windsor

**MOVED** by Director Brent, **SECONDED** by Director Thompson,  
That the agenda for the November 16, 2022 Session of the Capital Regional  
District Board be approved with the addition of the following item:

- 11. Notice of Motion

**CARRIED**

## 9. PRESENTATIONS/DELEGATIONS

There were no presentations or delegations.

## 10. SPECIAL MEETING MATTERS

### 10.1. [22-627](#) 2022 General Local Election and Assent Voting Results

K. Morley spoke to Item 10.1.

**This Informational Report was received for information.**

### 10.2. [22-626](#) Greater Victoria Harbour Authority Board - Request for Nominees

K. Morley spoke to Item 10.2.

**MOVED** by Director Brice, **SECONDED** by Director Williams,  
That Directors interested in serving as Member Director on the Greater Victoria  
Harbour Authority Board submit their cover letter and resume to the CRD Board  
Chair by November 25, 2022; and that the CRD Board Chair forward the name of  
three nominees to the Greater Victoria Harbour Authority by November 30, 2022.

**CARRIED**

**10.3.** [22-622](#) BC Active Transportation Infrastructure Grants Program - Resolution for Mayne Island Regional Trail - Phase 1 Development

L. Hutcheson spoke to Item 10.3.

Discussion ensued regarding:

- project time line and phases
- islands tour opportunities for Directors
- involvement and support from community
- funding source and contributions

**MOVED by Director Brent, SECONDED by Director Williams,  
That the Capital Regional District Board confirm submission authorization of the BC Active Transportation Infrastructure Grants application for the Mayne Island Regional Trail - Phase 1 Development Project; provide confirmation that the funding share for the shovel-ready priority project is available and supported with a construction completion date of before March 2025; and direct staff to provide overall grant management.**

**CARRIED**

**10.4.** [22-623](#) Bylaw No. 4529: Financial Plan Amendment No. 4, 2022

N. Chan spoke to Item 10.4.

**MOVED by Director McNeil-Smith, SECONDED by Director Brice,  
1. That Bylaw No. 4529, "2022 to 2026 Financial Plan Bylaw, 2022, Amendment Bylaw No. 4, 2022", be introduced and read a first, second, and third time.**

**CARRIED**

**MOVED by Director McNeil-Smith, SECONDED by Director Brice,  
2. That Bylaw No. 4529 be adopted.**

**CARRIED**

**10.5.** [22-630](#) Referral of Motion Arising - Request for Regional Transportation Priorities Update.

K. Lorette spoke to Item 10.5.

**MOVED by Director Windsor, SECONDED by Director Brent,  
To refer an update on the status of advancing the regional transportation priorities to Transportation Committee in 2023 and refer to Board Strategic Planning, exploration of options for next steps in governance for transportation in the region.**

**CARRIED**

- 10.6. [22-585](#) Development Permit with Variance for Lot 1, Section 9, Otter District, Plan 12535 - 8492 West Coast Road

K. Lorette spoke to Item 10.6.

**MOVED by Director Wickheim, SECONDED by Director Tait, That Development Permit with Variance DV000086 for Lot 1, Section 9, Otter District, Plan 12535, to authorize the subdivision and proposed development of land designated as Steep Slopes and Sensitive Ecosystems Development Permit Areas; and to vary Juan de Fuca Land Use Bylaw, 1992, Bylaw No. 2040, Part 2, Section 3.10(4) by reducing the minimum frontage requirement for proposed Lot A from 10% of the lot perimeter (116.9 m) to 2.8% of the lot perimeter (33 m), as shown on the plans prepared by McIlvaney Riley Land Surveying Inc., dated January 14, 2022, be approved.**

**CARRIED**

- 10.7. [22-586](#) Development Permit with Variance for Section 41, Otter District as Shown on Plan Deposited Under DD 55112I - Clark Road

K. Lorette spoke to Item 10.7.

**MOVED by Director Wickheim, SECONDED by Director Tait, That Development Permit with Variance DV000089 for Section 41, Otter District as Shown on Plan Deposited Under DD 55112I to authorize the subdivision of land designated as Steep Slopes, Watercourses and Wetland Areas, and Sensitive Ecosystems Development Permit Areas; and to vary Juan de Fuca Land Use Bylaw, 1992, Bylaw No. 2040, Part 2, Section 3.10(4) by reducing the minimum frontage requirement for:**

- a) proposed Lot 3 from 10% of the lot perimeter (88 m) to 7.5% of the lot perimeter (66 m);
- b) proposed Lot 7 from 10% of the lot perimeter (119 m) to 0.5% of the lot perimeter (6 m); and
- c) proposed Lot 18 from 10% of the lot perimeter (141 m) to 0.46% of the lot perimeter (6.5 m)

**as shown on the plan prepared by J.E. Anderson, revised September 21, 2022, be approved.**

**CARRIED**

## 11. Notice of Motion

- 11.1. **22-639** Notice of Motion

Director Wickheim provided the following Notice of Motion for consideration at the next meeting of the Capital Regional District Board meeting:

"Move that discussion relating to the aquaculture proposal for the Sooke basin be brought for discussion at the next Board meeting".

Director Holman provided the following Notice of Motion for consideration at the next meeting of the Electoral Areas Committee meeting:

"That the Electoral Area Director remuneration be maintained at 2022 levels for 2023".



**12. MOTION TO CLOSE THE MEETING**

12.1. [22-624](#) Motion to Close the Meeting

**MOVED** by Director Tait, **SECONDED** by Director Murdock,  
That the meeting be closed for Labour Relations in accordance with Section 90(1)  
(c) of the Community Charter.  
**CARRIED**

The Capital Regional District Board moved to the Closed Session at 2:59 pm.

**13. RISE AND REPORT**

The Capital Regional District Board rose from the Closed Session at 3:23 pm  
without report.

**14. ADJOURNMENT**

**MOVED** by Director Alto, **SECONDED** by Director Brent,  
That the November 16, 2022 Capital Regional District Board meeting be  
adjourned at 3:24 pm.  
**CARRIED**

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**CHAIR**

**CERTIFIED CORRECT:**

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**CORPORATE OFFICER**

## Meeting Minutes

### Performing Arts Facilities Select Committee

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Wednesday, January 19, 2022

9:30 AM

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

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#### PRESENT

Directors: C. Plant (Chair) (EP), D. Screech (Vice Chair) (EP), M. Alto (for L. Helps) (EP), G. Holman, P. Brent (for D. Howe) (9:37 am EP), J. Loveday (EP), C. McNeil-Smith (EP), R. Mersereau (EP), L. Seaton (EP), N. Taylor (9:33 am EP), K. Williams (EP)

Staff: N. Chan, Chief Financial Officer; K. Morley, General Manager, Corporate Services; C. Gilpin, Manager, Arts & Culture; M. Lagoa, Deputy Corporate Officer; T. Pillipow, Committee Clerk (Recorder)

EP - Electronic Participation

Regrets: L. Helps, D. Howe, R. Martin, K. Murdoch

The meeting was called to order at 9:30 am.

#### 1. Territorial Acknowledgement

Chair Plant provided a Territorial Acknowledgement.

#### 2. Approval of Agenda

**MOVED** by Director Seaton, **SECONDED** by Alternate Director Alto,  
That the agenda for the January 19, 2022 Performing Arts Facilities Select  
Committee meeting be approved.  
**CARRIED**

#### 3. Adoption of Minutes

3.1. [22-038](#) Minutes of the December 8, 2021 Performing Arts Facilities Select  
Committee Meeting

**MOVED** by Director Loveday, **SECONDED** by Director McNeil-Smith,  
That the minutes of the Performing Arts Facilities Select Committee meeting of  
December 8, 2021 be adopted as circulated.  
**CARRIED**

#### 4. Chair's Remarks

Chair Plant welcomed the committee to the meeting, and reviewed the  
electronic participation etiquette.

#### 5. Presentations/Delegations

There were no presentations or delegations.

## 6. Committee Business

### 6.1. [22-042](#) 2022 Performing Arts Facilities Select Committee Terms of Reference

N. Chan spoke to Item 6.1.

**MOVED by Alternate Director Alto, SECONDED by Director Seaton,  
The Performing Arts Facilities Select Committee recommends to the Capital  
Regional District Board:**

**That the 2022 Performing Arts Facilities Select Committee Terms of Reference  
attached at Appendix A be approved.**

**CARRIED**

### 6.2. [22-040](#) Costs and Timeline Associated with a Region-Wide Referendum on a Full Regional Performing Arts Facilities Service

N. Chan introduced C. Gilpin who spoke to Item 6.2.

Discussion ensued on the following:

- cost increases due to multiple questions in a referendum
- municipal cooperation required to include referendum questions on municipal ballots
- the interpretation of voting results
- timing for reconsideration of establishment by way of an alternative approval process
- 2022 and 2023 budgetary concerns if this item goes to the March Board meeting

**Alternate Director Brent left the meeting at 10:06 am.**

**MOVED by Director Seaton, SECONDED by Director Williams,  
That the Costs and Timeline Associated with a Region-Wide Referendum on a  
Full Regional Performing Arts Facilities Service report be received for  
information and policy options for sub-regional performing arts facilities services  
be considered.**

**Director Loveday requested to amend the motion to include Alternative 2 of the  
staff report, and the Chair did not allow.**

**Director Loveday challenged whether the Chair be sustained in his ruling to  
disallow the amendment to the motion.**

**SUSTAINED**

**OPPOSED: Alto, Loveday, Taylor**

**The question was called on the main motion.**

**MOVED by Director Seaton, SECONDED by Director Williams,  
That the Costs and Timeline Associated with a Region-Wide Referendum on a  
Full Regional Performing Arts Facilities Service report be received for  
information and policy options for sub-regional performing arts facilities services**

be considered.

**DEFEATED**

**OPPOSED:** Alto, Loveday, McNeil-Smith, Mersereau, Plant, Screech, Taylor

**MOVED** by Director McNeil-Smith, **SECONDED** by Director Mersereau,  
That this report be referred to the February meeting of the CRD Board without  
recommendation.

Director Taylor left the meeting at 10:31 am.

**MOVED** by Director McNeil-Smith, **SECONDED** by Director Mersereau,  
That the motion be amended to replace the word "February" with the word  
"March".

**DEFEATED**

**OPPOSED:** Alto, Holman, Loveday, Seaton, Williams

The question was called on the main motion.

**MOVED** by Director McNeil-Smith, **SECONDED** by Director Mersereau,  
That this report be referred to the February meeting of the CRD Board without  
recommendation.

**CARRIED**

**OPPOSED:** Alto, Loveday, Plant

- 6.3.**     [21-877](#)     Advancing a Full Regional Performing Arts Facilities Service without  
Alternative Approval Process

**Postponed pending the results of agenda item 6.2. at Board.**

- 6.4.**     [21-878](#)     Options for Sub-regional Performing Arts Facilities Services

**Postponed pending the results of agenda item 6.2. at Board.**

## **7. Notice(s) of Motion**

There were no notice(s) of motion.

## **8. New Business**

There was no new business.

## **9. Adjournment**

**MOVED** by Alternate Director Alto, **SECONDED** by Director Seaton,  
That the January 19, 2022 Performing Arts Facilities Select Committee meeting  
be adjourned at 10:48 am.

**CARRIED**

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CHAIR

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RECORDER

## Meeting Minutes

### Committee of the Whole

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Wednesday, November 30, 2022

10:45 AM

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

---

#### Special Meeting

#### PRESENT

DIRECTORS: C. Plant (Chair), M. Tait (Vice Chair), M. Alto (11:53 am), P. Brent, S. Brice, J. Brownoff, J. Caradonna, C. Coleman, B. Desjardins, Z. de Vries, S. Goodmanson, G. Holman, P. Jones, D. Kobayashi, M. Little, C. McNeil-Smith, K. Murdoch, D. Murdock, S. Riddell (for R. Windsor), L. Szpak, D. Thompson, S. Tobias, A. Wickheim, K. Williams

STAFF: T. Robbins, Chief Administrative Officer; N. Chan, Chief Financial Officer; L. Hutcheson, General Manager, Parks and Environmental Services; K. Lorette, General Manager, Planning and Protective Services; S. Carey, Acting General Manager, Corporate Services; I. Jesney, Acting General Manager, Integrated Water Services; F. Lopez, Manager, Strategic Planning; E. Sinclair, S Senior Manager, Regional and Strategic Planning, S. Orr, Senior Committee Clerk, T. Pillipow, Committee Clerk (Recorder)

Guests: N. Hill and H. Farson, Spur Communication

Regrets: Director R. Windsor

The meeting was called to order at 10:46 am.

#### 1. Territorial Acknowledgement

Chair Plant provided a Territorial Acknowledgement.

#### 2. Approval of Agenda

**MOVED** by Director Coleman, **SECONDED** by Director Little,  
That the agenda for the November 30, 2022 Session of the Committee of the  
Whole be approved.  
**CARRIED**

#### 3. Presentations/Delegations

There were no presentations.

#### 3.1. Delegations

3.1.1. [22-655](#) Delegation - Yvonne Mendel; Representing South Island Mountain Bike Society: Re: Agenda Item 4.1.: Strategic Planning Session 1

Y. Mendel spoke to Item 4.1.

3.1.2. [22-656](#) Delegation - Allen Agopsowicz; Representing South Island Climbers Association: Re: Agenda Item 4.1.: Strategic Planning Session 1

A. Agopsowicz spoke to Item 4.1.

#### 4. Special Meeting Matters

**MOVED by Director Desjardins, SECONDED by Director McNeil-Smith,  
That the rules of procedure be suspended to hold a workshop meeting.  
CARRIED**

4.1. [22-638](#) Strategic Planning Session 1

The Committee participated in a strategic priority setting workshop facilitated by Spur Communication.

The meeting recessed at 11:56 am.  
The meeting reconvened at 1:15 pm.

#### 5. Adjournment

**MOVED by Director Brice, SECONDED by Director McNeil-Smith,  
That the November 30, 2022 Committee of the Whole meeting be adjourned at  
4:00 pm.  
CARRIED**

---

CHAIR

CERTIFIED CORRECT:

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CORPORATE OFFICER



Making a difference...together

## REPORT TO ELECTORAL AREAS COMMITTEE MEETING OF WEDNESDAY, DECEMBER 14, 2022

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**SUBJECT**     **British Columbia Structure Firefighter Minimum Training Standards**

### **ISSUE SUMMARY**

The Province of British Columbia updated minimum training standards for fire services in September 2022 (Appendix A). These standards reinforce the Regional District's role as Authority Having Jurisdiction (AHJ) for 11 Electoral Area (EA) fire services. Staff, commissions, societies, and departmental leadership are working together to support firefighter safety, understand regulatory implications, and plan for implementation.

### **BACKGROUND**

The Office of the Fire Commissioner (OFC) recently amended the *British Columbia Structure Firefighter Minimum Training Standards*. Under the *Fire Services Act*, the OFC establishes standards for training of fire service personnel in BC. Previous standards (known as the 'Playbook') were established in 2015. These apply to the 11 Capital Regional District (CRD) fire services in the Southern Gulf Island and Juan de Fuca EAs. Fire services must begin training to meet the new standards by March 2024.

Although the service level framework remains consistent, there are notable changes to roles and responsibilities. Levels of service categories are unchanged: Exterior (activities external to a building), Interior (entry into simple structures), and Full-Service Operations (full range of activities). However, permitted activities within the categories have been revised. New competencies were added for Drivers, Safety Officers, and Incident Commanders and additional occupational health and safety standards are required.

The OFC also clarified expanded responsibilities for Local Government in fire service compliance. Previously, it was unclear whether CRD or a not-for-profit society would be held responsible for regulatory compliance as AHJ where there is a contract for service (e.g., Pender and South Galiano Island Fire Services), or contribution service (e.g., Saturna Island Fire Service). OFC Policy 3.200 designates the AHJ as "the Local Authority that has decided to provide with voted approval from residents and has defined a fire department service through an establishment bylaw, service bylaw or statute that provides expenditure of collected tax funds...". AHJ designation places new liabilities and obligations on the CRD. Implications will be considered during an upcoming review of fire service delivery models.

Meeting the new standards will require a collaborative approach between CRD staff, commissions, societies, and chief officers. Previous reviews of CRD fire training programs in 2015 and 2020 found deficiencies across all departments. Staff are currently assessing training equivalencies with each department to understand training and curriculum needs. Once a baseline is established, all parties will contribute to determining a strategy for compliance. Approaches may include pooling departmental resources, establishing training agreements with neighboring fire services, expanding training officer capacity, and employing third-party educators.



## **ALTERNATIVES**

### *Alternative 1*

The Electoral Areas Committee recommends to the Capital Regional District (CRD) Board: To direct CRD staff to proceed with Electoral Area fire service consultation to determine requirements to comply with British Columbia Structure Firefighter Minimum Training Standards, implement an appropriate training program no later than Q1 2024, and adjust the future fire service budgets accordingly.

### *Alternative 2*

That the Fire Minimum Training Standards report be referred back to staff for additional information based on Electoral Areas Committee direction.

## **IMPLICATIONS**

### *Financial Implications*

No initiatives to increase fire service requisition are proposed in this report. However, it is reasonable to expect compliance with new regulations to require additional expenses on fire services in future years.

### *Service Delivery Implications*

Community volunteers in fire departments, societies, and commissions are subject to a growing administrative burden exacerbated by expanding provincial regulations. Staff have several initiatives to reduce the burden and support the vital work they do. The modernized Fire Records Management System project, beginning Q1 2023, will help facilitate training and record-keeping compliance.

## **CONCLUSION**

The CRD supports firefighter and resident safety in its EAs as AHJ for 11 fire services. Staff, commission, societies, and chief officers are working together to understand and comply with new provincial regulations on firefighter training. This report summarizes the changes and ongoing implementation work.

## **RECOMMENDATION**

The Electoral Areas Committee recommends to the Capital Regional District (CRD) Board: To direct CRD staff to proceed with Electoral Area fire service consultation to determine requirements to comply with British Columbia Structure Firefighter Minimum Training Standards, implement an appropriate training program no later than Q1 2024, and adjust the future fire service budgets accordingly.

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

## **ATTACHMENTS**

Appendix A: British Columbia Structure Firefighter Minimum Training Standards

# British Columbia

## Structure Firefighter

### Minimum Training Standards



Office of the  
Fire Commissioner  
Emergency Management BC



Third Edition: September 2022

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## Table of Amendments

Description	Effective Date
Original document issued	September 2014
Amended	May 2015
Amended	September 2022

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## Introduction

In 2014, the British Columbia Structure Firefighter Minimum Training Standards (formerly referred to as “Playbook”) replaced the previous OFC firefighter training standards (a Minister Order that made the full National Fire Prevention Association (NFPA) firefighter 1001 the standard) that was effective as of January 1, 2003. The “Playbook” introduced revised and appropriate training requirements for the Authority Having Jurisdiction (AHJs) for their established fire departments, which continues with this updated version of the **BC Structure Firefighter Minimum Training Standards** (the ‘Training Standards’).

Office of the Fire Commissioner (OFC) - the Fire Commissioner is the senior provincial fire prevention authority in BC. Under the *Fire Services Act* the Fire Commissioner must support the fire prevention and suppression activities of local governments specifically by establishing the standards for selection and training of fire service personnel.

Local Governments - local authorities, as defined in OFC policy, (also referred to as Authority Having Jurisdiction - AHJ) have the role and responsibility to determine and deliver fire suppression and fire protection services to the residents in all or in any defined area of their community or jurisdiction. The establishment and provision of fire services is typically based on the community’s desire and willingness (normally through property taxes) to support this important local government service.

Fire Service - this term encompasses all structure fire suppression and prevention activities provided by local fire departments and individual firefighters of a local authority fire department.

## Authority and Purpose

Under paragraph 3(3)(b) of the *Fire Services Act*, the Fire Commissioner must establish the minimum standards of training required for fire services personnel in British Columbia.

Amendments shall be shared by being posted to the Province of BC website.

The Office of the Fire Commissioner has a unique and separate mandate within the organization of Emergency Management BC (EMBC). All Policies, Principles, Concepts, Terms and Definitions formerly embedded within this Training Standards document have been removed, updated, and are now found on the OFC Policy webpage.

The objective for the Training Standards is to identify the competencies and skills that all structure firefighters must have to enhance their personal safety and wellbeing while performing the functions of a firefighter for their community.

## Other Important Statutes

It is recognised that there are other statutory or regulatory requirements on fire services that have influence; by legislation and from organizations other than the OFC. While some important statutes are listed below, this is not an exhaustive list. Local governments, the owners and employers of the fire department and personnel, should maintain familiarity with all relevant legislations, regulations and standards that affect the management of fire services in their jurisdiction.

### **Motor Vehicle Act**

Understanding that fire departments may be operating large fire apparatus vehicles, it was determined that minimum driving requirements be included in the Training Standards. There are significant driver licensing and insurance considerations that must be addressed for a structure firefighter to operate this equipment effectively and safely for their department. These items are referenced in the Apparatus Driver sections of the Exterior and Interior Operations level competency matrix charts.

### **Workers Compensation Act and Occupational Health & Safety Regulations**

In BC, all employers are required to ensure that their employees are properly trained for their assigned jobs and properly supervised while performing their jobs or tasks. There are clear expectations identified by WorkSafeBC regarding the roles and responsibilities of Employers and Workers (AHJ and fire service members) in the *Workers Compensation Act (WCA)* and relevant *Occupational Health and Safety regulations (OHS Regulations)*.

The responsibility for providing workers with the necessary information, instruction, training, and supervision generally rests with the employer (WCA s. 21(2)(e)). There are also circumstances where an employer will have a general duty to ensure the health and safety of other workers at a workplace (WCA s.21(1)(a)(ii)).

WorkSafeBC OHS Regulation has some core worker safety requirements that apply to all workplaces including:

- Part 3: Rights and Responsibilities -- a workplace health and safety program, investigations and reports, workplace inspections, the right to refuse work and first aid.
- Part 4: General Conditions -- workplace safety, building and equipment safety, emergency preparedness, preventing violence, working alone, ergonomics, illumination, indoor air quality, smoking, and lunchrooms.
- Parts 5-19: General Hazard Requirements deal with general hazards found in several workplaces, usually higher-hazard operations. Topics include the safe use of chemicals, confined space entry procedures, guarding of machinery and the use of mobile equipment.

The OFC Training Standards is focussed on the expectations identified by WorkSafeBC regarding workers involved in structure firefighting – OHS Regulation Part 31: Firefighting which can be found here:

<https://www.worksafebc.com/en/law-policy/occupational-health-safety/searchable-ohs-regulation/ohs-regulation/part-31-firefighting>

With particular focus on:

- Sec 31.2 – Application;
- Sec 31.4 – Instruction and Direction: The employer must ensure the adequate instruction and direction of structure firefighters in the safe performance of their duties;
- Sec 31.5 – Procedures: Outlines written procedures that must be established and followed by a fire department;
- Sec 31.10 to 31.18 - outline provisions for Personal Protective Clothing and Equipment;
- Sec 31.18 to 31.26 - outline provisions for Respirators, which includes the requirements for use of SCBA and corresponding requirements for Entry into Buildings;
- Sec 31.27 to 31.32 - outline provisions for Transportation;
- Sec 31.33 to 31.37 - outlines provisions for Aerial Devices and Ground Ladders; and
- Sec 31.38 to 31.39 - outlines provisions for Other Equipment including flashlights, hand lanterns, plaster hooks and pike poles.

In addition, WorkSafeBC provides associated OHS Guidelines for many of the OHS Regulation sections that are intended to assist users of their documents in the interpretation and application.

### **Amendments to the Criminal Code of Canada**

Bill C-45 (Westray Mines Bill) amended the Canadian *Criminal Code* (section 217.1) and established legal duties for workplace health and safety and imposed serious penalties for violations that result in worker injuries or death. The Bill introduced rules attributing criminal liability to organizations, including corporations, their representatives and those who undertake, or have the authority, to direct how another person does work or performs a task.

This implication imposes significant importance upon the AHJ, fire service leaders and the individual firefighter to establish, implement and enforce these Training Standards.

## Important Considerations for Authority Having Jurisdiction

The current edition of the Training Standards includes more detailed lists of training competencies in specific skill areas required for a local government's fire department to safely operate at an emergency fire incident. Skills related to the functions of Apparatus Driver, Team Leader (Exterior and Interior), Incident Safety Officer, and Incident Commander (Exterior and Interior) are addressed to enable a fire department to deliver safe fire services at the AHJ's intended service levels and within the firefighter safety OHS Regulation requirements.

It is recognized that some of the competencies may not be applicable for all jurisdictions (e.g., fire hydrants). Therefore, the AHJ can identify the competencies that do or do not have application in their jurisdiction. Where the firefighter training is to be reduced based on local circumstances, these reductions must be identified in the fire department's training program and testing processes as well as in departmental Operating Guidelines. If these reductions affect the fire department's service capacity or service level, they must be reflected in the AHJ's Fire Service Level Declaration.

The determination and declaration of a service level for a local government fire department is intended to assist in the development of a training program for their structure firefighters. The training program is expected to enable the department personnel that attends a fire scene will have the skills and abilities to safely and effectively deliver, fire services to the declared service level.



## BC Structure Firefighters Minimum Training Standards Manual

### Competency Matrix

This summary is provided to assist fire departments and AHJs when examining the Competency Matrix defined in the Training Standards for developing or modifying their respective structure firefighter training program. Readers should review the more detailed explanations of these individual requirements and refer to the appropriate identified NFPA standards, the *Workers Compensation Act*, the *Motor Vehicle Act*, and any other referenced regulations.

- Determination by the AHJ of the service level appropriate to their community needs is critical and the Training Standards document is based on three general service level categories:
  - Exterior Operations Level;
  - Interior Operations Level; and,
  - Full-Service Operations Level.
- Ensure the service level is correctly identified and declared in bylaw, policy statement, statute, or contract establishing a fire department's authority and anticipated capability.
- Ensure a training program to match the declared service level is in place that includes a comprehensive process for recording and retaining training records and at least meets the intent of the OHS Regulations 3.22 to 3.25.
- AHJ has registered with WorkSafeBC for structure firefighter coverage.
- WorkSafeBC worker safety and functional requirements are in place (*e.g., firefighter fitness records, Employer/Worker joint safety committee (or worker representative), OH&S program, OGS covering fundamental operational procedures, etc.*).
- Appropriate equipment, apparatus, personnel, and training is provided to deliver the declared service level capabilities and requirements.

The specific nature of an emergency fire incident will have a direct influence on the type of roles/positions and numbers of personnel required to manage a given incident. The typical roles or positions required on the "fire ground" to manage most fire-involved structures incidents are common from one situation to another.

The Training Standards has established a functional Competency Ladder (see Appendix A) that identifies the minimum competencies necessary to perform many of the typical roles or functions required for fire departments to effectively provide structural fire suppression services to their community at each of the defined service levels.



## All Levels of Fire Services

### **Risk Management Function:**

The responsibility for the Risk Management function typically is encompassed within the Fire Chief position/role. However, recognizing the challenge that this may pose on many small AHJs, this function may be delegated to another member of the fire department or even shared by the AHJ OHS staff, depending on the composition and structure of the department and local government. This individual(s) needs to have significant structure firefighting experience and/or appropriate training to ensure that they understand the administrative functions, structures and processes that must be in place to guide a fire department's training, safety programs and resultant operational capabilities.

The Risk Management function is not an operational role in a fire incident response but must be formally addressed by all fire departments. The individual(s) who fulfil this function is responsible for ensuring that the department has in place Operational Guidelines (OGs), training programs and other oversight processes that ensure safe and effective operations at all fire department involved incidents. In the Training Standards, the term Risk Management is applied to identify the individual responsible for overseeing the development and implementation of any processes which are necessary to ensure a fire department's practices are planned for, safe, and effective at any fire ground operations as a matter of principle.

## Risk Management – JPRs/Competencies

**SCOPE:** The Risk Management Role is an administrative function that provides guidance and oversight to ensure compliance with the Training Standards and other firefighter safety regulations and requirements. While these duties are typically performed by the fire chief, the responsibilities can be distributed among more than one person where required.

### REQUIREMENTS:

*All applicable Firefighter competencies based upon the declared level of service plus, completion of the following:*

NFPA 1250 (2020) - 4.1, 4.3, 4.4, 4.5, 4.6, 4.7, 7.1, 8.1, 9.1, 9.2, 9.3, 9.4, 9.5

NFPA 1500 (2018) - 4.1, 4.2

NFPA 1500 (2018 edition) - 5.1, 5.2, 5.3, 5.4, 5.5, 5.6

NFPA 1401 (2019) - Recommended Practice for Fire Service Training Reports and Records

#### *In-depth Knowledge of:*

OHS Regulation Part 3.1, 3.2, 3.3 (OHS Program) 3.22, 3.23, 3.24, 3.25

OHS Regulation Part 31.5 Procedures

OHS Regulation Part 31 - General: 31.12, 31.13, 31.14, 31.15, 31.16, 31.17 and 31.18

OHS Regulation Part 31 - Respiratory Program: 31.19, 31.20, 31.21, 31.22, 31.23, 31.24, 31.25 and 31.26

OHS Regulation Part 31 - Other Equipment: 31.27, 31.28, 31.29, 31.32, 31.33, 31.34, 31.35, 31.36 and 31.37

#### *General knowledge of:*

British Columbia *Interpretation Act, Community Charter, or Local Government Act*

- Fire department bylaw
- Bylaw reflecting services provided by the fire department
- Fire protection district boundaries
- Emergency Health Services regarding First Responder Program
- Fire service-related agreements for:
  - inspections, investigations, rescue services, etc.
- Written Mutual Aid agreements
- Automatic Aid agreements

Local Government Management Association (LGMA) Records Management Records (2017), Retention and Scheduling

Local government requirements for writing the hiring and evaluation policy or practices for new recruits.

## Exterior Operations Level

All functions within the Exterior Operations Level conduct structure firefighting activities from the outside of structures and are not provided with any training to safely enter any structure in an active fire incident. Exterior Operations Firefighters must not perform any fire suppression activity that requires entry into any structure, building, vehicle, dumpster, or other object regardless of an Immediately Dangerous to Life or Health (IDLH) or harmful atmosphere is present or not. Exterior Operation Firefighters must only engage in external fire suppression and/or mitigation activities. Operational Guidelines that restrict them to Exterior Operations must be written and enforced by the local fire department, even though they may possess equipment that would otherwise permit them to respond in a more complex manner.

In all fire scenes where there is a potential risk of an IDLH atmosphere developing, or risk of exposure exists from smoke, particulate matter, or products of combustion, even when conducting external operations, SCBA must be worn in accordance with WorkSafeBC OHS Regulation requirements.

Team leaders (Exterior) and Incident Commanders (Exterior) are trained to supervise exterior operations only.

The Exterior Operations Service Level applies to all external fire ground operational functions except support positions such as, but not restricted to: first aid, first medical responder, critical incident stress support, hazardous spill response, etc. Specific training is required for these functions, applicable to the hazards involved, and must be addressed elsewhere in departmental training programs.

## Exterior Operations Firefighter – JPRs/Competencies

**Scope:** Operating outside of a structure at the task level, the Exterior Operations Firefighter applies the following competencies to perform fire ground tasks as assigned by the Team Leader (Exterior) or Incident Commander (Exterior) in accordance with the Incident Action Plan (IAP).

### Requirements:

*Must meet the following NFPA Job Performance Requirements and related competencies below:*

#### General Knowledge, Safety and Communications:

NFPA 1001 (2019 edition) – 4.1: 4.1.1, 4.1.2  
4.2: 4.2.1, 4.2.2, 4.2.3, 4.2.4  
4.3: 4.3.2  
NFPA 1500 (2018 edition) – 8.1  
8.2: 8.2.1 to 8.2.5.2  
8.5

#### Personal Protective Clothing & Equipment, Self Contained Breathing Apparatus:

NFPA 1001 (2019 edition) – 4.1: 4.1.2  
4.3: 4.3.1, 4.3.2  
4.5: 4.5.1  
WorkSafeBC OHS Regulations Part 31 (31.10 to 31.26 & 31.38)

#### Water Supply:

NFPA 1001 (2019 edition) – 4.3: 4.3.15  
4.5: 4.5.1, 4.5.2

#### Hose Lines, Nozzles and Appliances, and Fire Streams:

NFPA 1001 (2019 edition) – 4.3: 4.3.7, 4.3.8  
4.5: 4.5.1, 4.5.2

#### Ground Ladders:

NFPA 1001 (2019 edition) – 4.3.6  
4.5.1  
WorkSafeBC OHS Regulations Part 31: 31.37

#### Scene Lighting and Utilities:

NFPA 1001 (2019 edition) – 4.3: 4.3.17, 4.3.18

#### Ropes and Knots – Hoisting Tools and Equipment:

NFPA 1001 (2019 edition) – 4.1.2  
4.3.20  
4.5.1

WorkSafeBC OHS Regulation Part 31: 31.39

**Building Construction and Fire Behaviour:**

NFPA 1001 (2019 edition) – 4.3: 4.3.11

NFPA 220 (2018 edition) – Chapter 4, Five Types of Construction;

NFPA 921 (2017 edition) – Chapter 5, Basic Fire Science.

NFPA 5000 (2018 edition) – Chapter 7, Construction Type and Heights and Area Requirements

**Gas & Electrical Safety for Firefighters:**

*(supplied by a BC Utility utilizing an evaluation mechanism)*

WorkSafeBC OSH Regulation Part 31: 31.5 (2) (f)

**Establish Safe Work Areas, Traffic and Scene Control:**

NFPA 1001 (2019 edition) – 4.3.3

WorkSafeBC OHS Regulations Part 31: 31 (1) (d) and 18

**Forcible Entry:**

NFPA 1001 (2019 edition) – 4.3.4 (not intended for firefighter entry into any structure)

**Ventilation – Horizontal:**

NFPA 1001 (2019 edition) – 4.3.11

4.5.1

**Exterior Fire Attack/Extinguishment:** *(accomplished with or without involvement of “live fire”)*

NFPA 1001 (2019 edition) – 4.3: 4.3.5, 4.3.7, 4.3.8, 4.3.16, 4.3.19

5.3: 5.3.1, 5.3.3

**Hazmat Awareness:**

NFPA 1072 (2019 edition) – Chapter 3 and Chapter 4

WorkSafeBC OHS Regulations Part 31: 31.5 (2) (C)

**ICS 100**

**Apparatus Driver/Operator (Exterior) – JPRs/Competencies**

**Scope:** The Apparatus Driver/Operator (Exterior) drives a variety of small utility vehicles and large fire trucks to and from incident scenes and in non-emergency situations. They may also operate complex vehicles and features such as fire pumps, aerial devices, water tenders, etc. upon meeting additional competencies.

**Requirements:**

*Preference for all Exterior Operations Firefighter competencies; plus, must meet all the following NFPA Job Performance Requirements and competencies to drive any fire department vehicle:*

**WorkSafeBC OHS Regulation Part 31: 31.5 (1) (e) and 31.27 to 31.32.**

**Driver’s License requirements in the Fire Service based on the size of apparatus**

- Class 5 Vehicle licence (single axle)
- Class 3 Commercial vehicle license
- Air brake endorsement

**Speciality Requirements:**

*Must meet all Apparatus Driver/Operator (Exterior) competencies above; plus, the NFPA Job Performance Requirements for each additional function that they perform below;*

**Additional Competencies for Drivers/Operators**

**Emergency Vehicle Driver – EVD: (for drivers of large fire apparatus)**

- NFPA 1002 (2017 edition) – 4.2
- 4.3

**Emergency Vehicle Operator – EVO:**

**For apparatus equipped with a fire pump: (only for drivers operating a fire pump)**

- NFPA 1002 (2017 edition) – 4.2
- 5.1
- 5.2

**For apparatus equipped with an aerial device: (only for drivers operating aerial devices)**

- NFPA 1002 (2017 edition) – 4.2
- 6.1
- 6.2

**For mobile water supply apparatus: (only for drivers operating water tenders)**

- NFPA 1002 (2017 edition) – 4.2
- 10.1
- 10.2



<b>Team Leader (Exterior) – JPRs/Competencies for those leading Exterior Ops Activities or Groups</b>
<b>SCOPE:</b> Operating outside of a structure at the task level, the Team Leader (Exterior) applies the following competencies within the scope of supervising Exterior Operations Firefighters in the performance of specific tasks as assigned by the Incident Commander (Exterior) in accordance with the Incident Action Plan (IAP), including task size-up, action planning, communications, and personnel accountability.
<b>REQUIREMENTS:</b> <i>Must meet all Exterior Operations Firefighter competencies; plus, completion of the following:</i>
<b>Incident Management:</b> NFPA 1001 (2019 edition) – 5.1: 5.1.1, 5.1.2 5.2: 5.2.2 5.3: 5.3.4
<b>Personnel Management and Supervision:</b> NFPA 1021 (2020 edition) – 4.1: 4.1.1
<b>Task Size-up:</b> NFPA 1021 (2020 edition) – 4.2: 4.2.1, 4.2.2, 4.2.3
<b>Action Planning:</b> NFPA 1021 (2020 edition) – 4.6: 4.6.1 & 4.6.2
<b>Personnel Accountability:</b> NFPA 1500 (2018 edition) – 8.5: 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.5.7, 8.5.8, 8.5.9 8.6: 8.6.4, 8.6.5, 8.6.6  WorkSafeBC OHS Regulation Part 31.5(1)(a)
<b>ICS 100</b>

<b>Incident Commander (Exterior) – JPRs/Competencies</b>
<b>SCOPE:</b> Operating outside of a structure, the Incident Commander (Exterior) manages the overall incident by applying the following competencies within the scope of tactical size-up; tactical action planning; and developing an Incident Action Plan (IAP). This function establishes Incident Command; manages communications; ensures scene safety; and supervises and accounts for all emergency responders operating at the incident in the implementation of the IAP.
<b>REQUIREMENTS:</b> <i>Must meet all Team Leader (Exterior) Competencies; plus, completion of the following:</i>
<b>Personnel Management and Supervision:</b> NFPA 1021 (2020 edition) – 4.1: 4.1.1
<b>Tactical Size-up:</b> NFPA 1021 (2020 edition) – 4.5: 4.5.2, 4.5.3
<b>Tactical Action Planning:</b> NFPA 1021 (2020 edition) – 4.6: 4.6.1 & 4.6.2
<b>Emergency Service Delivery:</b> NFPA 1021 (2020 edition) – 4.1: 4.1.2
<b>Initiate the Incident Command System – ICS:</b> NFPA 1500 (2018 edition) – 8.1: 8.1.5, 8.1.6, 8.1.7, 8.1.8
<b>Incident Size-up:</b> NFPA 1500 (2018 edition) – 8.6.8.1
<b>Personnel Accountability:</b> NFPA 1500 (2018 edition) – 8.3 8.4 8.5: 8.5.4, 8.5.12 8.6 8.7 8.9
WorkSafeBC OHS Regulations Part 31: 31.5(1)(a)
<b>Incident Safety Officer:</b> NFPA 1521 (2020 edition) – 5.2: 5.2.1, 5.2.2, 5.2.3, 5.2.4, 5.2.5, 5.2.6, 5.2.7, 5.2.8, 5.2.9, 5.2.10, 5.2.11, 5.2.12, 5.2.13, 5.2.14, 5.2.15
WorkSafeBC OHS Regulations Part 31: 31.6
<b>ICS 200</b>

## Interior Operations Level

Interior Operation Level structure firefighters may engage in fire suppression activities within simple structures (as described in BC Building Code Part 9 – buildings of 3 stories or less with maximum of 600 sq metres of living space) or objects such as a vehicle, single family dwelling or other small structures. Interior Operations may also operate inside larger or more complex structures (multi-story, high-rises, commercial complexes, etc.) that the AHJ has allowed to be developed and constructed, where the fire department has pre-planned the structure and determined it safe for internal operations by appropriately qualified firefighters. Firefighters must be trained specifically to the risks associated with each large or complex structure.

Interior Operations Level fire services must have Operational Guidelines written and enforced by the local department, that describe the advanced training and procedures that allow for a safe fire attack within permitted structures and objects. This includes skills such as firefighter self-rescue and calling a “Mayday”.

Interior operations must be undertaken in accordance with the requirements of WorkSafeBC (especially sections 31.19 and 31.23 of the OHS Regulation; accompanied by the OHS Guideline G31.23). The Incident Commander (Interior) must recognize the need, and coordinate staff appropriately, for adherence to the OHS Regulations, including the establishment of a Rapid Intervention Team (RIT) with appropriately trained and equipped firefighters, and following the time limit requirements also outlined by WorkSafeBC OHS Regulations.

**Interior Operations Firefighter – JPRs/Competencies**

**Scope:** Capable of operating inside of a structure at the task level, the Interior Operations Firefighter applies the following competencies to perform fire ground tasks as assigned by the Team Leader (Interior) or Incident Commander (Interior) in accordance with the Incident Action Plan (IAP).

**Requirements:**

*Must meet all Exterior Operations Firefighter competencies; plus, the following NFPA Job Performance Requirements and related competencies below:*

**Communications:**

NFPA 1001 (2019 edition) – 5.2.2

**Exit a Hazardous Area:**

NFPA 1001 (2019 edition) – 4.3.5

**Conduct a Search and Rescue:**

NFPA 1001 (2019 edition) – 4.3.9

**Loss Control – Overhaul and Salvage:**

NFPA 1001 (2019 edition) – 4.3: 4.3.13, 4.3.14

**Pre-Incident Planning:**

NFPA 1001 (2019 edition) – 5.5.3

NFPA 1620 (2020 edition) Standard for Pre-Incident Planning – familiarity requirement

**Interior Fire Attack/Extinguishment:** (accomplished with or without involvement of “live fire”)

NFPA 1001 (2019 edition) – 4.3: 4.3.9, 4.3.10, 4.3.13

5.3: 5.3.1, 5.3.3 (control of flammable gas cylinder)

**Rapid Intervention Team Member – RIT:**

NFPA 1407 (2015 edition) – Chapters 4,5,7,8

WorkSafeBC OHS Regulation Part 31: 31.23

## Apparatus Driver/Operator (Interior) – JPRs/Competencies

**Scope:** The Apparatus Driver/Operator (Interior) drives a variety of small utility vehicles and large fire trucks to and from incident scenes and in non-emergency situations. They may also operate complex vehicles and features such as fire pumps, aerial devices, water tenders, etc. upon meeting additional competencies.

### Requirements:

*Preference for all Interior Operations Firefighter competencies; plus, must meet all the following NFPA Job Performance Requirements and competencies to drive any fire department vehicle:*

**WorkSafeBC OHS Regulation Part 31: 31.5 (1) (e) and 31.27 to 31.32.**

### Driver's License requirements in the Fire Service based on the size of apparatus

- Class 5 Vehicle licence (single axle)
- Class 3 Commercial vehicle license
- Air brake endorsement

### Specialty Requirements:

*Must meet all Apparatus Driver/Operator (Interior) competencies above; plus, the NFPA Job Performance Requirements for each additional function that they perform below:*

### Additional competencies for Drivers/Operators:

#### Emergency Vehicle Driver – EVD: *(for drivers of large fire apparatus)*

- NFPA 1002 (2017 edition) – 4.2
- 4.3

#### Emergency Vehicle Operator – EVO:

##### For apparatus equipped with a fire pump: *(only for drivers operating a fire pump)*

- NFPA 1002 (2017 edition) – 4.2
- 5.1
- 5.2

##### For apparatus equipped with an aerial device: *(only for drivers operating aerial devices)*

- NFPA 1002 (2017 edition) – 4.2
- 6.1
- 6.2

##### For mobile water supply apparatus: *(only for drivers operating water tenders)*

- NFPA 1002 (2017 edition) – 4.2
- 10.1
- 10.2

## Team Leader (Interior) – JPRs/Competencies

**Scope:** Capable of operating inside of a structure at the task level, the Team Leader (Interior) applies the following competencies within the scope of supervising Interior Operations Firefighters in the performance of specific tasks as assigned by the Incident Commander (Interior) in accordance with the Incident Action Plan (IAP), including task size-up, action planning, communications, and personnel accountability.

### Requirements:

*Must meet all Interior Operations Firefighter competencies; plus, completion of the following:*

#### Incident Management:

NFPA 1001 (2019 edition) – 5.1: 5.1.1, 5.1.2  
5.2: 5.2.1

#### Personnel Management and Supervision:

NFPA 1021 (2020 edition) – 4.1: 4.1.1  
4.2: 4.2.1, 4.2.2, 4.2.3

#### Tactical Size-up:

NFPA 1021 (2020 edition) – 4.5: 4.5.2, 4.5.3

#### Risk Management:

NFPA 1500 (2018 edition) – 4.2  
8.4  
8.5

#### Tactical Action Planning:

NFPA 1001 (2019 edition) – 5.3.2  
NFPA 1021 (2020 edition) – 4.6: 4.6.1 & 4.6.2

#### Implement the Tactical Action Plan:

NFPA 1001 (2019 edition) – 5.3.4  
NFPA 1500 (2018 edition) – 8.6: 8.6.4, 8.6.5, 8.6.6

#### Communications:

NFPA 1001 (2019 edition) – 5.3.2

#### Rapid Intervention Team (RIT)

NFPA 1500 (2018 edition) – 8.8

#### Personnel Accountability:

NFPA 1500 (2018 edition) – 8.5: 8.5.2, 8.5.3, 8.5.4, 8.5.5, 8.5.6, 8.5.7, 8.5.8, 8.5.9, 8.5.10, 8.5.11

WorkSafeBC OHS Regulations Part 31.5(1)(a)

**Incident Safety Officer**

NFPA 1521 (2020 edition) – 5.2

**ICS 200**

**Incident Safety Officer (ISO) (Interior Operations) – JPRs/Competencies**

**Scope:** The Incident Safety Officer (Interior Operations), when activated by the Incident Commander (Interior), monitors the safety of all emergency responders operating at an emergency incident including altering or suspending unsafe activities. This function also supports the Incident Commander (Interior) in ongoing incident size-up and the development of the Incident Action Plan (IAP).

**Requirements:**

*Must meet all Team Leader (Interior) competencies; plus, completion of the following:*

NFPA 1521 (2020 edition) – 5.3: 5.3.1, 5.3.2, 5.3.3, 5.3.4

**Incident Commander (Interior) – JPRs/Competencies**

**Scope:** The Incident Commander (Interior) manages the overall incident by applying the following competencies within the scope of tactical size-up; tactical action planning; and developing an Incident Action Plan (IAP). This function establishes Incident Command; manages communications; ensures scene safety; and supervises and accounts for all emergency responders operating at the incident in the implementation of the IAP.

**Requirements:**

*Must meet all Team Leader (Interior) and Incident Safety Officer (Interior) competencies; plus, completion of the following:*

**Risk Management:**

NFPA 1500 (2018 edition) – 8.6.8.1  
8.7: 8.7.1, 8.7.4.4.1, 8.7.4.4.4, 8.7.5  
8.8: 8.8.1, 8.8.4.1, 8.8.7

**Initiate the Incident Command System – ICS:**

NFPA 1500 (2018 edition) – 8.1: 8.1.1, 8.1.2, 8.1.3, 8.1.5, 8.1.6, 8.1.7, 8.1.8

**Develop an Incident Action Plan – IAP:**

NFPA 1021 (2020 edition) – 4.6: 4.6.1

**Implementation of the Tactical Action Plan:**

NFPA 1021 (2020 edition) – 4.6: 4.6.2  
NFPA 1500 (2018 edition) – 8.6: 8.6.1.3, 8.6.13, 8.6.13.1, 8.6.13.2

**Communications:**

NFPA 1500 (2018 edition) – 8.6.15.6  
8.7: 8.7.2, 8.7.3

**Personnel Accountability:**

WorkSafeBC OHS Regulations Part 31.5(1)(a)



## Full-Service Operations

Full-Service Operations Fire Departments are equipped and have completed the appropriate training identified in the OFC Training Standards (directly aligned with and inclusive of the NFPA standards) to provide a full spectrum of fire services.

These services are based on the Competencies included within the NFPA 1001 Firefighter 1 and 2 Standard and relevant NFPA 1021 Fire Officer Standards.

Full-Service fire departments will have Operational Guidelines that must be written and enforced by the local department, that describe appropriate training requirements in fire operations activities.

These fire departments are organized such that the suppression activities that occur are based on response protocols which include the appropriate staffing levels, and number and type of apparatus on scene.

### **All Functions (Full-Service)**

**Competencies required for a Full-Service Fire Department to complete:**

**NFPA 1001 (FF-I & FF-II);**

**NFPA 1021 Fire Officer (FO I);**

**NFPA 1041 Fire Service Instructor I;**

**NFPA 1072 Haz Mat Operations with Specific Mission; and**

**NFPA 1521 Incident Safety Officer, Pre-Incident Planning.**

NFPA 1001 (2019 edition) – Chapter 4 and Chapter 5

NFPA 1021 (2020 edition) – 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7

NFPA 1041 (2019 edition) – 4.1, 4.2, 4.3, 4.4, 4.5

NFPA 1072 (2019 edition) – Chapter 5, 6.2, 6.6

NFPA 1521 (2020 edition) – 5.1, 5.2, 5.3, 5.6, 5.7

NFPA 1620 (2020 edition)

ICS 100, 200

BCEMS

Other NFPA Standards that local government and the Fire Chief (Risk Officer function) require to deal with hazards associated within their jurisdiction.

## Company Fire Officer

### Company Fire Officer – JPRs/Competencies

NFPA 1001 FF II; and  
NFPA 1041 Fire Service Instructor I.

#### Additional Competencies:

The duties of the Company Fire Officer are many, and range from human resource management, community relations, administration, health, and safety, to emergency service delivery and others. NFPA 1021, the Standard for Fire Officer Professional Qualifications, identifies four levels of Fire Officer, the most common being Fire Officer I (“FO-I”) and Fire Officer II (“FO-II”). Each local government and fire department must determine the nature of the role of any specific Company Fire Officer and ensure they meet the required Competencies identified in the pertinent JPR(s) of the NFPA 1021 Standard (2020 edition).

## Training Officer and Instructors

### Training Officer or Instructors – JPRs/Competencies

All NFPA Standards required to train must be completed  
Plus, completion of the following:

NFPA 1041 (2019 edition) FSI-I – 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5  
4.3.2, 4.3.3  
4.4.2, 4.4.3, 4.4.4, 4.4.5  
4.5.2, 4.5.3, 4.5.4, 4.5.5

WorkSafeBC OHS Regulation Part 31.4

An individual who is responsible for instructing a specific competency(ies) to another firefighter or fire officer to ensure they achieve the required knowledge and/or skills, must already have achieved the requirements for that competency and be considered by the department as being capable of providing such instruction of those competencies to other members of the department.

## Trainer and Assessor Competencies

Training and testing can be conducted “in-house” by qualified department personnel or be administered via third party providers. This section describes the requirements for “In-House” delivery of training requirements and assessments. Where a department has decided to use a third-party training provider, it should ensure that the training provided addresses the competencies set out in the Training Standards.

Regardless of which Service Level is declared, each local government and Fire Chief (Risk Management function) must ensure their training program meets the requirements of the OFC Training Standards to ensure that they can perform their fire scene operations in accordance with WorkSafeBC OHS Regulations.

### **Trainer competencies for “In-House” training delivery:**

The OFC Training Standards recognizes the “Trainer function”, which means the fire department member who is responsible for delivering the in-house delivery of training to other fire department members, and potentially even the evaluation of such training. The use of this term is not meant to prescribe an actual title to any position as assigned by a fire department.

<b>Trainer – JPRs/Competencies</b>
<b>Scope:</b> The In-House Trainer instructs members within their home fire department to the Level and Functions to which they are personally qualified and approved by the fire department.
<b>Requirements:</b> <i>Must meet all competencies for each Level and Function they would instruct; plus, completion of the following competencies:</i>
NFPA 1041 Fire Service Instructor (2019 edition) – Chapter 4 ( <i>accredited certification is not required</i> )

**Assessor requirements for “In-House” training delivery:**

The oversight of the testing processes used by a department for its in-house training program is the responsibility of the Officer who has oversight of the delivery and testing of the training being provided.

For each Service Level, an individual who is responsible for conducting specific testing of fire department personnel’s competency must already have achieved that competency and been determined by the department as capable of conducting such testing. While the requirements for an Assessor are the same as a Training Officer, the fire department must authorize them to perform one, or both, respective functions.

<b>Assessor – JPRs/Competencies</b>
<b>Scope:</b> The Training Officer/Assessor evaluates members within their home fire department to the Level and Functions to which they are personally qualified and approved by the fire department.
<b>Requirements:</b> <i>Must meet all competencies for each Level and Function they would assess; plus, completion of the following:</i>
NFPA 1041 Fire Service Instructor (2019 edition) – Chapter 4 ( <i>accredited certification is not required</i> )

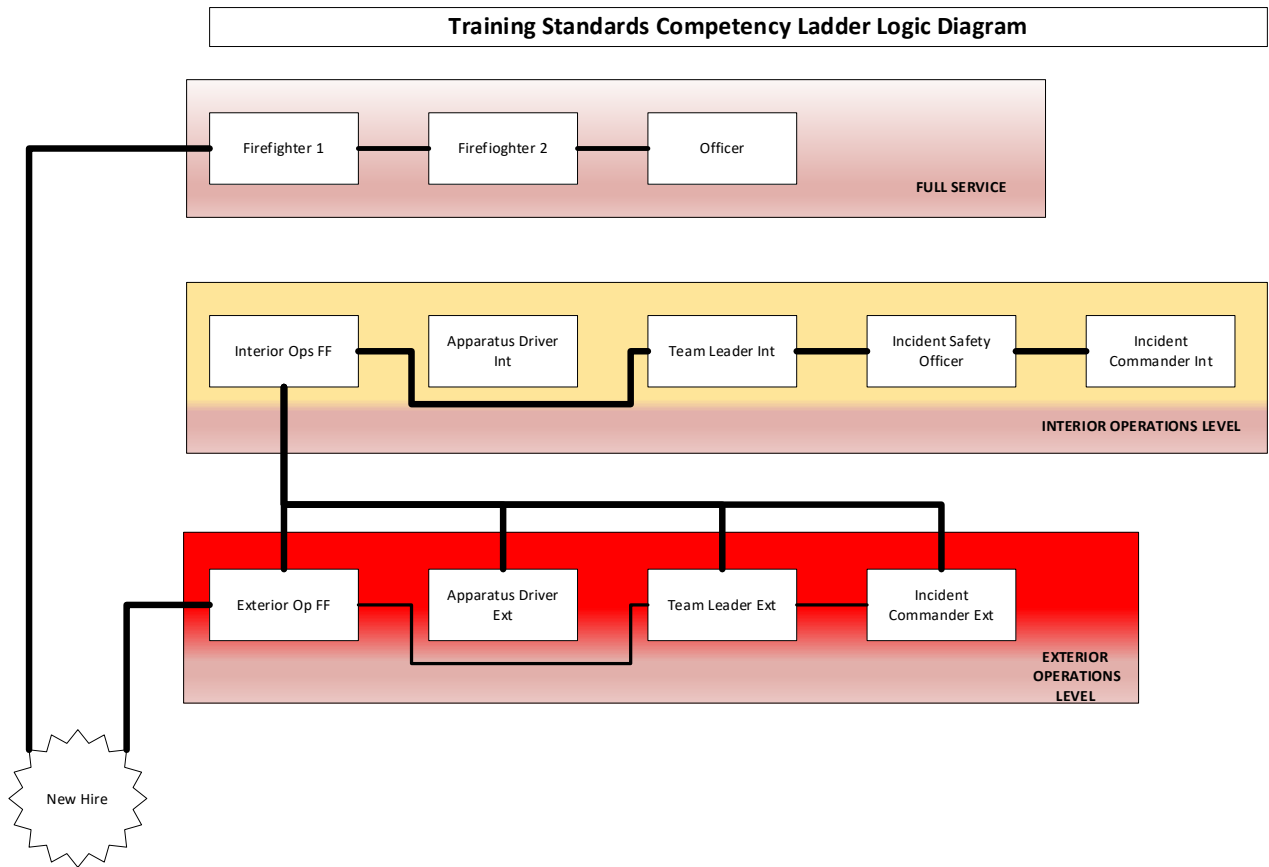
## Training Records

Each fire department's Risk Management function (the 'Fire Chief') is responsible for ensuring that accurate and current records of the training and certifications of each of its firefighters and officers are created and retained in alignment with the intent of the WorkSafeBC OHS Regulation 3.23. Third-party training providers for individual fire departments are also required to track training and maintain individual training records for each firefighter and officer.

There is no current standard for training record formats at this time, but some essential components would be:

- Name of individual
- Competency or JPR that was trained for – course name
- Date of training
- Validation or indication of actual completion of the course would be essential
- If applicable an appropriate retraining target date or timing cycle

# Appendix A – Flow diagram for the Competency Ladder



## Appendix B – Excerpt from Policy 3.200 - Procedures

### **Methods to Adopt the Training Standards:**

Fulfilling the Training Standards can be achieved through the following methods as determined by the AHJ:

- Develop and implement an in-house training and assessment program at the local level
- Utilize a third-party training provider
- Conduct a local review of individual's training records to identify prior learning that could be deemed to:
  - meet the full competency requirements for any Level or Function and allow the AHJ/Fire Department to recognize equivalency, or;
  - meet partial competency requirements for any Level or Function that could allow the AHJ/Fire Department to train the individual to only those competencies that were not covered by prior learning.
- Any combination of the methods above that the AHJ determines to meet the required competencies for individual personnel.

### **Updating existing personnel from the old Playbook to the new Training Standards:**

- Personnel who are already trained to the old Playbook Levels and Functions do not require retraining to equivalent Functions in the new Training Standards, provided that the fire department's maintenance training program complies with the new Training Standards competencies where any minor training gaps will be achieved over time.
- Personnel who perform any of the newly defined functions within the new Training Standards [*e.g., Apparatus Driver/Operator (Exterior), Apparatus Driver/Operator (Interior), Incident Safety Officer (Interior), Team Leader (Interior), Incident Commander (Exterior), and Incident Commander (Interior)*] must meet the competencies for those functions through one of the adoption methods listed above.



Making a difference...together

**REPORT TO ELECTORAL AREAS COMMITTEE  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

**SUBJECT      Community Resiliency Initiative Grant: 2023 FireSmart Community Funding & Supports**

**ISSUE SUMMARY**

The Capital Regional District (CRD) assists Electoral Area (EA) communities in reducing their wildfire risk through first responder coordination, public education, emergency planning, and agency cross-training. The CRD is applying to the Union of British Columbia Municipalities (UBCM) for funding to increase EA community wildfire resiliency activities (Appendix A). UBCM requires that all grant applications be accompanied by a motion of support from the local government.

**BACKGROUND**

UBCM provides funding for a range of community-based projects, including wildfire preparedness. A 2023 grant opportunity is available to support Local Governments as they build local capacity. The FireSmart Community Funding & Supports program supports activities that reduce community risk from wildfire. As part of the application process, UBCM requires a motion of support to receive and manage grant funding.

Protective Services staff hosted a series of engagement sessions with EA fire departments, emergency programs, local FireSmart committees, and community stakeholders to inform this grant application. Effective wildfire preparedness programs include seven FireSmart disciplines: education, vegetation management, legislation and planning, development considerations, interagency cooperation, cross-training, and emergency planning.

The CRD has applied for this grant to improve wildfire resiliency in rural EA communities through:

- a FireSmart public education campaign,
- an expanded wood chipping program that provides accessible alternatives to burning,
- a home FireSmart assessment program conducted by local qualified assessors,
- a FireSmart rebate program for residents, and
- dedicated wildfire training for First Responders.

If the proposal is approved by UBCM, most grant funding would flow to local volunteers, firefighters, residents, and businesses. The grant supports payments to community volunteers and contract positions such as the CRD FireSmart Coordinator. Funds would be distributed roughly evenly between EA and spent over the coming year. Due to the elevated risk of wildfire, the Regional District is eligible for \$200,000 in base funding and each Electoral Area is eligible for an additional \$50,000. The grant request breakdown is below:

Electoral Area	Funding Proposal
Base Funding (shared)	\$199,808.00
Southern Gulf Islands	\$49,767.00
Salt Spring Island	\$50,000.00
Juan de Fuca	\$49,215.00
<b>Total</b>	<b>\$348,790.00</b>



**Electoral Areas Committee – December 14, 2022**  
**Community Resiliency Initiative Grant: 2023 FireSmart Community Funding & Supports 2**

**ALTERNATIVES**

*Alternative 1*

The Electoral Areas Committee recommends to the Capital Regional District Board:  
That the Board support an application to the Union of British Columbia Municipalities Community Resiliency Initiative Fund for the FireSmart Community Funding & Supports program and direct staff to provide overall grant management.

*Alternative 2*

That staff be directed to rescind the grant application to the Union of British Columbia Municipalities Community Resiliency Initiative FireSmart Community Funding & Supports program.

**IMPLICATIONS**

*Financial Implications*

The grant will not alter CRD fire department or emergency program service budgets but provides an opportunity for additional projects that increase community resilience to wildfire, such as homeowner education and wood chipping events.

**CONCLUSION**

The CRD supports community wildfire preparedness in its EAs. The UBCM FireSmart Community Funding & Supports funding stream is an important resource to build wildfire resilience in the capital region. If supported by the Board, UBCM will consider the CRD's grant application.

**RECOMMENDATION**

The Electoral Areas Committee recommends to the Capital Regional District Board:  
That the Board support an application to the Union of British Columbia Municipalities Community Resiliency Initiative Fund for the FireSmart Community Funding & Supports program and direct staff to provide overall grant management.

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

**ATTACHMENTS**

Appendix A: UBCM 2023 FireSmart Community Funding & Supports Application

# Community Resiliency Investment Program

## 2023 FireSmart Community Funding & Supports

### Application Form

**New in 2023** – The 2023 FireSmart Community Funding & Supports program will have an open intake. Funding permitting, eligible applicants can submit one application between October 1, 2022 and December 31, 2023 (or until such time that funds are no longer available).

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 [cri@ubcm.ca](mailto:cri@ubcm.ca) or (250) 356-2947.

SECTION 1: Applicant Information	CRI- <i>(administrative use only)</i>
Name of Local Government or First Nation: Capital Regional District	Complete Mailing Address: 625 Fisgard St, Victoria, BC V8W1R7
Contact Person*: Jonathan Reimer	Position: Manager, EA Fire and Emergency Programs
Phone: 250-360-3137	E-mail: <a href="mailto:jreimer@crd.bc.ca">jreimer@crd.bc.ca</a>

\* Contact person must be an authorized representative of the applicant (i.e. staff member or elected official).

<p><b>SECTION 2: Type of Application</b> – Please identify the type of application you are submitting and provide the required information. Refer to Section 4 in the Program &amp; Application Guide for eligibility.</p>
<p><b>1. Type of Application</b> (select one only):</p> <p><input type="checkbox"/> Single applicant (as identified in Section 1 of the application form)</p> <p><input type="checkbox"/> Regional Project for Multiple Eligible Applicants. Please list all of the partnering eligible applicants included in this application:</p> <p><input checked="" type="checkbox"/> Regional Projects for Regional District Applications Including Multiple Electoral Areas. Please list all electoral areas included in this application. Refer to Section 4 of the program guide for requirements for regional district applications: Salt Spring Island, Southern Gulf Islands, Juan de Fuca</p>
<p><b>2. Rationale for Regional Projects</b> (only). Please provide a rationale for submitting a regional project application and describe how this approach will support cost-efficiencies in the total funding request.</p>

<p><b>SECTION 3: Project Summary</b></p>
--

**3. Name of the Project:**

Capital Regional District FireSmart Project

**4. Project Summary.** Please provide a summary of your project in 150 words or less.

This project funds community wildfire planning and resilience for the 14 communities in the Capital Regional District Electoral Areas. Activities include a FireSmart public education campaign, expanded wood chipping program that provides accessible alternatives to burning, a home FireSmart assessment program conducted by local qualified assessors, a FireSmart rebate program for residents, and dedicated wildfire training for First Responders

**5. Fire Centre (use check boxes).** Indicate which Fire Centre the proposed activities are located in (check all that apply).

Cariboo Fire Centre

Coastal Fire Centre

Kamloops Fire Centre

Northwest Fire Centre

Prince George Fire Centre

Southeast Fire Centre

**6. Project Cost & Funding Request:**

Total project cost: \$348,790.00

Total funding request for FireSmart activities (as indicated on Worksheet(s) 1): \$348,790.00

Total funding request for fuel management activities (as indicated on Worksheet 2):

Total funding request for new CWRP or CWPP update (as indicated on Worksheet 3):

**Total project funding request: \$348,790.00**

Have you applied for or received funding for this project from other sources? If yes, please provide details below.

No.

**7. Progress to Date.** If you were approved for funding under previous rounds of the FireSmart Community Funding & Supports program, or the 2021 FireSmart Economic Recovery Fund, please describe the activities that have been completed to date and/or what activities your community has not yet completed but will be undertaking to increase resiliency.

2019 project (required to be completed): FireSmart Education Activities. Complete.

2020 project: EA Community Wildfire Resiliency Plan Update. 90% complete.

2021 projects(s) – FSCFS and/or FSERF: EA FireSmart Program Initiation Project. Complete.

2022 project: Education, Chipping, Assessments, and Rebates. 90% complete.

**8. Required FireSmart Components.** Starting in 2024, it will be required for all applicants to have the following FireSmart components developed/active in their community. Please check which of the following are currently in place and provide a brief summary:

FireSmart Position: FireSmart Coordinator

Community Wildfire Resiliency Plan: Updates under development. 90% complete.

Community FireSmart & Resiliency Committee: In place at local levels - Under development at Electoral Area and Regional levels

Applicants that do not have a position, plan and committee are strongly encouraged to apply for these activities in the 2023 intake (and in order to be eligible for future funding).

#### **SECTION 4: Requirements for Funding** (refer to Section 5 of Program & Application Guide)

##### **9. A. Eligibility Review/Engagement Prior to Submitting an Application.**

- Applications with FireSmart activities only (i.e. only Worksheet 1) - Applicants are required to document engagement in the application. Planning and discussion must occur at a minimum of 30 days prior to submission of an application to allow for meaningful dialogue regarding the proposed FireSmart activities and opportunities for integration of planning on provincial Crown lands.

Please indicate the name(s) and title(s) of the person(s) you engaged with and describe the extent of that engagement.

- New in 2023** - Applications with fuel management activities (Worksheet 2) - Applicants are required to review Worksheet 2 with the BCWS Wildfire Prevention Officer/Prevention Specialist and/or FNESS Mitigation Specialist/Liaison and Section 6 of the worksheet must be completed by the BCWS and/or FNESS before the application is submitted.
- New in 2023** - Applications with CWRP development or CWPP Update (Worksheet 3) - Applicants are required to review Worksheet 3 with the BCWS Wildfire Prevention Officer/Prevention Specialist and/or FNESS Mitigation Specialist/Liaison and Section 5 of the worksheet must be completed by the BCWS and/or FNESS before the application is submitted.

**B. Acceptable Plan.** In order to qualify for funding, applicants must have a current and acceptable plan that includes assessment and identification of FireSmart and/or fuel management priorities (limited to Community Wildfire Resiliency Plan or Community Wildfire Protection Plan). Please outline how your community meets this requirement. Note: applicants that do not have a current and acceptable plan may apply to develop or update a plan.

Updated CWRP currently under development with project completion early 2023.

*Submit completed plans with the application form.*

#### **SECTION 5: Wildfire Risk & Rationale**

- 10. A. WUI Wildfire Risk Class.** What is the WUI Risk Class (1 – 5) for the general area of interest of your community or proposed activities, including the WUI polygon name, from the risk class map? Refer to Appendix 2 of the Program & Application Guide.

Risk Class: 2 WUI Polygon name: River Jordan

**B.** If local assessments provide additional evidence of higher wildfire risk than the WUI Risk Class, provide specific evidence of wildfire risk (reference to appropriate section of a CWRP/CWPP or other plan, etc.).

Previous CWPPs evaluate fire risk high - very high. Outgoing CWPPs are from 2005 - 2011 and are available upon request. EA communities such as Malahat are dominated by WUI risk from non-crown lands.

*Additional evidence for higher wildfire risk (e.g. CWRP/CWPP extract, copies of assessments, etc.) is required to be submitted with the application form.*

**C.** For the purpose of FireSmart Community Funding & Supports grants, identify the risk category that you are applying under:

Lower risk of wildfire (may apply for a base grant of up to \$100,000)

Higher risk of wildfire (may apply for a base grant of up to \$200,000)

**11. Other Rationale.** What other rationale or evidence is there for undertaking the proposed project? This may include local hazards identified in the Emergency Plan; threat levels identified in Hazard Risk & Vulnerability Analysis and/or other risk assessments; demonstrated history of repeated and/or significant interface wildfires and evacuations; or other rationale.

14 diverse electoral area communities with the most active historical fire regime along BC's coastline. Highly exposed to WUI hazard. Key community planning functions are distributed between the Regional District, Province, and Islands Trust.

*Evidence of other rationale (e.g. Local Authority Emergency Plan extract, copies of assessments, etc.) is required to be submitted with the application form.*

**12. Community Capacity Challenges.** Please describe any capacity challenges that your community faces in relation to wildfire risk reduction. This could include rural/remote location, lack of local fire department and/or lack of FireSmart position or Community Wildfire Resiliency Committee

Lack of Community Wildfire Resiliency Committee, Many remote locations (ferry-only and/or one-way in-one-way out rural access), Largest Electoral Area community in the Province (Salt Spring Island), Many communities with no formal fire service (Jordan River, Sidney Islands, etc.)

## SECTION 6: Detailed Project Information

**13. Proposed Activities.** Please refer to Section 6 of the Program & Application Guide for eligibility, and complete Worksheet 1: Proposed Activities & Cost-Estimate. Worksheet 1 is required to be completed for all applications and all projects must include an Education component.

**14. Increasing Resiliency.** Please indicate how the proposed project will increase community resiliency by undertaking community-based FireSmart planning and activities that reduce the community's risk from wildfire.

The proposed project addresses all disciplines of FireSmart and increases homeowner resilience, community cohesion, local government planning and preparation, and first responder capacity. Reduces exposure to hazards, vulnerability to impact, and community capacity for recovery from emergency incidents.

What performance measures will be used to assess the success of the proposed activities?

Performance measures as recognized FireSmart communities, trained Local FireSmart Representatives, Home assessments completed, Rebates processed, Events held, Social Media subscribers, and positive community feedback measures.

**15. Partnerships & Collaboration.** Please identify any other authorities you will collaborate with on the proposed project (e.g. community or resident organizations, First Nation or Indigenous organizations, or other local governments) and outline how you intend to work together.

This application is the result of a partnership between community stakeholders. This funding enables engagement with the Federal Government (Parks Canada), Provincial Government (BC Parks, BC Wildfire Service), Local Governments (Improvement Districts on Salt Spring, Mayne, and Piers, Islands Trust), and First Nations (Pacheedaht FN and others).

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

### SECTION 7: Application Check List

Required Submissions	Related Attachments
<input checked="" type="checkbox"/> Application Form	<input type="checkbox"/> Completed CWPP or CWRP as required in Q. 9 <input type="checkbox"/> Other rationale, as required in Q. 10 and 11
<input checked="" type="checkbox"/> Worksheet 1: Proposed Activities & Cost Estimate	<input type="checkbox"/> Approval from SPCO (if applying for Phase 2, 3 or 4) for FireSmart structure protection equipment, as required in Q.6 <input type="checkbox"/> List of proposed training with cost calculation and estimate for each FireSmart position, as required in Q.7 <input type="checkbox"/> Completed FireSmart Assessments for structures proposed for FireSmart Projects for Critical Infrastructure, as required in Q. 8 <input type="checkbox"/> Completed FireSmart Assessments for structures proposed for FireSmart Projects for Community Assets, as required in Q. 9
<input type="checkbox"/> <u>For fuel management activities only:</u> Worksheet 2: Proposed Fuel Management Activities	<input type="checkbox"/> Additional information that supports treatment as a priority, as required in Q. 6 and/or Q. 11 <input type="checkbox"/> <u>For fuel management treatment on Provincial Crown land only,</u> an email from the Land Manager indicating information sharing with First Nations has been completed as required in Q. 14 <input type="checkbox"/> Overview map of the community, previously completed treatments, proposed treatments for this application, and planned future treatments <input type="checkbox"/> PDF map <u>and</u> Google Earth compatible KML file, at appropriate scale, outlining the area of interest, proposed treatment units, land status and tenure overlaps <input type="checkbox"/> If available, current wildfire threat assessment plots and/or fuel loading data and rationale for the proposed treatment unit(s) <input type="checkbox"/> <u>For fuel management treatment only,</u> a copy of the completed, signed prescription and project spatial layer

<input type="checkbox"/> <u>For cultural and prescribed fire only</u> , a copy of the completed burn plan (in addition to the prescription) and project spatial layer	
<input type="checkbox"/> <u>For CWRPs and CWPP Updates only: Worksheet 3: Proposed New CWRP or Update to CWRP/CWPP</u>	<input type="checkbox"/> PDF map and Google Earth compatible KML file, at appropriate scale, outlining the area of interest and eligible WUI
<input checked="" type="checkbox"/> Council, Board or Band Council resolution, indicating support for the current proposed activities and willingness to provide overall grant management	
<input type="checkbox"/> <u>For regional projects only</u> : Council, Board or Band Council resolution, from each partnering community that clearly states approval for the applicant to apply for, receive and manage the grant funding on their behalf	
Submit the completed Application Form and all required related attachments as e-mail attachments to <a href="mailto:cri@ubcm.ca">cri@ubcm.ca</a> and note " <b>2023 CRI</b> " in the subject line. Submit your application as either a Word or PDF file(s). If you submit by e-mail, hardcopies and/or additional copies of the application are not required.	

<p><b>SECTION 8: Signature</b> – 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 and the BC FireSmart Committee.</p>	
<p>I certify that: (1) to the best of my knowledge, all information is accurate and (2) the area covered by the approved project is within the applicant’s jurisdiction (or appropriate approvals are in place).</p>	
Name: Jonathan Reimer	Title: Manager, EA Fire and Emergency Programs
Signature*:  <i>A certified electronic or original signature is required.</i>	Date: November 21, 2022

\* Signatory must be an authorized representative of the applicant (i.e. staff member or elected official).



Making a difference...together

**REPORT TO ELECTORAL AREAS COMMITTEE  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

**SUBJECT     Community Emergency Preparedness Fund Grant: Volunteer & Composite Fire Department Training & Equipment**

**ISSUE SUMMARY**

The Capital Regional District (CRD) is applying to the Union of British Columbia Municipalities (UBCM) for grant funding for fire department training and equipment under the Community Emergency Preparedness Fund program (Appendix A). The CRD operates six eligible Electoral Area (EA) fire departments. UBCM requires that all grant applications be accompanied by a motion of support from the local government.

**BACKGROUND**

UBCM provides funding for a range of community-based projects, including volunteer-based fire departments. A 2023 grant opportunity is available to support training and equipment for volunteer and composite (mixed paid and volunteer) fire departments. The CRD administrates six eligible fire departments through delegated-authority commissions. Improvement district and society-operated departments are eligible to apply directly to UBCM. As part of the application process, UBCM requires a motion of support to receive and manage grant funding.

Protective Services staff coordinated this grant application with six fire departments: Port Renfrew, Shirley, Otter Point, East Sooke, Willis Point, and North Galiano. Grant funds would permit departments to upgrade equipment such as personal protective gear, wildfire suppression tools, and facilitate training courses to meet the new Provincial Minimum Training Standards.

The grant request breakdown by fire service area is below. Grant funding may be pooled between fire departments to increase efficiency and reduce overhead costs.

Fire Service Area	Funding Proposal
Port Renfrew	\$31,000.00
Otter Point	\$29,721.51
North Galiano	\$29,810.00
East Sooke	\$28,800.00
Shirley	\$29,488.00
Willis Point	\$29,778.99
<b>Total</b>	<b>\$178,598.50</b>

**ALTERNATIVES**

*Alternative 1*

The Electoral Areas Committee recommends to the Capital Regional District Board: That the Board support an application to the Union of British Columbia Municipalities Community Emergency Preparedness Fund for the Fire Department Training and Equipment program and



direct staff to provide overall grant management.

*Alternative 2*

That staff be directed to rescind the grant application to the Union of British Columbia Municipalities Community Emergency Preparedness Fund for the Fire Department Training and Equipment program.

**IMPLICATIONS**

*Financial Implications*

The grant will not alter fire department operational budgets but provides an opportunity for one-time projects that increase fire department capacity and resident safety.

**CONCLUSION**

The CRD supports fire prevention and response in its EAs. The UBCM Fire Department Training & Equipment funding stream is an important resource to build fire department capacity in the capital region. If supported by the Board, UBCM will consider the CRD's grant application.

**RECOMMENDATION**

The Electoral Areas Committee recommends to the Capital Regional District Board:  
That the Board support an application to the Union of British Columbia Municipalities Community Emergency Preparedness Fund for the Fire Department Training and Equipment program and direct staff to provide overall grant management.

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

**ATTACHMENTS**

Appendix A: UBCM 2022 Volunteer & Composite Fire Department Training & Equipment Application

## Community Emergency Preparedness Fund Volunteer & Composite Fire Departments Equipment & Training 2022 Application Form

Please complete and return the application form by **October 21, 2022**. All questions are required to be answered by typing directly in this form. If you have any questions, contact [cepf@ubcm.ca](mailto:cepf@ubcm.ca) or (250) 387-4470.

<b>SECTION 1: Applicant Information</b>	<b>AP</b> <small>(for administrative use only)</small>
Name of Primary Applicant: Capital Regional District	Date of Application: October 18 2022
Contact Person*: Jonathan Reimer	Position: Manager, EA Fire and Emergency Programs
Phone: 250-360-3137	E-mail: <a href="mailto:jreimer@crd.bc.ca">jreimer@crd.bc.ca</a>

*\* Contact person must be an authorized representative of the applicant (i.e. an employee or elected official).*

<b>SECTION 2: For <u>Regional Projects Only</u></b>
<p><b>1. Identification of Partnering Applicants.</b> For all regional projects, please list all of the partnering applicants included in this application. Refer to Sections 2 and 3 in the <i>Program &amp; Application Guide</i> for eligibility.</p>
<p><b>2. Rationale for Regional Projects.</b> Please provide a rationale for submitting a regional application and describe how this approach will support cost-efficiencies in the total grant request.</p>

<b>SECTION 3: Project Summary</b>
<p><b>3. Project Information</b></p> <p style="margin-left: 40px;">A. Project Title: Capital Regional District Fire Department Training &amp; Equipment Project</p> <p style="margin-left: 40px;">B. Proposed start and end dates. Start: Jan 1 2023    End: Dec 31 2023</p>

**4. Project Cost & Grant Request:**

- A. Total proposed project budget: \$178,598.50
- B. Total proposed grant request: \$178,598.50
- C. Have you applied for, or received funding for, this project from other sources? If yes, please indicate the source and the amount of funding received or applied for.  
No

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

The CRD operates 6 fire departments in the Juan de Fuca and Southern Gulf Islands Electoral Areas. This project would ensure minimum structure and wildfire personal protective equipment is available for all volunteers. Significant investments in training are required to meet revised OFC training standards, and this project provides a level of basic training to achieve new competencies.

**SECTION 4: Detailed Project Information**

**6. Requirement to be Volunteer or Composite Fire Department.** Please list the name and location of each eligible fire department that is included in this application, describe the composition (volunteer or composite) of each department, and state the declared level of service of each department.

East Sooke Volunteer Fire Department - Composite - Interior

North Galiano Volunteer Fire Department - Composite - Exterior

Otter Point Volunteer Fire Department - Composite - Interior

Shirley Volunteer Fire Department - Volunteer - Interior

Willis Point Volunteer Fire Department - Volunteer - Exterior

Port Renfrew Volunteer Fire Department - Volunteer - Exterior

*Copies or extracts of the available evidence of declared level of service is required to be submitted with the application.*

*The BC Structure Firefighter Minimum Training Standards include the requirement for fire departments to declare their level of service. This applies to all local government, Treaty First Nation and society-run fire departments. The training standards are not automatically applicable on federal reserve lands and, for the purpose of CEPF funding, non-Treaty First Nations are not required to declare their level of service if they are not prepared to do so. This will not impact the review or scoring of applications.*

**7. Operating Budget(s).**

- a. Please indicate the annual operating budgets of each fire department included in this application.

Listed budgets include both annual operating and capital costs (trucks, halls, etc.) as they are entangled within internal budgeting processes.

East Sooke Volunteer Fire Department - \$429,941

North Galiano Volunteer Fire Department - \$181,744

Otter Point Volunteer Fire Department - \$520,055

Shirley Volunteer Fire Department - \$162,041

Willis Point Volunteer Fire Department - \$136,055

Port Renfrew Volunteer Fire Department - \$92,301

- b. Describe the extent to which that budget enables each fire department to purchase essential equipment and/or obtain training.

There is minimal opportunity to purchase essential equipment and obtain minimum levels of training. As above, most departmental budgets do not permit significant paid positions or volunteer compensation. The overwhelming majority of budgets go towards training, equipment, overhead, and capital (apparatus and hall) costs.

**8. Proposed Activities.** What specific activities will be undertaken as part of the proposed project? Refer to Sections 4 and 6 of the *Program & Application Guide* for eligibility.

- a. Purchase of equipment.

Equipment for the 6 departments are based on individual need, and includes basic personal protective equipment and wildfire suppression handtools and associated equipment.

- b. Training. *Note: training is for fire department members only and not community members. All proposed training activities must include the name of course and the instructor and/or agency who will provide the training.*

Training is for members of the 6 included departments only. All training is aimed at meeting the new BC Structure Firefighter Minimum Training Standards, particularly competencies for Apparatus Operator, Team Leader, and Incident Commander. Due to the short time window since the release of the Training Standards, the CRD has not completed an equivalency assessment for all departments and is unable to confirm the individual courses required. CRD is working with the OFC to confirm equivalencies. CRD Procurement policy requires the use of a competitive process to award the training contracts which will follow notification of success from UBCM. We will identify the instructor and/or agency at that time.

**9. Resiliency.** Describe how the proposed project will build the resiliency of volunteer and composite fire departments in preparing for and responding to emergencies.

East Sooke - With 1/3 of our service area being a forested park, upwind from the residential area, keeping our firefighters properly equipped to respond to wildfire incidents will ensure a better response action (lighter and less constraining gear translates into more usable response hours per firefighter) and better firefighters protection (current overalls provide less protection than proper NOMEX PPE).

North Galiano - This project will provide the opportunity to increase flow rates on a 65mm (2.5") attack line during initial exterior attack on structural fires to "hit it hard from the yard", and increase the possibility of extinguishing or setting the fire back quickly.

Including lightweight portable monitors allows the flexibility to mount this mode of attack despite a limited response and older membership. PPE purchases will provide improved protection for members currently wearing ill-fitting or worn gear. Live fire & pumps & training will prepare members from a department with low structure fire call volume with the practical skills and experience to respond to emergencies.

Otter Point - The additional equipment will enable the department to not only have more resources to deal with larger incidents more efficiently, but also to restock apparatus in a timelier manner thus being ready for the next call sooner.

Shirley - The new turnout gear will allow our firefighters the protection needed to respond to active fires, road rescue incidents, medical aid calls, etc. They will be able to train in their new gear so that they are familiar with it in times of emergency. Without the approved Turnout gear they are unable to respond appropriately to emergencies.

Willis Point - Willis Point is a rural residential area where nearly all houses have an interface fire zone. Wildland firefighting PPE will strengthen our ability to protect our community. Structure protection bunker gear will keep our firefighters in up to date protective gear

**10. Mental Well-Being.** Describe the extent to which proposed training will specifically address the mental wellbeing of eligible fire department staff and volunteers.

As a volunteer department it is important for members to know they are valued enough to have the proper safety equipment to do their job. As we enter many highly stressful situations with members that may have minimal training it is very important for their mental health and well being to know that they have equipment that is up to the standard to properly protect them. Having old, hand me down gear or expired gear doesn't give the crew the confidence they need to psychologically do their job.

Improved response, PPE & training will improve the confidence and mental wellbeing of fire department staff and volunteers.

**11. Transferability.** Describe the extent to which the proposed project may offer transferable resources and supplies to other communities (e.g. trained staff and/or equipment that will be made available to other communities, training resources other communities will be invited to utilize, etc.).

East Sooke - The gear will ensure that East Sooke firefighters are prepared for wildfire incidents in our neighboring communities with which we have existing mutual aid agreements, and for deployment elsewhere in the province during fire season (in limited numbers).

North Galiano - NGVFD are mutual and automatic aid partners with the South Galiano Volunteer Fire Department. Mutual aid may be possible during large events on other Southern Gulf Islands.

Otter Point - The additional equipment will also be available to our four neighbouring volunteer/composite mutual aid fire department partners, which we have automatic mutual aid for structure fires with three of them.

Shirley - The more resources we have to attend to emergencies the more we can help the other communities. We have mutual aid agreements with neighbouring communities

which means we may need to send some of our resources to help them while still needing to cover our own community. Having all our members with the equipment they need means we have the additional resources to aid in those other communities.

Willis Point Fire Department has mutual aid agreements with neighbouring Saanich Fire Department, and Highlands fire department. Volunteer firefighters and equipment would be directly available through our mutual aid agreements in the region.

**12. Partnerships.** Identify any other organizations or stakeholders you will collaborate with on the proposed project and specifically outline how you intend to work together.

Significant coordination will occur between the 11 Fire Services where CRD is Authority Having Jurisdiction. However, no external partnerships are directly anticipated in this project.

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

Thank you.

## SECTION 5: Required Application Materials

Only complete applications will be considered for funding. The following separate attachments are required to be submitted as part of the application.

All applicants are required to submit:

- Completed application form;
- Evidence of declared service level (e.g. bylaw, resolution); and
- Detailed project budget

Local government, First Nation, or improvement district applicants must submit:

- Council or Board resolution, Band Council Resolution or Treaty First Nation resolution, or improvement district Trustee resolution indicating support for the current proposed activities and willingness to provide overall grant management.

Legally incorporated society-run fire department applicants must submit:

- Board of Directors motion indicating support for the current proposed activities and willingness to provide overall grant management.
- Current Certificate of Good Standing.

Regional project applicants are required to submit:


- Resolution or motion from each partnering applicant clearly stating their approval for the primary applicant to apply for, receive, and manage the grant funding on their behalf.

**SECTION 6: Signature**

I certify that: (1) to the best of my knowledge, all information is accurate and (2) the area covered by the proposed project is within our jurisdiction (or appropriate approvals are in place).

Name: Jonathan Reimer

Title: Manager, Fire and Emergency Programs

Signature: 

Date: October 18 2022

*An electronic or original signature is required.*

*\* Signatory must be an authorized representative of the applicant (i.e. an employee or elected official)*

Submit applications to:

Local Government Program Services, Union of BC Municipalities

E-mail: [cepf@ubcm.ca](mailto:cepf@ubcm.ca)



Making a difference...together

**REPORT TO MAGIC LAKE ESTATES WATER AND SEWER COMMITTEE  
MEETING OF TUESDAY, NOVEMBER 29, 2022**

**SUBJECT Magic Lake Estates SCADA Communication Upgrades**

**ISSUE SUMMARY**

To seek approval to include a Supervisory Control and Data Acquisition (SCADA) Communication Upgrade project to the Magic Lake Estates Water 2023 Capital Plan.

**BACKGROUND**

The existing Magic Lake Estates Water and Sewer infrastructure is controlled by a SCADA communication system that has been patched together over the years by a variety of systems and equipment. The SCADA system is extremely important as it enables an operator to control equipment and respond to alarms either remotely or in person depending on the severity of the alarm.

The existing communication equipment was installed starting in the 1970's, based on a number of criteria including: available technology, topography, lines of sight from antennas, expansion/upgrades to the water and wastewater systems and available funding. A communication study was conducted in the early 2000's to replace older technology. The study concluded that it was not possible to replace all sites to radio as cellular modems were not yet available. Therefore, the existing communication system has been maintained. The communication system hardware and annual third-party fees are noted in Table 1 below.

*Table 1: Existing Communication Infrastructure for Magic Lake Estates Sites*

<b>Component</b>	<b>Locations</b>	<b>Function &amp; Limitations</b>	<b>Third Party Fees</b>
Trio Radio Antennas	Magic Lake WTP (w) Frigate Reservoir (w) Captain Reservoir (w) Magic Lake PS (w)	<ul style="list-style-type: none"> <li>▪ Radio</li> <li>▪ Logs and displays information</li> <li>▪ Can change setpoints remotely</li> </ul>	No annual fees
Telus Leased Lines	Buck Lake PS (w) Bosun PS (w) Schooner WWTP (s) Cannon PS (s) Galleon PS (s)	<ul style="list-style-type: none"> <li>▪ 4-20 mA signal</li> <li>▪ Limited alarm display only</li> <li>▪ Owned by Telus (so they charge fees and no internal troubleshooting available)</li> </ul>	\$15,000 per year (w) \$17,000 per year (s)
Two-wire Copper	Schooner PS (s) Cutlass PS (s) Capstan PS (s) Masthead PS (s) Buccaneer PS (s)	<ul style="list-style-type: none"> <li>▪ 4-20 mA signal</li> <li>▪ Limited alarm display only</li> <li>▪ No control or data acquisition</li> </ul>	No annual fees

(w) = water site  
(s) = sewer site

As part of the design of the Magic Lake Estates Wastewater Treatment Plant and Pump Station (PS) Upgrades, the consultant completed an updated radio path survey and technology review to determine communication requirements for the new infrastructure.



Based on their investigation, it was determined that Telus wants to discontinue the leased lines and the two-wire copper components are limited in their functionality. In addition, they confirmed that newer radio and cellular modem options are available that would make the entire system more secure and reliable. Additional benefits of standardizing and modernizing the communication system include consistency, improved remote troubleshooting, better data collection, lower operational fees, and advanced system and alarm monitoring. The proposed communication system and annual third-party fees are noted in Table 2 below. The proposed communication equipment upgrades will result in about \$14,000 per year less operational fees for the Water Service.

*Table 2: Proposed Communication Infrastructure Upgrades for Water and Sewer Sites*

<b>Component</b>	<b>Locations</b>	<b>Function</b>	<b>Third Party Fees</b>
GE MDS Orbit Radio	<u>Magic Lake WTP (w)</u> <u>Captain Reservoir (w)</u> <u>Buck Lake PS (w)</u> Frigate Reservoir (w) Magic Lake PS (w) Galleon PS (s) Schooner PS (s) Capstan PS (s) Masthead PS (s) Buccaneer PS (s)	<ul style="list-style-type: none"> <li>▪ Modern Radio system</li> <li>▪ Logs and displays information</li> <li>▪ Can control setpoints and reset alarms remotely</li> <li>▪ Some types of troubleshooting can be done remotely</li> </ul>	No annual fees
GE MDS Orbit Cellular	<u>Magic Lake WTP (w)</u> Bosun PS (w) Schooner WWTP (s) Cutlass PS (s) Cannon PS (s)	<ul style="list-style-type: none"> <li>▪ Cellular modem system</li> <li>▪ Logs and displays information</li> <li>▪ Can control setpoints and reset alarms remotely</li> <li>▪ Some types of troubleshooting can be done remotely</li> <li>▪ Low monthly fees for data usage</li> </ul>	~ \$720 per year (w) ~ \$1080 per year (s)

Note: the site locations underlined above require communication upgrades for the communication system at the wastewater sites to function.

The consultant advised that, in order to complete the wastewater facility upgrades, communication upgrades must also be completed at three water facility sites, (Magic Lake Water Treatment Plant for radio and cellular, Captain Reservoir, and Buck Lake Pump Station) for the upgraded radio system to function properly because of the location and elevation of these sites. These locations will use master radios and ‘store and forward’ technology so that all information can be received back to the Water Treatment Plant where the SCADA server is located.

Although the remaining three water sites, (Bosun PS, Frigate Reservoir, and Magic Lake PS), do not require upgrades for the wastewater communication system to function, there are benefits to changing these sites as well. The benefits include lowering the annual operating fee and eliminating radio interference between the Trio and Orbit systems. Although it may be possible to keep the two radio systems, it will cost more to mitigate potential interference and it is not guaranteed that some interference could occur which can create poor signals, limit data collection, and cause false alarms.

The cost estimate to implement the recommended changes to the water sites are listed in Table 3 below.

*Table 3: Cost Estimate for Magic Lake Estates Communication Upgrades*

<b>Task</b>	<b>Three Water Sites required for Sewer Upgrades</b>	<b>Three Water Sites for benefit of Water only</b>	<b>Water Sites - Total</b>
Design	\$ 8,000	\$ 4,000	\$12,000
Hardware	\$45,000	\$15,000	\$60,000
Installation	\$ 3,000	\$ 3,000	\$ 6,000
Commissioning	\$ 6,000	\$ 6,000	\$12,000
<b>Total</b>	<b>\$62,000</b>	<b>\$28,000</b>	<b>\$90,000</b>

Note: costs for the sewer sites communication upgrades are not included above (i.e., kiosk, radios and antennas). Those items are included in the wastewater project capital plan.

As noted above, the reduction in annual operating fees from completing the communication upgrades to the Water Sites is about \$14,000. Therefore, based on a capital cost of \$90,000 the payback period would be approximately seven years.

**ALTERNATIVES**

*Alternative 1*

The Magic Lake Estates Water and Sewer Committee recommends the Electoral Areas Committee recommends to the Capital Regional District Board:

That the provisionally approved Magic Lake Estates Water Service 2023-2027 Capital Plan and Budget be amended to include a new Capital Project for 2023 to complete communication improvements at all Magic Lake Estates Water sites with a budget of \$90,000 to be funded from the Water Service Capital Reserve Fund.

*Alternative 2*

The Magic Lake Estates Water and Sewer Committee recommends the Electoral Areas Committee recommends to the Capital Regional District Board:

That the provisionally approved Magic Lake Estates Water Service 2023-2027 Capital Plan and Budget be amended to include a new Capital Project for 2023 to complete communication improvements at three Magic Lake Estates Water sites with a budget of \$62,000 to be funded from the Water Service Capital Reserve Fund.

*Alternative 3*

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

**IMPLICATIONS**

*Alternative 1*

Upgrading communication systems at all water and wastewater facilities would make the entire system more secure and reliable. In addition, it will standardize the whole system to make it more consistent, improve remote troubleshooting, enable better data collection, and provide advanced monitoring and alarm response.

It will be more cost effective for the system to be designed and upgraded by the same consultant and contractor. Currently the Magic Lake Estates Water Service has \$620,328 in its 2023 Capital Reserve Fund. Therefore, there are sufficient funds to include a 2023 capital project with a budget of \$90,000. The net annual reduction of third-party fees is about \$14,000.

*Alternative 2*

Upgrading the communications systems at only three water sites just to enable the SCADA system to work for wastewater upgrades could work, but with noted challenges. Bosun PS would retain a Telus leased line along with the high operating costs. Frigate Reservoir and Magic Lake PS would retain a different radio than the rest of the system, which could cause interference with the Orbit radio. Additional design and isolation efforts could be implemented to mitigate potential interference, but it is not guaranteed to work. There are sufficient funds in the Water Service Capital Reserve Fund to include a 2023 capital project with a budget of \$62,000. The net annual reduction of third-party fees is about \$7,000.

**CONCLUSION**

The existing Magic Lake Estates Water and Sewer infrastructure is controlled by a SCADA communication system that has been patched together by a variety of systems and equipment. As part of the Magic Lake Estates Wastewater Treatment and Pump Station project, CRD's consultant has completed a SCADA communication review and is recommending upgrades to the entire system to make it more secure and reliable. Upgrading the Telus leased lines to radio or cellular modem sites at the Water locations could also reduce the annual third-party fees by about \$14,000.

**RECOMMENDATION**

The Magic Lake Estates Water and Sewer Committee recommends the Electoral Areas Committee recommends to the Capital Regional District Board:

That the provisionally approved Magic Lake Estates Water Service 2023-2027 Capital Plan and Budget be amended to include a new Capital Project for 2023 to complete communication improvements at all Magic Lake Estates Water sites with a budget of \$90,000 to be funded from the Water Service Capital Reserve Fund.

Submitted by:	Martina Bona, P.Eng., Project Engineer, Wastewater Engineering and Planning
Concurrence:	Malcolm Cowley, P.Eng., Manger, Wastewater Engineering and Planning
Concurrence:	Joseph Marr, P.Eng., Acting Senior Manager, Infrastructure Engineering
Concurrence:	Ian Jesney, P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Ted Robbins, BSc., CTech., Chief Administrative Officer

**ATTACHMENT**

Appendix A: SCADA Radio Path Analysis – Field Testing Report by Victoria Mobile Radio

Capital Regional District  
Magic Lake Estates  
SCADA Radio Path Analysis  
Field Testing

Report By:

Victoria Mobile Radio Ltd.

October, 2022

## 1.0 Introduction

Victoria Mobile Radio (VMR) was hired to do a Desktop Study for a proposed radio system for the Magic Lake Estates SCADA system on Pender Island. Afterwards VMR was asked to do the Field Testing to verify the Desktop Study paths.

## 2.0 General

Older SCADA systems often used leased lines for communications. The Industry has been switching to SCADA radio for many years now. Mainly due to problems to get proper support for the leased lines. The telephone Carriers want hundreds of calls on a phone line, not one modem talking to one RTU. This support becomes a low priority item for them. Reliability is not the only reason. Newer SCADA radio technology has faster data speeds, powerful networking abilities, and state of the art security.

## 3.0 Background Information

3.0.1 The Magic Lakes Estates system is predominantly wired. Either a telephone leased line or 2-wire copper between sites. There are also a few Trio SCADA radios in place for three links back to the Water Treatment Plant (WTP).

3.0.2 As part of the WTP upgrade a new SCADA radio system is proposed. The Capital Regional District (CRD) uses the GE MDS TransNet unlicensed radio for many of their other SCADA needs. The original request was to plan for this radio to be used for the new system. This is an older GE MDS radio model, serial only, that has been around for 15+ years. It is still a very popular product due to its reliability and very good performance. However, based on GE MDS notification of the TransNet hardware being end-of-life as of December 2020, VMR used the GE MDS MCR-900 radio for all field testing. Not to put customers in a bad spot GE MDS is going to produce an Orbit radio that is backward compatible to the TransNet radio to make sure existing TransNet systems have the ability to stay in operation. This is not a migration path from TransNets to Orbit, as the radio cards are too different in technologies.

### 3.0.3 Appendices included in this Report

3.0.3.1 Appendix A – Overview Map

3.0.3.2 Appendix B – Field Testing Spreadsheets  
(Note: See multiple tabs at bottom)

3.0.3.3 Appendix C - TransNet Specification Sheet

3.0.3.4 Appendix D - ECR/MCR-900 Specification Sheet

3.0.3.5 Appendix E - LN4 Specification Sheet

3.0.3.6 Appendix F - Budgetary Pricing

### 4.0 System Path Considerations

- 4.0.1 Even though all Magic Lake Estate's sites are relatively close together the topography is such that it is still challenging for radio. A number of SAF sites will be needed. It was confirmed by the Field Testing that tree obstructions proved to be significant.
- 4.0.2 The Field Testing followed what the Desktop suggested. Generally speaking, sites were tested from a radio located on the top of the Lively Peak Shaw tower first, and then from a radio at the Frigate Reservoir, then Capstan Pump Station, and finally with a radio at Galleon Pump Station.
- 4.0.3 With the Desktop work suggesting that the Cannon Pump Station will not have radio coverage for the proposed radio network on the Island there was three alternate tests done. First, to see if the SPWS TransNet Repeater on Bruce Mountain, Saltspring Island, would have coverage. Second, to see if the CRDW Repeater on Mt. McDonald would have coverage, and the third was to measure cellular coverage.
- 4.0.4 UHF licenced radio is also an option that would roughly produce about 12dB more signal due to higher RF power and better propagation due to the lower 400MHz frequency, as compared to 900MHz. There was no UHF radio Field Testing done.

### 5.0 System Equipment Considerations

- 5.0.1 The GE MDS MCR-900 unlicenced radio was used to qualify radio performance for the Study. The GE MDS Orbit LN9 radio was used to measure signal from Mt. McDonald. The GE MDS Orbit Cell Modem was used to measure cell signal. For any unlicenced measurements a number of parameters were gathered with the MCR-900 radio: RSSI, LQI, and IPERF Data Throughput.

### 6.0 Radio Path Evaluation

The following tasks were completed to assess radio path performance:  
(See Appendix B)

- 6.0.1 Field Testing to Lively Peak.
  - 6.0.1.1 Path to Capstan Pump Station
  - 6.0.1.2 Path to Masthead Pump Station

- 6.0.1.3 Path to Galleon Pump Station
- 6.0.1.4 Path to Buccaneer Pump Station
- 6.0.1.5 Path to WTP
- 6.0.1.6 Path to Bosun Pump Station
- 6.0.1.7 Path to Frigate Reservoir
- 6.0.1.8 Path to Magic Lake Pump Station

6.0.2 Field Testing to Frigate Reservoir

- 6.0.2.1 Path to Cutlass Pump Station
- 6.0.2.2 Path to Masthead Pump Station

6.0.3 Field Testing to Galleon Pump Station

- 6.0.3.1 Path to Masthead Pump Station
- 6.0.3.2 Path to Buck Lake Pump Station

6.0.4 Field Testing to Capstan Pump Station

- 6.0.4.1 Path to Schooner WWTP
- 6.0.4.2 Path to Schooner Pump Station
- 6.0.4.3 Path to Buck Lake Pump Station
- 6.0.4.4 Path to Frigate Reservoir

6.0.5 Field Testing at the Cannon Pump Station

- 6.0.5.1 Path Test to Mt. Bruce Using Unlicensed TransNet Radio
- 6.0.5.2 Path Test to Mt. McDonald Using Licensed LN9 Radio
- 6.0.5.2 Cellular Test Using Orbit Cellular Modem

7.0 Unlicensed/Licensed System Design

In consideration of the radio path assessment completed in Section 6.0, the following radio system design considerations are submitted:

7.0.1 MDS TransNet unlicensed Radio Specifications:  
(See Appendix C)

- 7.0.1.1 RF Transmit Power: 1 Watt
- 7.0.1.2 Receive Sensitivity: -108 dBm
- 7.0.1.3 Maximum Baud Rate: 115 kbps
- 7.0.1.4 Very powerful SAF functionality (Serial data only radio)

7.0.2 MDS Orbit MCR/ECR-900 unlicensed Radio Specifications

7.0.2.1 RF Power: 1 Watt

7.0.2.2 Receive Sensitivity: -105dBm to -95dBm (Depending on Configuration)

7.0.2.3 Maximum Baud Rate: 1.25Mbps, depending on RF conditions

7.0.2.4 Powerful SAF functionality, but limited with TCP/IP functionality

7.0.2.4 IP radio, but fully capable of serial payload data

7.0.3 MDS Orbit LN4 Licensed Radio Specifications:

7.0.3.1 RF Transmit Power: 10 watts

7.0.3.2 Receive Sensitivity: -115 dBm to -103dBm (Depending on Configuration)

7.0.3.3 Maximum Baud Rate: 64 kbps

7.0.3.4 TCP/IP with built-in Firewall and Router

7.0.3.5 Limited SAF functionality

7.0.4 An Industry accepted radio system design standard for 900MHz SCADA radio is a Fade Margin of 22 dB to obtain a radio path reliability of 99.4%. Depending on level of data “availability” that is needed this number can be reduced or increased. A 99.4% reliability link will suffer outages over a one-year period of 52 hours and 24 minutes. Licensed and unlicensed radios each have their own advantages/disadvantages. Each may be more appropriate depending on system requirements.

8.0 Conclusion

8.0.1 A 400 MHz Licenced radio system could be implemented that would produce improved radio coverage. However, we are recommending using unlicensed 900MHz radios for the following reasons:

8.0.1.1 There would still need to be at least 2 cell modems with a UHF System.

8.0.1.2 Adding three more cell modems to make the 900MHz system work is not a significant cost. Certainly not enough cost to justify using the Bear Mountain frequency pair, as that may limit the use of this licenced frequency pair for larger SCADA uses in the future.

8.0.1.3 There are significant bandwidth limitations with Licenced radio, as compared to Unlicensed.

8.0.1.4 There is ISSED(IC) licencing costs with Licenced radio.

8.0.2 A 900 MHz Unlicensed Radio System upgrade could be implemented as follows:



8.0.2.1 Install a Master Radio (AP) at the Lively Peak (Captain's Reservoir) with the following sites communicating directly to this site.

- 8.0.2.1.1 WTP
- 8.0.2.1.2 Capstan Pump Station
- 8.0.2.1.3 Galleon Pump Station
- 8.0.2.1.4 Buccaneer Pump Station
- 8.0.2.1.5 Frigate Reservoir
- 8.0.2.1.6 Magic Lake Pump Station
- 8.0.2.1.7 Bosun Pump Station

8.0.2.2 Install a SAF Radio at Galleon Pump Station that will communicate with the following sites:.

- 8.0.2.2.1 Masthead Pump Station
- 8.0.2.2.2 Buck Lake Pump Station
- 8.0.2.2.3 Lively Peak AP

8.0.2.3 Install a SAF Radio at the Capstan Pump Station that will communicate to the following sites:

- 8.0.2.3.1 Schooner WWTP
- 8.0.2.3.2 Capstan Pump Station

8.0.2.4 Install a SAF Radio at the Schooner WWTP site that will communicate to the following site:

- 8.0.2.4.1 Schooner Pump Station
- 8.0.2.4.2 Capstan Pump Station

8.0.2.5 Install Orbit Cellular Modems at the following sites that testing has shown to have weak radio paths. It should be emphasized that cellular only has a reliability of 95%. Far short of licensed or unlicensed radio that 99.4% is strived for. For example, this is the difference between 52 hours in a year of downtime (99.4%) and 438 hours of downtime (95%). One will go un-noticed by the SCADA system, the other will not.

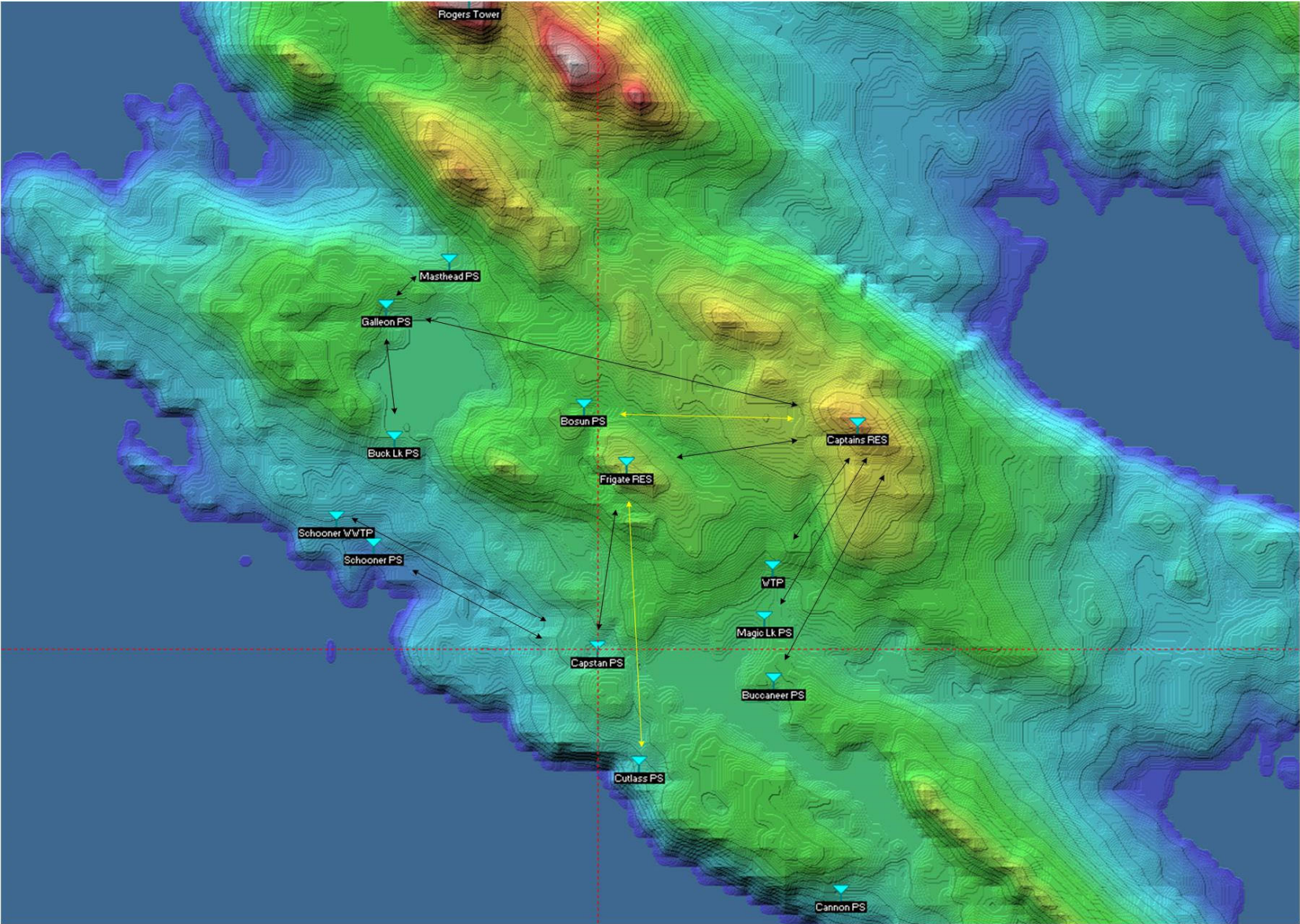
- 8.0.2.5.1 Bosun Pump Station
- 8.0.2.5.2 Schooner WWTP
- 8.0.2.5.3 Cutlass Pump Station
- 8.0.2.5.4 Cannon Pump Station

## 9.0 Recommendations

In consideration of the conclusions identified in Section 8.0, it is recommended:

- 9.0.1 Plan the most reliable system possible based on the data in this report.  
(See Appendix A)
- 9.0.2 Install cellular radio at sites that do not have reliable radio path (99.4% Reliability) based on the data in this report.  
(See Appendix A)
- 9.0.3 Any site where cellular is implemented, and radio coverage is available but does not meet reliability parameters, should have radio configured as backup.
- 9.0.4 Implement cellular radio for desired remote access for control and diagnostics. For example, the radio path from Schooner WWTP to Capstan Pump Station is Marginal. So, it would make sense to install a cell modem at Schooner WWTP which would give remote access and fast backhaul functionality. Schooner WWTP would still have a radio for communications to Capstan Pump Station and Schooner Pump Station. Schooner Pump station needs to use Schooner WWTP as a SAF or cell site to get communications out. Perhaps set-up the WTP as the cell Hub if that is where the Host software will be located? Or bring the system back to Macauley and install the cell Hub at that location?
- 9.0.5 Implement redundant equipment at key sites if uptime is critical. Remove as many single points of failure as possible. For example, install Master radios at the WTP and Captain's Reservoir.
- 9.0.6 Use directional antennas everywhere possible, as per Industry Canada's directive.
- 9.0.7 Implement Security measures available with the Orbit radios.
- 9.0.8 Complete a radio network system design, including Bench Testing, based on feedback to the results of this Report.

## Appendices



Appendix A – Overview Map



CRD Magic Lake Estates Path Analysis

Field Testing - 900MHz (unlicensed)

October 6, 2022

	Location	Latitude (North dms)	Longitude (West dms)	Bearing to Capstan PS	Path Length (km)	Elevation (m)	AGL (FT)	RSSI (-dBm) Measured	LQI (Signal Quality)	IPERF Data Speed (kbps)	Fade Margin 500 Modem (dB)	Fade Margin 250 Modem (dB)	Reliability 500/250 (%)	Comments
<b>Paths to Capstan Pump Station</b>														
1	Schooner WWTP	48.76844°	-123.3047°	116.5	0.85	29.6	20	80	6	225	19	23	99.1	Marginal/Good
2	Schooner Pump Station	48.76767°	-123.3031°	114.7	0.8	15.4	25	89	12	195	10	14	92/95	Poor/Poor
3	Buck Lake Pump Station	48.77078°	-123.3022°	135.9	0.95	69	20/30	98/94	14/12	178	5	9	75/91	No Good
4	Frigate Reservoir	48.77003°	-123.29200°	188.7	0.61	130.4	42	77	7	315				Good (Top or RES)
5	Capstan Pump Station	48.76467°	-123.2932°	-	-	61.2	30	-	-	-	-	-	-	-
<b>Notes:</b>								<b>LQI / Modem</b>	<b>125 kbps</b>	<b>250 kbps</b>	<b>500 kbps</b>	<b>1000 kbps</b>	<b>1000W kbps</b>	<b>1250 kbps</b>
								Pristine	0 - 8	0 - 16	0 - 8	0 - 4	0 - 1	0 - 1
								Usable	9 - 14	17 - 21	9 - 14	5 - 6	2 - 3	2 - 3
								Sensitivity (dBm) based on 1x10 <sup>-6</sup> @ XXX kbps	-105	-103	-99	-95	-95	-95
								Good: ≥22 dB of Fade Margin						
								Marginal: <22dB, ≥18 dBd of Fade Margin						
								Poor: <18 dB, ≥10 dB of Fade Margin						
								No Good: < 10 dB of Fade Margin						
All Unlicensed Radio Tests Used the 500kbps Modem														
Acceptable Fade Margin Based on Reliability of 99.4% or 22dB.														

CRD Magic Lake Estates Path Analysis

Field Testng - 900MHz (unlicenced)

October 6, 2022

	Location	Latitude (North dms)	Longitude (West dms)	Bearing to Galleon PS	Path Length (km)	Elevation (m)	AGL (FT)	RSSI (-dBm)	LQI (Signal Quality)	IPERF Data Speed (kbps)	Fade Margin 500 Modem (dB)	Fade Margin 250 Modem (dB)	Reliability 500/250 (%)	Comments																												
<b>Paths to Galleon Pump Station</b>																																										
1	Masthead Pump Station	48.77592°	-123.2998°	234.0	0.25	71.5	10	77	8	349	22	26	99.4/99.7	Good																												
2	Buck Lake Pump Station	48.77078°	-123.3022°	356.4	0.42	68.9	10	49	5	380	50	54	99.999/99.999	Good																												
3	Galleon Pump Station	48.77458°	-123.3026°	-	-	77.2	30	-	-	-	-	-	-	-																												
<b>Notes:</b>																																										
								<table border="1"> <thead> <tr> <th>LQI / Modem</th> <th>125 kbps</th> <th>250 kbps</th> <th>500 kbps</th> <th>1000 kbps</th> <th>1000W kbps</th> <th>1250 kbps</th> </tr> </thead> <tbody> <tr> <td>Pristine</td> <td>0 - 8</td> <td>0 - 16</td> <td>0 - 8</td> <td>0 - 4</td> <td>0 - 1</td> <td>0 - 1</td> </tr> <tr> <td>Usable</td> <td>9 - 14</td> <td>17 - 21</td> <td>9 - 14</td> <td>5 - 6</td> <td>2 - 3</td> <td>2 - 3</td> </tr> <tr> <td>Sensitivity (dBm) based on 1x10<sup>-6</sup> @ XXX kbps</td> <td>-105</td> <td>-103</td> <td>-99</td> <td>-95</td> <td>-95</td> <td>-95</td> </tr> </tbody> </table>							LQI / Modem	125 kbps	250 kbps	500 kbps	1000 kbps	1000W kbps	1250 kbps	Pristine	0 - 8	0 - 16	0 - 8	0 - 4	0 - 1	0 - 1	Usable	9 - 14	17 - 21	9 - 14	5 - 6	2 - 3	2 - 3	Sensitivity (dBm) based on 1x10 <sup>-6</sup> @ XXX kbps	-105	-103	-99	-95	-95	-95
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All Unlicenced Radio Tests Used the 500kbps Modem								Poor: <18 dB, ≥10 dB of Fade Margin																																		
								No Good: < 10 dB of Fade Margin																																		



CRD Magic Lake Estates Path Analysis

Field Testng - 900MHz (unlicensed)

October 6, 2022

	Location	Latitude	Longitude	Bearing to Frigate RES	Path Length (km)	Elevation (m)	AGL (FT)	RSSI	LQI	IPERF	Fade Margin		Reliability	Comments	
		(North dms)	(West dms)					(-dBm)	(Signal Quality)	Data Speed (kbps)	500 Modem (dB)	250 Modem (dB)	500/250 (%)		
<b>Paths to Frigate Reservoir</b>															
1	Cutlass Pump Station	48.76131°	-123.2914°	357.5	0.97	55.4	10/20/30/40	97/99/92/89	14/17/17/14	12	10	14	92/95	Poor	
2	Masthead Pump Station	48.77592°	-123.2998°	138.9	0.87	71.5	30/40	98/94	19/18	?	5	9	75/91	No Good	
3	Frigate Reservoir	48.77003°	-123.29200°	-	-	130.4	42	-	-	-	-	-	-	-	
<b>Notes:</b>															
								<b>LQI / Modem</b>	125 kbps	250 kbps	500 kbps	1000 kbps	1000W kbps	1250 kbps	
								Pristine	0 - 8	0 - 16	0 - 8	0 - 4	0 - 1	0 - 1	
								Usable	9 - 14	17 - 21	9 - 14	5 - 6	2 - 3	2 - 3	
								Sensitivity (dBm) based on 1x10 <sup>-4</sup> @ XXX kbps	-105	-103	-99	-95	-95	-95	
								Good: ≥22 dB of Fade Margin							
								Acceptable Fade Margin Based on Reliabilty of 99.4% or 22dB. Marginal: <22dB, ≥18 dBd of Fade Margin							
								All Unlicensed Radio Tests Used the 500kbps Modem Poor: <18 dB, ≥10 dB of Fade Margin							
								No Good: < 10 dB of Fade Margin							



CRD Magic Lake Estates Path Analysis

Field Testing - 900MHz (unlicensed)

October 5, 2022

	Location	Latitude (North dms)	Longitude (West dms)	Bearing to Lively Peak	Path Length (km)	Elevation (m)	AGL (FT) (Bucket Truck)	RSSI (-dBm) Measured	LQI (Signal Quality)	IPERF Data Speed (kbps)	Fade Margin (dB)	Fade Margin (dB)	Reliability 500/250 (%)	Comments	
<b>Paths to Lively Peak (Shaw Tower)</b>															
1	Capstan Pump Station	48.76467°	-123.2932°	51.7	1.11	61.2	10/20/30/40/50	88/85/78/78/77	8/8/9/8/8	83@30'	22	26	99.4/99.7	Good @ 30'	
2	Masthead Pump Station	48.77592°	-123.2998°	138.6	1.54	71.5	10/20/30/40/50	122/99/99/98/?	?/16/16/16/?	19@30'	1	5	55/75	No Good	
3	Galleon Pump Station	48.77458°	-123.3026°	105.0	1.61	77.2	10/20/30/40/50	89/90/76/77/?	7/8/8/8/?	198@30'	22	26	99.4/99.7	Good @ 30'	
4	Buccaneer Pump Station	48.76372°	-123.8254°	20.6	0.85	78.2	10/20/30/40/50	72/72/73/?/?	5/5/6/?/?	251@30'	27	31	99.8/99.23	Good @ 10'	
5	Water Treatment Plant	48.76700°	-123.2855°	35.2	0.53	83.4	10/20/30/40/50	85/85/76/74/?	8/8/8/8/?	132@30'	25	29	99.6/99.91	Good @ 30'	
6	Bosun Pump Station	48.77169°	-123.2938°	69.0	0.92	102.2	10/20/30/40/50	?/87/?/?/?	?/6/?/?/?	44@20'	12	16	94/97	Poor	
7	Frigate Reservoir	48.77003°	-123.29200°	83.4	0.78	130.4	10/20/30/40/50	67/67/65/?/?	5/5/5/?/?	329@30'	34	38	99.95/99.99	Good @ 10'	
8	Magic Lake Pump Station	48.76553°	-123.2859°	29.2	0.68	76.9	10/20/30/40/50	82/82/72/?/?	8/13/12/?/?	279@30'	27	31	99.8/99.23	Good @ 30'	
9	Lively Peak	48.77083°	-123.2814°	-	-	167.9	-	-	-	-	-	-	-	-	
<b>Notes:</b>															
								LQI / Modem	125 kbps	250 kbps	500 kbps	1000 kbps	1000W kbps	1250 kbps	
								Pristine	0 - 8	0 - 16	0 - 8	0 - 4	0 - 1	0 - 1	
								Usable	9 - 14	17 - 21	9 - 14	5 - 6	2 - 3	2 - 3	
								Sensitivity (dBm) based on 1x10 <sup>-6</sup> @ XXX kbps	-105	-103	-99	-95	-95	-95	
	Acceptable Fade Margin Based on Reliabilty of 99.4% or 22dB.														
	All Unlicensed Radio Tests Used the 500kbps Modem Setting							Good: ≥22 dB of Fade Margin							
								Marginal: <22dB, ≥18 dBd of Fade Margin							
								Poor: <18 dB, ≥10 dB of Fade Margin							
								No Good: < 10 dB of Fade Margin							

# TransNET

Long Range, High Speed  
Serial Communications



## Data Acquisition | Compact and Unlicensed

Today's SCADA and Telemetry systems transport large amounts of data at ever-increasing speeds. Additionally, the need for greater packaging flexibility has redefined the "ideal" wireless platform. The MDS TransNET™ utilizes FHSS (Frequency Hopping Spread Spectrum) to provide reliable long range data transportation at up to 115.2 kbps. The TransNET provides transparent data communications for nearly all SCADA, Telemetry, and EFM protocols including Modbus.

Any MDS TransNET may be configured as a repeater to extend the operating range of the network. Multiple repeaters may exist at any level of the network preventing a single radio failure from disabling the entire network.

### Key Benefits

- Digital signal processing (DSP) technology with self-equalization, automatic CRC/ARQ and powerful forward error correction
- Quick return on investment with plug-and-play installation
- Unlicensed radio design
- Communicate with any asynchronous protocol without extra software or additional programming
- Excellent performance in the face of interference or difficult signal paths
- Network-wide diagnostics software simplifies tasks and reduces costs

### Application Specific Wireless Solution



#### Oil & Gas

- Remote monitoring of pipeline flow and status signals
- Monitor and transmit wellhead pressure and tank levels collected by RTUs



#### Energy

- Remote control of IED and PLC at distribution substations
- Condition monitoring for pole-top circuit breakers and capacitor banks



#### Water & Wastewater

- Monitor lift stations across multiple sites from control room



#### Heavy Industrial

- Activation of perimeter gates based on detection of vehicle
- Monitor and control remote pumps and compressors

## Industrially Hardened

- Operational temperature range from -40°C to 70°C
- CSA Class I, Div. 2 groups A, B, C, D for hazardous locations

## Application Flexibility

- Low power consumption sleep mode for solar powered applications
- Long range wireless communication, up to 30 miles
- High speed throughput to 115.2 Kbps

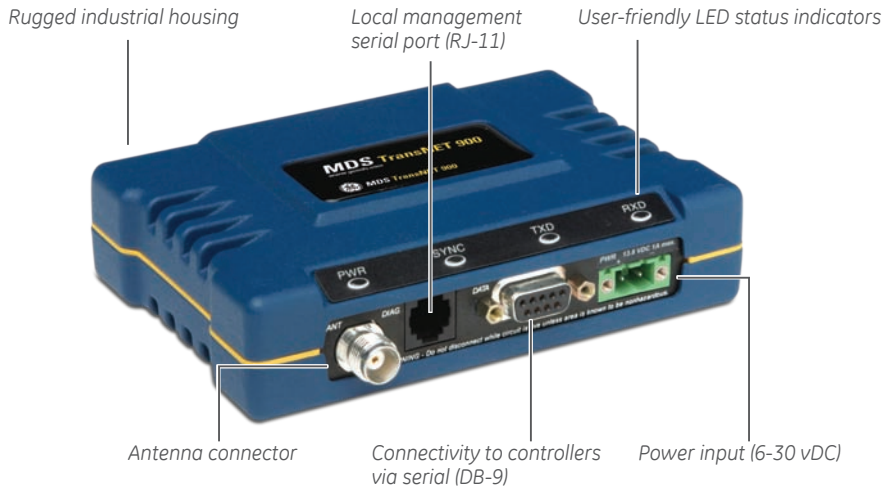
## Reliable & Scalable

- Point-to-Multipoint, 2-way communication
- High receive sensitivity for noisy environments and long distances
- Compatible with multiple industry protocols including Modbus and DNP3
- Unparalleled robustness with forward error correction and CRC/ARQ multiple re-sends
- Store and forward to extend network range cost-effectively

## Secure

- Proprietary hopping algorithm among 128 channels

Remote & Access Point



Specifications

**GENERAL**

Frequency Band 902-928 MHz ISM band  
 Dimensions 8.9 D x 12.7 W x 2.5 H cm.  
 (3.5 D x 5 W x 1 H in.)  
 Input Power 6 to 30 Vdc  
 Current Drain for AP and Remote

Mode	30 Vdc	13.8 Vdc	6 Vdc
Transmit	236 mA	510 mA	1.18 A
Receive	51 mA	100 mA	155 mA

Sleep Mode 4 mA typical  
 Temperature -40° C to +70° C  
 Range Up to 30 miles  
 Humidity < 95% RH (Non-Condensing)

**TRANSMITTER**

Power Output 1 Watt (30 dBm) at 6 Vdc to 30 Vdc, user selectable down to 100 mw (+20 dBm)  
 Modulation CPFSK

**RECEIVER**

Sensitivity -105 dBm (1 x 10<sup>-6</sup> BER) typical  
 Error Detection CRC16; Resend on Error  
 Interference Avoidance  
 64,000 hop patterns selected automatically via network address  
 FEC, CRC/ARQ and/or Multiple Packet Transmits  
 Excellent Strong Signal (interference) Characteristics  
 Band Segmentation for Friendly Coexistence with other services such as LMS

**DATA**

Interface RS-232/RS-485 (User Selectable)  
 Usable Throughput 115.2 kbps  
 Port Speeds 1.2 to 115.2 kbps

**CONNECTORS**

Power, User, NMS 2 Pin Phoenix, DB-9, RJ11  
 RF TNC

**OPERATING MODES**

Point-to-Multipoint  
 Master  
 Remote  
 Repeater Extension (store and forward) – Unlimited repeaters, self healing networks

**NETWORK MANAGEMENT**

Diagnostics  
 Centralized network control eliminates site visits  
 Create store and forward configurations  
 Compatible with other MDS Products  
 MDS InSite

**AGENCY APPROVALS**

FCC Part 15 Approved  
 UL/CSA Class 1 Div. 2 approved (UL 508, UL 1604)  
 IC Approved

Ordering

TransNET Remote and Access Point

EL805-MD	* X * A * C * * * N	
Frequency	9	MDS 900-928 MHz long range (up to 30 miles), FCC and IC approved
	2	MDS 2.4 GHz long range (up to 15 miles), not FCC/IC/ETSI approved
Interface	0	RS-232
	1	RS-485
Diagnostics	N	None
	W	Network-wide

**Order Code Example**

EL805-MD9X1AFCS0WN

- Chassis-enclosed radio
- 902-928 MHz band
- RS-232 interface
- Include network diagnostics

Accessories for the TransNET

Fixed Remote Kit with Yagi	KFR-N09-D1
Power Supply (AC Input)	01-3682A02

View Accessories catalog at [www.gemds.com](http://www.gemds.com)

Visit [www.GEMDS.com/TransNET](http://www.GEMDS.com/TransNET) to:



- Buy TransNET through the online store
- Download guideform specifications
- Download user documentation
- Read application notes and white papers



# MDS Orbit Unlicensed Solutions

## 900MHz and 2.4/5 GHz Routers for Cost-Effective Industrial Deployments

Orbit's industry-leading networking and security capability as well as its support for a variety of wireless technologies and topologies position it as a single box, OPEX-saving platform for industrial networks.

GE's unlicensed wireless solutions provide exceptional performance with 900MHz or Wi-Fi to extend secure connectivity across industrial networks.

### Key Benefits

- Extend industrial networks into rural and Field Area Networks using Orbit's 900MHz Unlicensed, Wi-Fi, and cellular connectivity
- High performance interference avoidance and very low latency 900MHz technologies along with advanced Quality of Service enable determinism for critical and industrial applications
- Orbit's integrated routing, switching, Quality of Service (QoS) and comprehensive security provide for flexible integration into modern networks
- A holistic cyber security framework protects the users, the network and assets and allows operators to meet stringent government and corporate cyber security requirements
- Rugged durable design, wide temperature range and low power consumption provide deployment life extension in the harshest of environments while protecting CAPEX investment

### Applications



#### Oil & Gas

- Well head and production pad automation
- Pipeline monitoring and control
- WiFi for field operations



#### Water & Wastewater

- Level, pressure and flow monitoring
- Pipeline monitoring and control



#### Utility

- DA & AMI convergence
- Renewables protection and control with IEC® 61850
- Substation device monitoring and video surveillance



#### Heavy Industrial

- Heavy machinery monitoring
- Excavation machine control
- Facility-wide network extension to offsite areas

## What's New

- New SFP fiber interface
- New alarm input with optional alarm sensor kit
- Configurable automatic over-the-air radio firmware upgrades
- VRF and Open VPN
- EMP hardened per MIL-STD-461G, RS105

## Comprehensive Security

- Advanced firewall protects users and network assets against intrusion
- IPSec VPN enables secure enterprise-class encrypted communication
- Secure boot protects integrity of firmware
- Extensive X.509 digital certificate management simplifies provisioning
- Integration with enterprise systems via RADIUS, AAA, SCEP, SNMPv3 and Syslog
- FIPS 140-2 (Level 2) certified\*

## Deterministic Performance

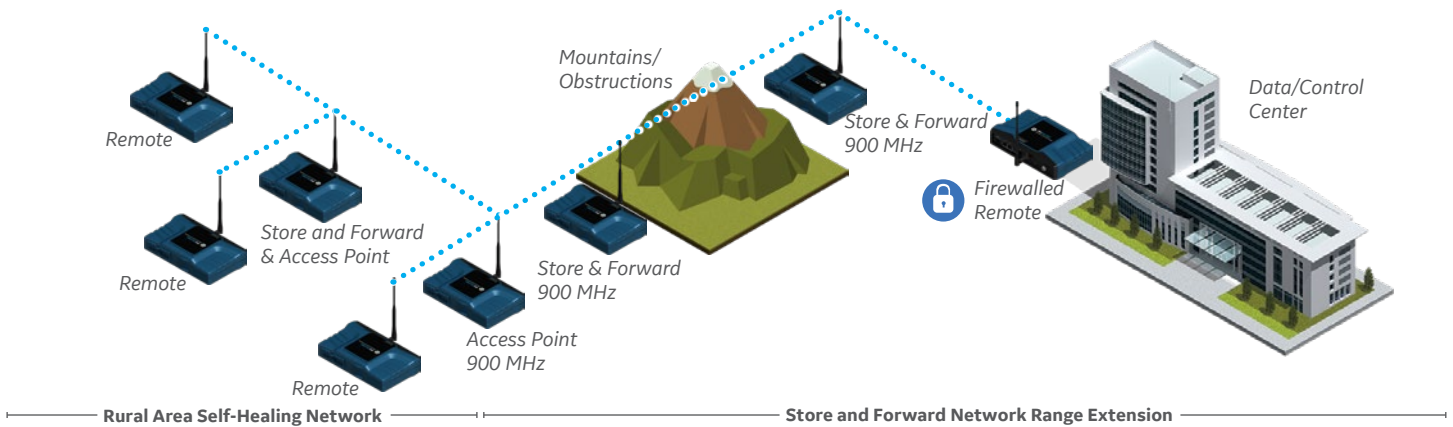
- High performing 900MHz unlicensed FHSS and dual-band Wi-Fi routers
- Low latency for critical and demanding protection applications
- Advanced Quality of Service ensures deterministic application performance
- Designed to endure harsh environments:
  - Enhanced ESD protection
  - Extended temperature (-40 to +70 C)
  - Class 1/Div 2 & IEEE® 1613 compliance





# The MDS Orbit Platform Models & Radio Support

## MDS Orbit as Enabler for Classic Multipoint Communication with Coverage Extension Into Rural Areas



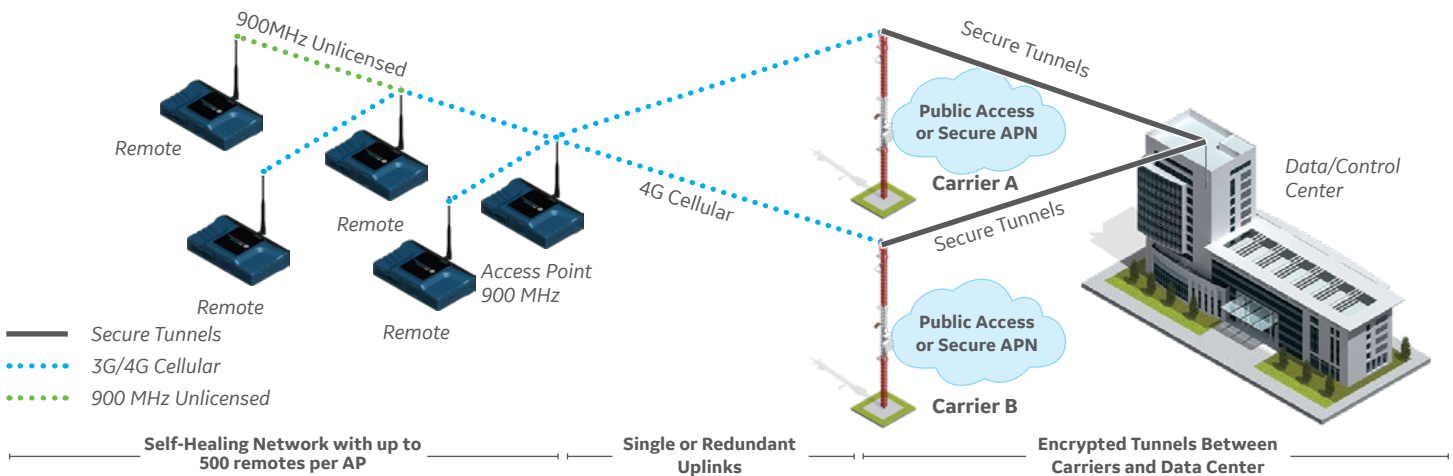
### Features

- MDS Orbit’s flexible 900MHz unlicensed deployment architectures as well as support of > 30 miles per segment with effective FHSS interference avoidance make it an ideal enabler for the expansion of network coverage into remote and rural areas
- A large scalability of remotes per Access Point expands network coverage into massive footprints
- High performance Store and Forward technology allows repeaters to be daisy chained for up to 8 hops in series to extend network range through mountainous or rugged terrain
- Stateful firewalling as well as RF and IPsec encryption ensure protection of data, users and network assets from intrusion

### Application Examples

- Oil & gas production fields, oil pipeline monitoring & control, Distribution Automation Field Area Networks, water & waste water, municipalities

## MDS Orbit as 900MHz Unlicensed Gateway with Multiple Encrypted Uplinks Through Public Carriers



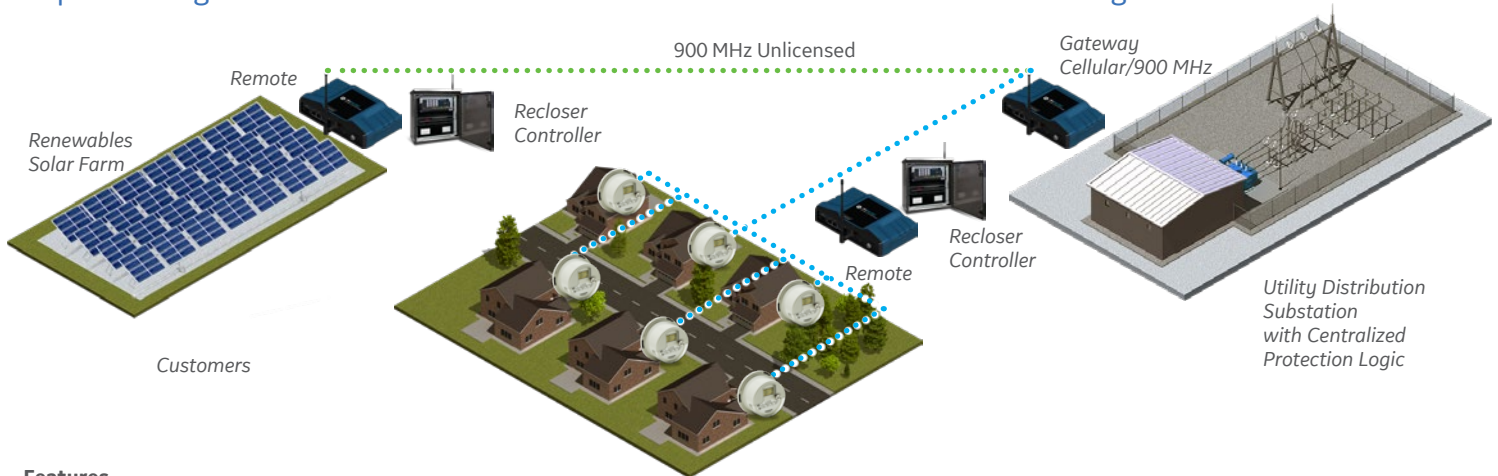
### Features

- MDS Orbit MCR-900 supports a second wireless card which could be 4G LTE with 3G fallback.
- The large scalability of MDS Orbit unlicensed 900MHz remotes allows for cost effective expansion of network coverage to allows to cost-effectively expand network coverage to hundreds of sites with a single cellular uplink thus saving on OPEX by eliminating recurring per-site cellular subscription fees
- Stateful firewalling as well IPsec encryption can be applied on 900MHz or Cellular links to augment network security for critical applications and protect against intrusions

### Application Examples

- Advanced Metering Infrastructure (AMI) gateways, Distribution Automation Field Area Networks, water & waste water, municipalities, oil & gas production fields

## Implementing Renewables Protection & Control with the IEC 61850 Protocol using MDS Orbit



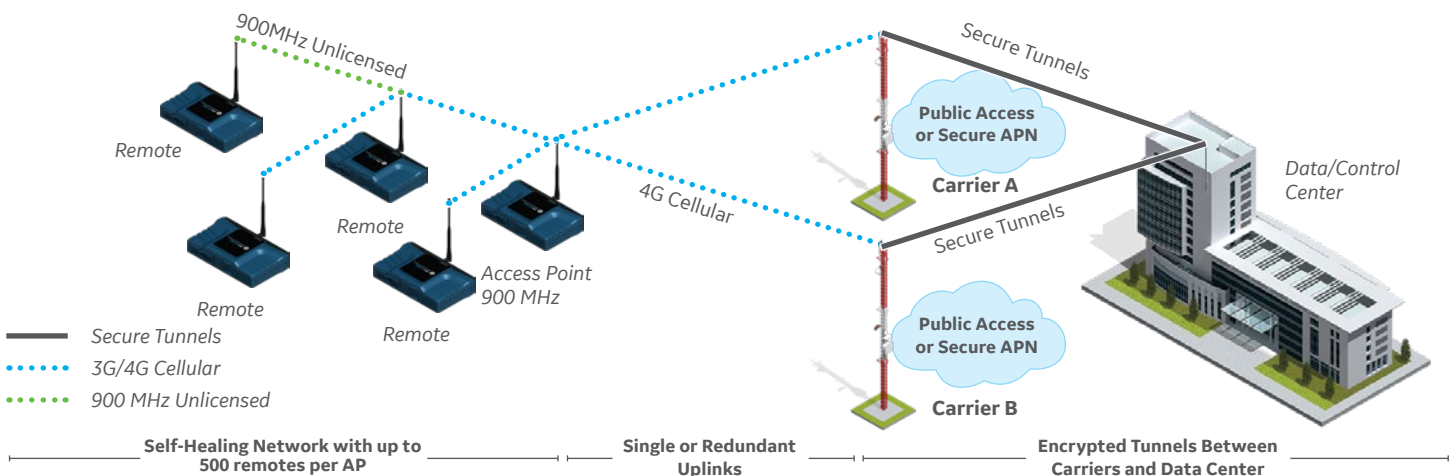
### Features

- MDS Orbit's high performance 900MHz unlicensed technology can transport IEC 61850 GOOSE Ethernet frames natively. It allows for data rates of up to 1.25Mbps with a latency tunable to as low as 5msec. This along with advanced Quality of Service facilitate advanced Distribution Automation applications such as Renewables/Distributed generation Protection & Control which demand low latency and network determinism
- A large scalability of remote enables cost-effective coverage of large customer and asset footprints
- Stateful firewalling as well as RF and IPsec encryption enable network operators to meet NERC® CIP / EPCIP and other stringent cyber security requirements by encrypting communication links and protecting network assets and users against intrusion

### Application Examples

- Distributed Generation/Renewables Protection & Control, Distribution Automation, critical infrastructure control, other protection applications

## MDS Orbit as a Network Convergence Enabler for Multiple Simultaneous Applications



### Features

- MDS Orbit supports advanced QoS functionality which allow it to prioritize egress traffic based on Layer 2- Layer 4 classifications. In this fashion, critical applications are assigned to the priority queue and are switched first to meet application requirements.
- Orbit is capable of up to 5 site-to-site IPsec VPN tunnels per device which give it flexibility to secure critical application paths as needed. Furthermore,
- Orbit supports a stateful firewall to protect the network and assets against intrusion.
- Orbit's support of multiple wireless and networking technologies make it an ideal network convergence platform.

### Application Examples

- Converged Distribution Automation (Protection, Control, SCADA, Metering, AMI etc.), Oil & Gas production fields (SCADA, control, Workforce, Video Monitoring)

# MDS Orbit Unlicensed Specifications

## 900 MHZ UNLICENSED

- Operating Modes: Access Point, Remote, Store & Forward
- Technology: Point-to-Point, Point-to-multipoint,
- Data Rates/Sensitivity:
  - 125 Kbps/-105 dBm - 1.0 Mbps/-95 dBm
  - 250 Kbps/-103 dBm - 1.25 Mbps/-95 dBm
  - 500 Kbps/-99 dBm
- Latency: tunable to <5 msec one-way
- Output Impedance: 50 Ohms
- Frequency: 902-928 MHz
- Frequency Masks: 16 masks, up to 5 channels per mask
- Spreading method: FHSS, DTS
- Occupied Bandwidth 152 to 1320 kHz, up to 80 channels
- Modulation 2, 4-level GFSK, Dwell Time 10-300 msec
- Carrier Power 100 mW – 1W, Range > 30 miles
- Media Access: Patent pending proprietary design, advanced interference avoidance, error detection, retransmission, auto repeat guaranteed collision free data, and dynamic fragmentation
- Input Voltage 10 to 60 VDC
- Typical Power Consumption:

	AP	REMOTE
Idle	4.0W	3.2W
50% Duty Cycle	5.3W	5.0W

## WI-FI OPTIONS

- IEEE 802.11 b/g/n 2.4 GHz option:
- 1x1 SISO (single antenna/radio chain)
  - Scalability up to 2 SSIDs, up to 7 clients/stations
  - Max transmit power (adjustable): up to 20dBm
  - Operating modes: Access Point (AP), Station, Station bridging
  - Security: WPA/WPA2 PSK, Enterprise
  - Applications:
    - Local configuration and management using Wi-Fi devices
    - Station/client connecting to a 2.4GHz AP in outdoor LOS environment
    - Small-scale 2.4GHz AP operating in outdoor LOS environment
- IEEE 802.11 a/b/g/n Dual-Band 2.4/5 GHz option:
- 2x2 MIMO (dual antenna/radio chain)
  - Scalability up to 2 SSIDs, up to 32+ clients/stations
  - Max transmit power (adjustable): up to 26dBm (23dBm per antenna/chain) for 2.4GHz and 23dBm (20dBm per antenna/chain) for 5GHz
  - 5GHz (U-NII-1 and U-NII-3 bands supported)
  - Operating modes: Access Point, Station, Station bridging, Access-Point-Station (simultaneous AP and Station operation)
  - Security: WPA/WPA2 PSK, Enterprise
  - Applications:
    - Local configuration and management using Wi-Fi devices
    - Station/client connecting to a 2.4GHz/5GHz AP in indoor/outdoor LOS/NLOS environment
    - Large-scale AP operating in indoor/outdoor LOS/NLOS environment

## CELLULAR OPTIONS

- Includes dual SIM, GSM eSIM, GPS, and 3G fallback
- 4G: 4G LTE-A NAM/EMEA/LATAM - Anterix™ 900 MHz, AT&T, Verizon, US Cellular\*, Bell, Telus, Rogers\*, Vodafone, FCC, PTCRB, CE, GCF
- 4GB: 4G LTE-A Pro - US - FirstNet Ready™, CBRS - AT&T, Verizon, FCC, IC, PTCRB
- 4GA: 4G LTE-A Pro Brazil/Australia - Telstra, GCF, Anatel, RCM/ACMA
- 4GD: 4G LTE with 2G/3G fallback - EMEA/LATAM - CE, GCF, Anatel
- See MDS Orbit Cellular brochure for more details

## CYBER SECURITY

- Tunneling: IPSec VPN compatible with Enterprise VPN concentrators
- Firewall: Stateful Packet Inspection Layer 2-4, Access Control Lists, NAT
- 900 unlicensed Encryption: AES-CCM 128/256 bit with auto key rotation
- Authentication: RADIUS, PSK, EAP/TLS, PKI
- Certificates: X.509, SCEP, PEM, DER
- Boot Security: Digitally signed firmware
- FIPS 140-2 (Level 2) certified\*

## NETWORKING TECHNOLOGIES

- Full IEEE 802.3 Layer 2 switching with Spanning Tree, VLANs, IGMP
- Layer 3 static routing
- Routing and Bridging from/to any interface (as applicable)
- Advanced L2-L4 Quality of Service
- Protocols: NAT, DHCP, ICMP, UDP, TCP, ARP, NTP, FTP, SFTP, TFTP, DNS
- Serial: TCP server, Modbus/TCP, Modbus RTU, TCP client, UDP Unicast and Multicast, BSAP, and DNP3
- VRF and Open VPN

## MANAGEMENT

- HTTP, HTTPS, SSH, NETCONF, local console
- SNMPv1/v2/v3, MIB-II, Enterprise MIB
- Syslog and Syslog-over-TLS, MDS PulseNET compatible

## ENVIRONMENTAL & AGENCY APPROVALS

- EMP: MIL-STD-461G, RS105 Electro Magnetic Pulse
- Operating Temperature: -40° to 70° C (-40° to 158° F) 900 MHz modem
- Humidity: 95% at 60° C (140° F) non-condensing
- Case: Die Cast Aluminum
- Dimensions: (1.75 H x 8.0 W x 4.8 D in.) | Weight: 2 lbs
- Mounting Options: Integrated DIN Rail mount, Standard bracket
- FCC Part 15, IC, ETSI / CE (3G and WiFi models)
- CSA Class 1, Div. 2, CSA C22.2 No. 142-M1987 & 213-M1987
- IEEC 1613\*\*, IEC 61850-3
- UL as it is in process and will be complete by time of publication also required for GE2GE opportunities

\* Check with local sales representative for availability.

\*\* Requires an external DC to DC converter having floating DC inputs (neither side grounded)

GE

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# MDS Orbit Licensed Solutions



## High Speed, Long Range, Exceptional Performance for Licensed Wireless Networks

The constant evolution of industrial SCADA applications coupled with the ever increasing scale of asset deployment cause significant challenges on underlying licensed narrowband networks. Such networks need to offer an always-on connectivity to maximize application availability. They must provide a comprehensive framework of security in order to guard against the intensified waves of cyber attacks. Finally, the wireless networks must enable advanced performance in order to scale and support modern TCP/IP applications.

The GE MDS Orbit is an industrial-strength wireless router platform that helps overcome the challenges of deploying modern industrial automation applications. In addition to enabling high performance communication over the 900MHz, 700MHz, 400 MHz, 200MHz\* and 100 MHz\* licensed narrowband spectrum, the Orbit platform offers a diverse range of integrated secondary radio options including cellular, Unlicensed 900MHz ISM as well as Wi-Fi.

### Key Benefits

- Repurpose narrowband spectrum for more bandwidth-intensive IP applications using QAM modulation
- Provide backward compatibility with GE MDS SD Series or legacy GE MDS x710 radios to seamlessly expand or migrate networks
- Minimize network downtime with dual radio uplinks and other redundancy features
- Protect network and assets against intrusion with powerful cyber security capabilities
- Simplify operations, reduce learning curves and reduce cost by unifying the deployment of multiple wireless technologies on a single platform

### Applications



#### Oil & Gas

- Well Head and Production Pad Controllers & Metering Automation
- Remote Field Office Connectivity



#### Water & Wastewater

- Monitoring and Control
- Maintenance Workforce Mobility



#### Emergency & Utility Vehicles

- Law enforcement connectivity
- Utility Workforce Mobility



#### Electric Utilities

- Field Area Network
- AMI Backhaul
- Workforce Mobility



#### Smart Cities & Municipalities

- Traffic Signals Control
- Video Security
- Weather Monitoring Stations



#### Heavy Industrial

- Train Control and Machinery Monitoring
- Excavation Machine Control

## Exceptional Network Performance

- Up to 64QAM of modulation enables newer applications in narrowband networks
- Bi-directional per-packet, per-remote Adaptive Modulation maximizes network throughput in uplink and downlink directions
- IP Header and Payload compression improve efficiency by up to 30%

## Advanced Security and Networking

- Enterprise-class cyber security including VPNs, key rotation, firewalling and centralized authentication for advanced protection
- FIPS 140-2 (Level 2) certification\*
- Rich Quality of Service allows for various modes of traffic prioritization in addition to per-application bandwidth allocation

## Platform Flexibility

- Backward-compatibility with GE MDS SD Series and x710 networks for a seamless migration path
- Variety of form factors with single or dual radio configurations

## Industry Leading Reliability

- A patented Media Access Control guarantees message delivery and eliminates collision at the Access Point
- Various uplink redundancy options, including cellular backup to improve network availability
- 3rd party Certified for IEEE1613, IEC61850-3, ATEX and Class 1 Div 2 for deployment in harsh environments





## Exceptional Network Performance

Improved productivity, optimization, preventive maintenance, quality control, regulatory compliance, safety and security are just a few of the requirements that drive the need to for high performance networks to support multiple applications and deliver actionable data collected from remote, geographically dispersed assets.

The GE MDS Orbit Licensed radio solutions bring new levels of networking performance to users operating narrowband licensed networks in 6.26, 12.5, 25, and 50\* kHz channels.

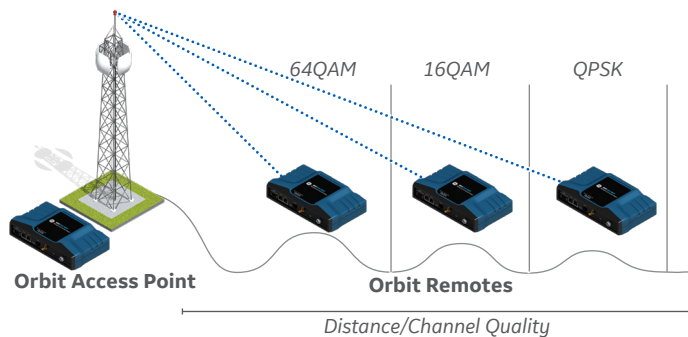
### Enhanced QAM Modulations

The GE MDS Orbit platform implements QAM modulation to achieve raw data rates up to 6 times faster than traditional FSK modulations variants typically utilized in legacy narrowband networks. With QAM modulation significant improvements in gross data rates can be achieved and can be improved even further with Orbits real-time compression on application data and underlying transport protocols such as IP.

CHANNEL SIZE	LEGACY SPEED	QPSK	16QAM	32QAM	64QAM	ORBIT ADVANCED MAC MODE THROUGHPUT <sup>1</sup>
6.25 kHz	4.8 kbps	9.6 kbps	19.2 kbps	24 kbps	28.8 kbps	174 kbps
12.5 kHz	9.6 kbps	20 kbps	40 kbps	50 kbps	60 kbp	400 kbps
25.0 kHz	19.2 kbps	40 kbps	80 kbps	100 kbps	120 kbps	758 kbps
50.0 kHz	38.4 kbps	80 kbps	160 kbps	200 kbps	240 kbps	1.37 Mbps

<sup>1</sup> Maximum TCP Throughput measured with Orbit configured for Advanced MAC Mode with Adaptive FEC, Adaptive Coded Modulation, Ethernet Header Compression, RHOC TCP, UDP, IP Compression, LZ0 Data Compression, Packet Concatenation, lperf TCP Server.

### Bi-Directional Adaptive Modulation



Bi-Directional Adaptive modulation maximizes throughput in both upstream and downstream directions for each remote independently. It enables Access Points and Remotes to transmit data at the highest possible modulation in real time, on a per-packet basis. The outcome is a network that does not sacrifice its overall performance for the least common denominator link.

### IP Header and Payload Compression

Orbit's IP Header and Payload compression improves network throughput efficiency by up to 30%. It is especially beneficial when using TCP based applications that tend to have a lot of handshaking, thus overhead.

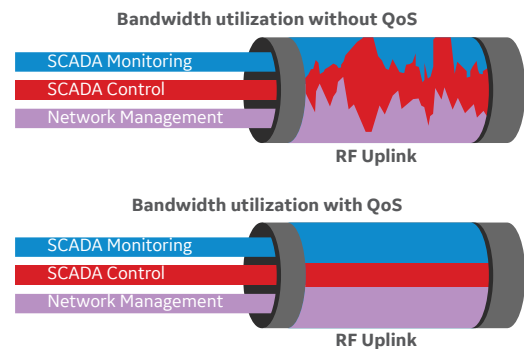
## Advanced Security & Networking

### Enterprise Class Security

The MDS Orbit platform is built on a comprehensive cyber security framework to enable the deployment of highly secure industrial applications. It offers standards-based IPSec VPN and DMVPN capabilities to ensure end-to-end IP encryption between remotes and headend regardless of the underlying backhaul. As an added layer of security, Orbit supports the encryption of licensed radio links at the RF layer with secure key rotation algorithms. Centralized RADIUS authentication and 802.1x enable only authorized users and machines to access the network at the intended entry points and times. Orbit's stateful firewall and MAC-filtering block unwanted traffic from flowing through the network. Orbit also employs secure device practices such as Secure Firmware and Secure Boot to protects against the tampering with its hardware and software.

### Dynamic Routing and Quality of Service

Orbit's support for dynamic and static routing as well as managed switch capabilities facilitate the deployment in a multitude of network architectures. Orbit's advanced QoS functionality enable the transport of multiple application streams in the same network without compromising the performance of critical traffic. With fair and priority queuing, and traffic shaping, Orbit offers choices to engineer traffic priorities and carve dedicated bandwidth on a per-application basis in order to maximize application performance and adhere to Service Level Agreements (SLAs).



## Platform Flexibility

### Variety of Form Factors

To help extend communications to a variety of enclosure systems, Orbit is offered in compact (ECR) and standard (MCR) form factors. They can be factory-configured with different interface and radio combinations.

### Diverse Radio Technologies

In addition to being offered in licensed spectrum, the Orbit platform supports communication in unlicensed 900Mhz, cellular technology as well as WiFi. Orbit can be factory-configured with single or dual-radios. This allows customers to deploy various radio technologies on the same platform, firmware and user experience thus standardizing operations, reducing cost and learning curves.

**Backward Compatibility with MDS SD and x710**

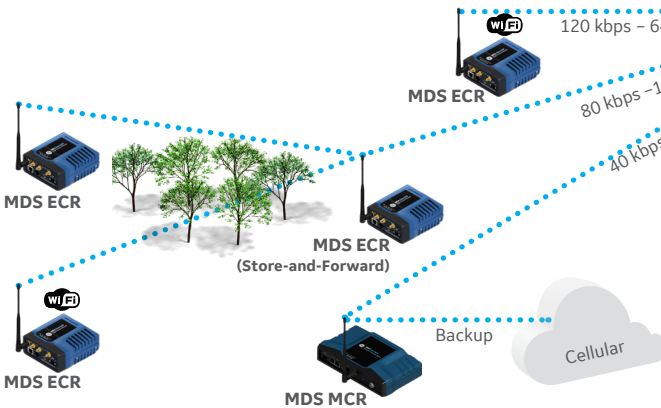
The MDS Orbit licensed narrowband radio can operate in a CPFSK Digital A backward compatible modulation to interface with existing MDS SD Series or x710 Access Points. Supporting Transparent (serial streaming) as well as Packet-with-Mac (IP) modes, this capability enables customers to seamlessly expand or migrate brownfield networks with minimum disruption.

**Integration with MDS Master Station**

Orbit's Licensed Narrowband radio technology integrates seamlessly with the MDS Master Station. The Master Station is a fully redundant solution for licensed communications, offering dual power supplies, dual radios, an integrated duplexer and with no cooling fans or moving parts.

**Application Example**

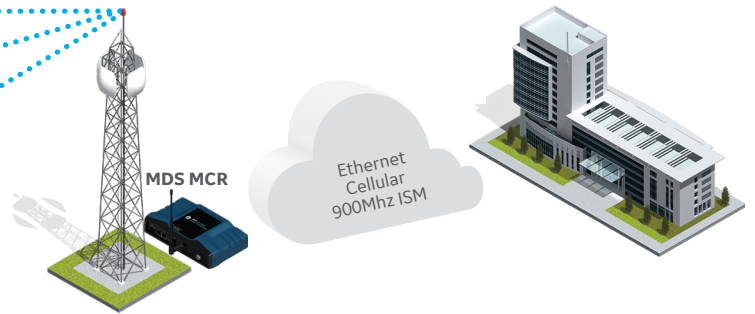
**Remotes**



**Access Point**

**Backhaul**

**Headend**



**Access Interfaces**

- Connect multiple RTU and Controller types to a single remote radio
- Access interfaces include Ethernet, Serial, and an optional WiFi

**Performance**

- Use QoS to prioritize critical SCADA over lower priority traffic
- Adaptive modulation automatically adjusts optimum speed in both directions
- A patented MAC enables network scalability with minimized impact on performance

**Security**

- Firewalling and MAC filtering block unwanted traffic at the network perimeter
- RF and IPSec VPN encryptions provide options for end to end communication security
- 802.1x at remote locations allow network access to only authorized users and machines

**Industry Leading Reliability**

**A Patented Media Access Control**

Media Access Control (MAC) is a mechanism that orchestrates and manages how devices access a network to transmit data. Orbit's patented MAC maintains optimal throughput as more devices and applications are added to the network. It further guarantees the delivery of data packets to intended destinations and eliminates data collision at the Access Point.

**Network High Availability**

To achieve maximum application uptime, Orbit supports a variety of High Availability mechanisms to enable multiple uplink paths. The Orbit platform supports dual radio configurations, such as Licensed Narrowband and Cellular, interface bonding, Spanning Tree, Layer 3 failover, VRRP as well as latency and packet-loss based failover. GRE tunneling coupled with IPSec VPNs and DMVPN further enable the establishment of secure Virtual Private Networks (VPN) across any wireless technology.

**Ease of Use and Management**



**Intuitive User Interface**

An easy-to-use Graphical User Interface (GUI) allows for the quick provisioning and maintenance from a web browser. Orbit supports HTTP, HTTPS, and SSH. Orbit's wizards speed up the configuration of complex network functionality by breaking down processes into simple, concise and automated steps.

**Network Management**

The Orbit platform supports standards based management using SNMPv1/2c/3, MIN-II and Enterprise MIB. NETCONF is also supported. The GE MDS PulseNET NMS fully integrates with Orbit to offer advanced network as well as device management capabilities. PulseNet enables auto-provisioning to simplify network deployment and reduce operation expenses.

**Orbit ECR and MCR Licensed Spectrum Models Comparison**

FORM FACTOR	PRIMARY LICENSED RADIO OPTIONS	SECONDARY RADIO OPTIONS	COMMUNICATION PORTS	MOUNTING
MCR 	150-174 MHz*, 216-235 MHz*, 330-406 MHz, 406-470 MHz, 450-520 MHz*, 757-758 & 787-788 MHz, 896-960 MHz	WiFi, 2G/3G/4G LTE 2G/3G GSM World Unlicensed 900 MHz (some combinations not supported)	Option A: 2 Ethernet, 1 Serial, 1 USB Option B: 1 Ethernet, 2 Serial, 1 USB Option C: 4 Ethernet, 2 Serial, 1 USB	Surface Mount DIN Mount Option
ECR 	150-174 MHz*, 216-235 MHz*, 330-406 MHz, 406-470 MHz, 450-520 MHz*, 757-758 & 787-788 MHz, 896-960 MHz	WiFi	1 Ethernet, 1 Serial, 1 USB	Surface Mount DIN Mount Option

Specifications

ORBIT LICENSED NARROWBAND TECHNOLOGY	
Module	Single
Configuration	
Frequency	Configurable
Duplex Modes	Half duplex
Modulation	CPFSK, QPSK, 16QAM, 64QAM
Adaptive Modulation	Per-packet, per-remote, bi-directional
Dynamic FEC:	Convolutional, Reed Solomon
Compression	IP Header and Payload with up to 30% efficiency improvement
Media Access Control	High performance MAC

ORBIT LICENSED NARROWBAND FREQUENCY BANDS	
•	150-174 MHz*
•	216-235 MHz*
•	330 - 406 MHz
•	406.1 MHz – 470 MHz
•	450 MHz – 520 MHz*
•	757-758 and 787-788 MHz
•	896 – 960 MHz

GROSS DATA RATES (ALL FREQUENCIES)			
Channel	32QAM	64QAM	Orbit Advanced MAC Mode <sup>2</sup>
6.25 kHz	24 kbps	28.8 kbps	174 kbps
12.5 kHz	50 kbps	60 kbps	400 kbps
25 kHz	100 kbps	120 kbps	758 kbps
50 kHz	200 kbps	240 kbps	1.37 Mbps

<sup>2</sup> Maximum TCP throughput measured with Orbit configured for Advanced MAC Mode with Adaptive FEC, Adaptive Coded Modulation, Ethernet Header Compression, RHOC TCP, UDP, IP Compression, LZ0 Data Compression, Packet Concatenation, Iperf TCP Server.

TRANSMITTER CHARACTERISTICS	
Frequency Stability	+/- 0.5 ppm
Peak Carrier Power	+40 dBm 330-470 MHz +39.5 dBm 896-9160 MHz
Average Power (Programmable)	QPSK: +36 dBm 16QAM: +33 dBm 64QAM: +33 dBm
Power Range	+20dBm to +40dBm
Carrier Power	(+/- 1.5 dB typical)
Accuracy	
Adjacent Channel	< -60 dB
Power	
Output Impedance	50 Ohms

RECEIVER CHARACTERISTICS			
Type	Direct Conversion		
Adjacent Channel Rejection	60 dB nominal		
Sensitivity (Actual)	@ 1x10 <sup>-6</sup> BER, No FEC		
Channel	QPSK	16QAM	64QAM
12.5 kHz	-112 dBm	-102 dBm	-95 dBm
25 kHz	-109 dBm	-99 dBm	-92 dBm
Sensitivity (Actual)	@ 1x10 <sup>-6</sup> BER, No FEC		
Channel	QPSK	16QAM	64QAM
12.5 kHz	-115 dBm	-109 dBm	-102 dBm
25 kHz	-112 dBm	-106 dBm	-99 dBm

AGENCY APPROVALS / STANDARDS	
• FCC Part 15 and IC	
• ETSI / CE	
• PTCRB, GCF	
• IEEE 1613**, IEC61850-3	
• CSA Class 1, Div. 2, UL 508, UL 1604	
• ATEX approval for EU on MCR	
• EN 60079-0:2012, EN60079-15:2010	
• Shock: MIL-STD-810F Method 516.5	
• Vibration: MIL-STD-810F Method 514.5	
• Shock and Vibration: EIA RS374A	
• Storage Temp: Mil-Std 810F Section 501.4 with 1 week soak test	
• IP 40/41 per IEC 60529 for Vertical Falling Water and Pollution 3 for Dust	
* Planned future release. Roadmap items subject to change.	
** Requires an external DC to DC converter having floating DC inputs (neither side grounded)	

NETWORKING
• IPv4 Routing OSPF, EBGp, RIPv2 with performance-based route failover
• IPv6 Routing*
• Full managed switch capability, IEEE 802.3, 802.1Q/VLANs, 64 VLANs, STP
• Concurrent Bridging & Routing
• GRE Tunneling with Layer 2 (Ethernet) and Layer 3 support
• Route/path failover between any two wireless/Ethernet interfaces based on link loss, latency degradation or packet loss thresholds
• Quality of Service 16 egress queues, Priority Queuing, Fair Queuing, Traffic Shaping, Classification based on DSCP, 802.1p and Layer 2-4 classifiers
• IP Protocols TCP, UDP, ARP, DHCP, ICMP, NTP, FTP, SFTP, TFTP, DNS, configurable HTTP and HTTPS, SSH
• Serial TCP server, Modbus/TCP, Modbus RTU, TCP client, UDP Unicast and Multicast, BSAP, and DNP3

SECURITY
• IPsec VPN Server (responder) and Client (initiator) with DMVPN
• Authentication Public Key, EAPTLS, Pre-Shared, lke 1-2
• Encryption : 3DES, AES 128/192/256, CBC, CTR, CCM, GCM, SHA 256/384/512 HMAC
• Firewalling: Stateful Layer 3-4 Firewall with MAC Filtering, NAT, Source NAT (Masquerading), Static NAT, Port Forwarding
• Device Security : Secure Boot, Secure Firmware, Digitally Signed Hardware and Software, Magnetometer Tamper Detection
• Certificate Management: X.509, SCEP, PEM, DER, RSA
• User Authentication: Local RBAC, AAA/RADIUS, 802.1x
• FIPS 140-2 (Level 2) certification in progress

MANAGEMENT
• GE MDS PulseNET NMS Support with device management and auto-provisioning
• GUI configuration Wizards to simplify operation
• Secure device management via an intuitive web-based GUI and/or CLI
• Event logging, Syslog-over-TSL, SSH, Console
• Iperf throughput diagnostic, NETCONF
• SNMP v1/2c/3, MIB-II, Enterprise MIB

MECHANICAL	
Case	Rugged die-cast aluminum
Dimensions MCR	1.75 H x 8.0 W x 4.8 D in. 4.45 H x 20.32 W x 12.19 D cm
Weight MCR	2 lbs., .91 kg
Dimensions ECR	2.1 H x 4.3 W x 4.6 D in. 5.33 H x 10.92 W x 11.68 D cm
Weight ECR	1.45 lbs., .65 kg

ENVIRONMENTAL
• Operating Temp -40° to +70° C (-40° 158°F)
• Storage Temp -40° to +85° C (-40° 185°F)
• Humidity 95% at 60° C (140° F) non-condensing

WARRANTY
• 5-year standard manufacturer warranty on all Orbit MCR/ECR models

SECONDARY RADIO OPTIONS
<b>Unlicensed 900Mhz ISM</b>
• Frequency Bands: 902-928 MHz FHSS
• Bandwidth 152 to 1320 kHz, up to 80 channels
• Modulation: 2, 4-level GFSK, Adaptive
• Raw Data Rates: 125kbps, 250kbps, 500 kbps, 1000 kbps, 1250 kbps
• Latency of < 5 msec
• TX Power: 1 watt, configurable

Cellular
• 2G/3G GSM World (AT&T, GSM, world coverage)
• 2G/3G/4G LTE North America with GPS: Verizon, AT&T, T-Mobile, Bell Canada, Rogers, Telus. Modem allows switching between carriers by upgrading to corresponding carrier profile firmware.
• 2G/3G/4G LTE EMEA & APAC with GPS
• 2G/3G/4G LTE Australia Telstra with GPS
• LTE Private Band 26

Wi-Fi
• 802.11 b/g/n operating at 2.4 GHz
• Up to 52 Mbps of throughput
• Operating Modes: AP, Client/Station

ORBIT MODEL INTERFACES	
<b>MCR Option A</b>	(2) 10/100 Ethernet, RJ45 (1) RS232/485 Serial, RJ45
<b>MCR Option B</b>	(1) mini USB 2.0 (1) 10/100 Ethernet, RJ45 (2) RS232/485 Serial, RJ45
<b>MCR Option C</b>	(1) mini USB 2.0 (4) 10/100 Ethernet, RJ45 (2) RS232/485 Serial, RJ45
<b>ECR</b>	(1) mini USB 2.0 (1) 10/100 Ethernet, RJ45 (1) RS232/485 Serial, RJ45 (1) mini USB 2.0
<b>Antenna Connectors</b>	Licensed NB:TNC 900Mhz Unlic: TNC Wi-Fi: RP-SMA Cellular: SMA GPS: SMA female

ELECTRICAL & POWER CONSUMPTION		
• Input Voltage	10 to 60 VDC	
• Power Consumption Calculations with nominal 25C at 13.8V		
<b>With 3G GSM World</b>	<b>Power</b>	<b>13.8V</b>
Connected (Idle)	2.5W	182mA
Typical download	3.2W	235mA
<b>With 4G LTE</b>	<b>Power</b>	<b>13.8V</b>
Connected (Idle)	4.0W	292mA
Typical download	4.3W	310mA
<b>With 4G LTE + Wi-Fi</b>	<b>Power</b>	<b>13.8V</b>
Connected (Idle)	4.8W	350mA
Typical download	5.5W	400mA
<b>With 900Mhz ISM</b>	<b>Power</b>	<b>13.8V</b>
Typical	3.2 W	232mA
Maximum	5.3 W	385mA
<b>With Licensed NB</b>	<b>AP</b>	<b>Remote</b>
Idle	910 mA	350 mA
50% Duty Cycle	950 mA	780 mA

\* check with sales for availability

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**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**    **2023 Schedule of Regular Board Meetings**

**ISSUE SUMMARY**

To provide notice of the 2023 meeting schedule for the Capital Regional District Board.

**BACKGROUND**

In accordance with Bylaw 3828, “*Capital Regional District Board Procedure Bylaw*”, regular meetings of the Capital Regional District (CRD) Board shall be held at the CRD Boardroom on the second Wednesday of the month commencing at 1:00 pm unless otherwise determined by a resolution of the Board.

**ALTERNATIVES**

*Alternative 1*

That the regular meetings for the Capital Regional District Board will be scheduled in 2023 on the second Wednesday of each month as follows: January 11, February 8, March 8, April 12, May 10, June 14, July 12, August 9 (at the call of the Chair), September 13, October 11, November 8 (inaugural), December 13.

*Alternative 2*

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

**IMPLICATIONS**

*Housing Corporation and Hospital District Boards*

The CRD Board meeting is regularly preceded by meetings of the Capital Region Housing Corporation and Capital Regional Hospital District Board. In 2021, the start time for all three Board meetings was changed to 1:00 pm to reduce the wait time between meetings.

**CONCLUSION**

The regular meetings for the Capital Regional District Board will be scheduled in 2022 on the second Wednesday of each month except for the months of September and November when a special meeting is held on the third Wednesday.

**RECOMMENDATION**

That the regular meetings for the Capital Regional District Board will be scheduled in 2023 on the second Wednesday of each month as follows: January 11, February 8, March 8, April 12, May 10, June 14, July 12, August 9 (at the call of the Chair), September 13, October 11, November 8 (inaugural), December 13.

Submitted by:	Marlene Lagoa, Manager, Legislative Services & Deputy Corporate Officer
Concurrence:	Stephen Henderson, Acting General Manager, Corporate Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer



Making a difference...together

## REPORT TO CAPITAL REGIONAL DISTRICT BOARD MEETING OF WEDNESDAY, DECEMBER 14, 2022

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**SUBJECT**    2023 Terms of Reference for Standing Committees

### **ISSUE SUMMARY**

To endorse the 2023 Terms of Reference for the CRD Board's Standing Committees.

### **BACKGROUND**

Under the *Local Government Act* and Bylaw No. 3828, "Capital Regional District Board Procedures Bylaw, 2012", the CRD Board Chair has the authority to establish Standing Committees and to appoint members to provide advice and recommendations to the Board.

Terms of Reference (TOR) serve to clarify the mandate, responsibilities and procedures of standing committees and provide a point of reference and guidance for the committees and members.

The annual process for the Standing Committees TOR is as follows:

1. review with the CRD Board Chair,
2. approval by the CRD Board, and
3. distribution to all Committees for information.

This year, there were no changes to the following Standing Committee's TORs:

- Core Area Liquid Waste Management Committee
- Environmental Services Committee
- Finance Committee
- First Nations Relations Committee
- Governance Committee
- Hospitals & Housing Committee
- Planning and Protective Services
- Regional Parks Committee

For 2023, the mandate for the Transportation Committee was updated to include roads, policy, and the Transportation Working Group.

Housekeeping updates were made to the TOR for the Electoral Areas Committee.

A redlined copy of the 2023 Standing Committee TOR is attached as Appendix A.

### **CONCLUSION**

Terms of Reference (TOR) serve to clarify the mandate, responsibilities and procedures of governing committees and provide a point of reference and guidance for the committees and their members. Any future revisions to the TOR will require ratification by the Board.

**RECOMMENDATION**

That the Board approve the 2023 Terms of Reference for Standing Committees attached as Appendix A.

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

**ATTACHMENT(S)**

Appendix A: 2023 Terms of Reference for Standing Committees (redlined)



# Terms of Reference

The logo for the Capital Regional District (CRD), consisting of the letters 'CRD' in a stylized, bold font.

## **CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE**

### **PREAMBLE**

The Capital Regional District (CRD) Core Area Liquid Waste Management Committee (CALWMC) is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding the Core Area Liquid Waste Management Plan and certain aspects of the Core Area Wastewater Treatment Project (CAWTP).

The Committee's official name is to be:

Core Area Liquid Waste Management Committee

### **1.0 PURPOSE**

- a) The mandate of the Committee is to oversee and make recommendations to the Board regarding the:
  - i. Administration and regulatory reporting for the Core Area Liquid Waste Management Plan
  - ii. Core area trunk sewers and sewage disposal systems
- b) The Committee will act as the steering committee of the Technical and Community Advisory Committee, as outlined in Appendix A.

### **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Board for consideration.
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

### **3.0 COMPOSITION**

- a) The membership is comprised of all directors on the CRD Board from the following municipalities that are participants in the Core Area Liquid Waste Management Plan:
  - Colwood
  - Esquimalt
  - Langford
  - Oak Bay
  - Saanich

- Victoria
  - View Royal
  - An elected representative and alternate from each of the Songhees Nation and Esquimalt Nation Councils (Board Procedures Bylaw No. 3828)
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

#### **4.0 PROCEDURES**

- a) The Committee shall meet quarterly and have special meetings as required at the call of the Committee Chair;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business

#### **5.0 RESOURCES AND SUPPORT**

- a) The General Manager, Integrated Water Services and General Manager, Parks & Environmental Services will act as a liaison to the Committee with support from other departments, as required; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*

**APPENDIX A**

**STEERING THE TECHNICAL AND COMMUNITY ADVISORY COMMITTEE  
CORE AREA AND WEST SHORE SEWAGE TREATMENT**

In accordance with the Terms of Reference of the [Technical and Community Advisory Committee Core Area and West Shore Sewage Treatment](#) (TCAC) approved by the Capital Regional District Board (CRD), August 14, 2013, the Core Area Liquid Waste Management Committee (CALWMC) will steer the TCAC as follows:

- Make recommendations to the CRD Board to appoint TCAC members
- Make requests to TCAC for appropriate technical and community consultation advice and input in order to facilitate informed decision-making in a variety of CAWTP matters that have not been delegated to the CAWT Project Board
- Dissolve the TCAC at the end of the planning stage of the Core Area and West Shore sewage treatment project or at a time determined by the CALWMC

# Terms of Reference

The logo for the Capital Regional District (CRD), consisting of the letters 'CRD' in a stylized, bold font.

## ELECTORAL AREAS COMMITTEE

### PREAMBLE

The Capital Regional District (CRD) Electoral Areas Committee is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding services in the electoral areas.

The Committee's official name is to be:

Electoral Areas Committee

### 1.0 PURPOSE

- a) The mandate of the Committee includes overseeing and making recommendations to the Board regarding services in the electoral areas including, but not limited to:
  - i. Building inspection
  - ii. Bylaw enforcement
  - iii. Animal control
  - iv. Grants-in-aid
  - v. Soil deposit and removal
  - vi. Stormwater quality
  - vii. Fire protection
  - viii. Local emergency management
  - ix. Local economic development
- b) The Committee also has the authority as delegated by the Board to:
  - i. Hold a hearing to file or cancel a Notice on Title (s. 57 & 58 of the *Community Charter*)
  - ii. Modify, assign or release a covenant registrable under s. 219 of the *Land Title Act*
- c) The Committee may also make recommendations to the Board to advocate to senior levels of government regarding issues of importance to electoral areas.
- d) The local service area committees and commissions as outlined in Appendix A will report through the Electoral Areas Committee.
- e) Any other matter that relates to the electoral areas may be referred to the Committee for consideration.

## **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Board; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

## **3.0 COMPOSITION**

- a) Committee members will include the Director from each of the electoral areas: Juan de Fuca, Salt Spring Island, and Southern Gulf Islands;
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

## **4.0 PROCEDURES**

- a) The Committee shall meet on a monthly basis, except August, and have special meetings as required;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

## **5.0 RESOURCES AND SUPPORT**

- a) The General Managers of the Planning & Protective Services and Finance & Technology departments will act as liaison to the committee; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*

## APPENDIX A

### Juan de Fuca Electoral Area Local Service Area Commissions/Committees:

- East Sooke Fire Protection & Emergency Response Service Commission
- Juan de Fuca Electoral Area Parks & Recreation Advisory Commission
- Otter Point Fire Protection & Emergency Response Service Commission
- Port Renfrew Fire Protection & Emergency Response Service Commission
- Port Renfrew Utility Services Committee
- Shirley Fire Protection & Emergency Response Service Commission
- Wilderness Mountain Water Service Commission
- Willis Point Fire Protection & Recreation Facilities Commission

### Salt Spring Island Electoral Area Local Service Area Commissions/Committees:

- Beddis Water Service Commission
- Cedar Lane Water Service Commission
- Cedars of Tuam Water Service Commission
- Fulford Water Service Commission
- Ganges Sewer Local Services Commission
- Fernwood and Highland Water Service Commission
- Maliview Sewer Local Service Commission
- Salt Spring Island Community Economic ~~Development~~Sustainability Commission
- Salt Spring Island Liquid Waste Disposal Local Service Commission
- Salt Spring Island Parks & Recreation Advisory Commission
- Salt Spring Island Transportation Commission

### Southern Gulf Islands Electoral Area Local Service Area Commissions/Committees:

- Galiano Island Parks & Recreation Commission
- Lyall Harbour/Boot Cove Water Local Services Committee
- Magic Lake Estates Water & Sewer Committee
- Mayne Island Parks & Recreation Commission
- North Galiano Fire Protection & Emergency Response Service Commission
- Pender Island Community Parks & Recreation Commission
- Saturna Islands s Parks & Recreation Commission
- Skana Water Service Committee
- Southern Gulf Islands Community Economic Sustainability Commission
- Southern Gulf Islands Electoral Area Emergency Advisory Commission
- Southern Gulf Islands Harbour s Commission
- Southern Gulf Islands Public Library Commission
- Sticks Allison Water Local Service Committee
- Surfside Park Estates Water Service Committee

# Terms of Reference

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## **ENVIRONMENTAL SERVICES COMMITTEE**

### **PREAMBLE**

The Capital Regional District (CRD) Environmental Services Committee is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding waste management, resource recovery, climate change and other environmental matters.

The Committee's official name is to be:

Environmental Services Committee

### **1.0 PURPOSE**

- a) The mandate of the Committee includes overseeing and making recommendations to the Board regarding the following functions:
  - i. Regional solid waste function
  - ii. Environmental protection, monitoring and compliance
  - iii. Community climate action
  - iv. Resource recovery opportunities
- b) The Committee will also:
  - i. Serve as the Plan Monitoring Advisory Committee for the current Solid Waste Management Plan (SWMP)
  - ii. Stand as the steering committee for the revised SWMP
- c) The following committees will report through the Environmental Services Committee:
  - i. Climate Action Inter-Municipal Task Force
  - ii. Solid Waste Advisory Committee (SWAC)

### **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Board for consideration; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

### **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members;
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

### **4.0 PROCEDURES**

- a) The Committee shall meet on a monthly basis, except August and December, and have special meetings, as required
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

### **5.0 RESOURCES AND SUPPORT**

- a) The General Manager of Parks & Environmental Services will act as liaison to the Committee; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*



# Terms of Reference



## **FINANCE COMMITTEE**

### **PREAMBLE**

The Capital Regional District (CRD) Finance Committee is a standing committee established by the CRD Board to make recommendations to the Board regarding items related financial policy, administration, and reporting. The Committee will also provide advice to the Board on agenda items for Committee of the Whole meetings.

The Committee's official name is to be:

Finance Committee

### **1.0 PURPOSE**

- a) To provide advice or make recommendations, or both, to the Board regarding the following functions:
  - i. Corporate budget process
  - ii. Financial monitoring, reporting and forecasting
  - iii. Corporate financial management (including policies) and audit compliance
  - iv. Grants reporting and policies
  - v. Financial impacts related to strategic Board priorities and initiatives
- b) The Committee will provide recommendations to the Board that aim to increase the transparency of the organization and the visibility of financial reporting efforts.
- c) The following committee will report through the Finance Committee
  - Royal & McPherson Theatres Services Advisory Committee

### **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Board for consideration; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

### **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members;
- b) All Board members are permitted to participate in standing committee meetings, but not to vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

#### **4.0 PROCEDURES**

- a) The Committee shall meet on a bi-monthly basis, on odd number months, and have special meetings as required;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may request that a matter be placed on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

#### **5.0 RESOURCES AND SUPPORT**

- a) The Chief Financial Officer will act as liaison to the committee; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*

# Terms of Reference

The logo for the Capital Regional District (CRD), consisting of the letters 'CRD' in a stylized, bold font.

## FIRST NATIONS RELATIONS COMMITTEE

### PREAMBLE

The Capital Regional District (CRD) spans the traditional territories of over 20 First Nations, of which 11 have Reserve lands and 9 of those are populated. The First Nations Relations Committee is a standing committee established by the CRD Board to provide support to the Board in building strong government-to-government relationships with First Nations, and to provide advice and direction to the Board on matters that directly or indirectly affect those relationships.

The Committee's official name is to be:

First Nations Relations Standing Committee

### 1.0 PURPOSE

- a) The mandate of the Committee includes providing advice and making recommendations to the Board regarding the following functions relating to First Nation governments:
  - i. Advise on programs and activities that strengthen relationships between the CRD and First Nations within the region;
  - ii. Understand and provide advice to the Board on the implications of the BC Treaty process where it intersects with local government interests;
  - iii. Provide guidance on the coordination of regional events such as a Forum of all Councils;
  - iv. Make recommendations to the Board on the initiatives identified in the First Nations Task Force Final Report; and
  - v. Review progress on Reconciliation with First Nations and make recommendations to support continued efforts.

### 2.0 ESTABLISHMENT AND AUTHORITY

- a) The Committee will make recommendations to the Board; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

### **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members;
- b) All Board members are permitted to participate in standing committee meetings, but not to vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

### **4.0 PROCEDURES**

- a) The Committee shall meet quarterly and hold special meetings as required;
- b) The agenda shall be finalized in consultation between staff and the Committee Chair and any Committee member may request that a matter be placed on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for considerations;
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business; and
- e) The above procedures may be relaxed or suspended by majority vote of the Committee in order to facilitate unstructured discussions and consensus-based outcomes.

### **5.0 RESOURCES AND SUPPORT**

- a) The General Manager of Corporate Services with support from the Manager of First Nations Relations will provide strategic support and act as liaison to the committee; and,
- b) Minutes and agendas are prepared and distributed by Corporate Services.

*Approved by CRD Board*

# Terms of Reference

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## **GOVERNANCE COMMITTEE**

### **PREAMBLE**

The Capital Regional District (CRD) Governance Committee is a standing committee established by the CRD Board to make recommendations to the Board regarding items related to governance and corporate administration. The Committee will also provide advice to the Board on agenda items for Committee of the Whole meetings.

The Committee's official name is to be:

Governance Committee

### **1.0 PURPOSE**

- (a) To consider matters and make recommendations to the Board or to the Committee of the Whole regarding the following functions:
  - i. Board, committee and commission governance and meeting procedures;
  - ii. General governance issues such as communication, access and accountability processes;
  - iii. Corporate administration and operations such as but not limited to:
    - Labour Relations and Human Resource Matters
    - Internal and external communications systems
    - Intergovernmental relations
  - iv. Legal and Risk Management;
  - v. Identification of items of regional interest and/or items that are relevant to more than one standing committee that are better suited for consideration at a Committee of the Whole meeting;
- (b) The Committee may also make recommendations to the Board to advocate to provincial and federal governments on matters effecting the Regional District.
- (c) The Committee may establish an Appointment Advisory Committee, on an as-and-when needed basis, responsible for reviewing applications and making recommendation for appointments to external boards.
  - i. The Appointment Advisory Committee is permitted to meet in closed when evaluating public member applications.

## **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Capital Regional District Board for consideration; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

## **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members;
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

## **4.0 PROCEDURES**

- a) The Committee shall meet every second month on even months, or at the call of the Committee Chair;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration;
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business

## **5.0 RESOURCES AND SUPPORT**

- a) The General Manager, Corporate Services will act as liaison to the Committee;
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department; and
- c) The Executive Services Department will provide additional Committee support as required.

*Approved by CRD Board*

# Terms of Reference

The logo for the Capital Regional District (CRD), consisting of the letters 'CRD' in a stylized, bold font.

## HOSPITALS AND HOUSING COMMITTEE

### PREAMBLE

The Capital Regional District (CRD) Hospitals and Housing Committee is a Standing Committee established by the CRD Board and will oversee and make recommendations to the CRD, Capital Regional Hospital District (CRHD) and Capital Region Housing Corporation (CRHC) boards on matters relating to hospitals and housing, and community health.

The Committee's official name is to be:

Hospitals and Housing Committee

### 1.0 PURPOSE

- a) The mandate of the Committee includes providing advice or making recommendations, or both, to the CRD, CRHD, and CRHC Boards regarding the following region-wide functions:
  - i. Land Banking and Housing
  - ii. CRHC
  - iii. CRHD
  - iv. Community health planning, regulations and enforcement
  - v. Implementation of various housing affordability models, the potential formation of strategic partnerships and the creation of alternative corporate entities
  - vi. Options for the procurement of health care facilities and housing developments and
  - vii. Real estate matters relating to health care facilities and housing
  
- b) The following committees will report through the Hospitals and Housing Committee:
  - i. Regional Housing Advisory Committee
  - ii. Tenant Advisory Committee
  - iii. Any other advisory body established by the Committee.

## **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the CRD Board, the CRHD Board, and the CRHC Board, as applicable, for consideration; and
- b) The CRD Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

## **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members and should include the Chair of the CRHC and the Chair of the CRHD Board.
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

## **4.0 PROCEDURES**

- a) The Committee shall meet on a monthly basis, except August, and have special meetings as required;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the CRD Board Chair (or CRHC Board Chair, or CRHD Board Chair, as applicable), Committee matters of an urgent or time sensitive nature may be forwarded directly to the appropriate Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

## **5.0 RESOURCES AND SUPPORT**

- a) The General Manager of Planning and Protective Services will act as liaison to the Committee;
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*



# Terms of Reference



## **PLANNING AND PROTECTIVE SERVICES COMMITTEE**

### **PREAMBLE**

The Capital Regional District (CRD) Planning and Protective Services Committee is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding matters related to planning, protective services, and emergency management matters.

The Committee's official name is to be:

Planning and Protective Services Committee

### **1.0 PURPOSE**

- a) The mandate of the Committee includes overseeing, providing advice and/or making recommendations to the Board regarding the following functions:
  - i. Regional Growth Strategy
  - ii. Protective services – including 911, fire dispatch and hazmat
  - iii. Emergency Preparedness
  
- b) The following committees will report through the Planning and Protective Services Committee:
  - i. Development & Planning Advisory Committee
  - ii. Local Government Emergency Program Advisory Commission
  - iii. Regional Emergency Program Advisory Commission
  - iv. Regional Food and Agriculture Task Force
  - v. Any other advisory body established by the Committee

### **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Board for consideration; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

### **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members;
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and

- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

#### **4.0 PROCEDURES**

- a) The Committee shall meet on a bi-monthly basis, except August and December, and have special meetings as required;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

#### **5.0 RESOURCES AND SUPPORT**

- a) The General Manager of the Planning and Protective Services Department will act as a liaison to the committee; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*

# Terms of Reference

The logo for the Capital Regional District (CRD), consisting of the letters 'CRD' in a bold, sans-serif font, positioned on a dark, wavy background that tapers to the right.

## REGIONAL PARKS COMMITTEE

### PREAMBLE

The Capital Regional District (CRD) Regional Parks Committee is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding regional parks.

The Committee's official name is to be:

Regional Parks Committee

### 1.0 PURPOSE

- a) The mandate of the Committee includes overseeing and making recommendations to the Board regarding the following functions:
  - i. Regional parks, including land acquisition, management, operations and programs
  - ii. Regional Parks Strategic Plan, Land Acquisition Strategy

### 2.0 ESTABLISHMENT AND AUTHORITY

- a) The Committee will make recommendations to the Board for consideration; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

### 3.0 COMPOSITION

- a) Committee members will be appointed CRD Board Members;
- b) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and
- c) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

#### **4.0 PROCEDURES**

- a) The Committee shall meet on a monthly basis, except August and December, and have special meetings, as required;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

#### **5.0 RESOURCES AND SUPPORT**

- a) The General Manager of Parks & Environmental Services will act as liaison to the committee; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board*

# Terms of Reference



## TRANSPORTATION COMMITTEE

### PREAMBLE

The Capital Regional District (CRD) Transportation Committee is a standing committee established by the CRD Board and will oversee and make recommendations to the Board regarding matters related to regional transportation including the establishment of a transportation service for the region.

The Committee's official name is to be:

Transportation Committee

### 1.0 PURPOSE

- a) The mandate of the Committee includes overseeing, providing advice and/or making recommendations to the Board regarding the following functions:
  - i. Regional transportation matters including regional transportation priorities and regional transportation governance
  - ii. Encouraging a strong regional voice on regional transportation matters including ferries, rail, transit, ~~and~~ multi-use regional trails, ~~and~~ roads
  - iii. Regional Trails matters (mobility and recreation), including land acquisition, policy, management, operations and programs for the Galloping Goose, the Lochside and the E&N trails
  - iv. Providing input to the Regional Parks Strategic Plan
- b) The Committee may also make recommendations to the Board to:
  - i. Advocate to senior levels of government to support major multi-modal transportation projects which support the region's sustainability measures; and
  - ii. Advocate for regional transit priorities to the Victoria Regional Transit Commission.
  - iii. Work with other Vancouver Island Regional Districts to support major multi-modal transportation which support transportation and the flow of goods on Vancouver Island.
- c) The following committees will report through the Transportation Committee:
  - i. Traffic Safety Commission
  - ~~ii.~~ Transportation Working Group
  - ~~iii.~~ Any other advisory body established by the Committee

## **2.0 ESTABLISHMENT AND AUTHORITY**

- a) The Committee will make recommendations to the Board for consideration; and
- b) The Board Chair will appoint the Committee Chair, Vice Chair and Committee members annually.

## **3.0 COMPOSITION**

- a) Committee members will be appointed CRD Board Members;
- b) At least one member of the committee should be a liaison member of the Regional Parks Committee, the Environmental Services Committee and the Planning and Protective Services Committee.
- c) All Board members are permitted to participate in standing committee meetings, but not vote, in accordance with the CRD Board Procedures Bylaw; and
- d) First Nation members are permitted to participate in standing committee meetings at their pleasure, in accordance with the CRD Procedures Bylaw, where the Nation has an interest in matters being considered by the committee.

## **4.0 PROCEDURES**

- a) The Committee shall meet on a bi-monthly basis, except August and December, and have special meetings as required;
- b) The agenda will be finalized in consultation between staff and the Committee Chair and any Committee member may make a request to the Chair to place a matter on the agenda through the Notice of Motion process;
- c) With the approval of the Committee Chair and the Board Chair, Committee matters of an urgent or time sensitive nature may be forwarded directly to the Board for consideration; and
- d) A quorum is a majority of the Committee membership and is required to conduct Committee business.

## **5.0 RESOURCES AND SUPPORT**

- a) The General Manager of the Planning and Protective Services Department will act as liaison to the committee; and
- b) Minutes and agendas are prepared and distributed by the Corporate Services Department.

*Approved by CRD Board ~~March 9, 2022~~*



Making a difference...together

**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**      **ARCHIE GALBRAITH MEMORIAL SCHOLARSHIP 2022**

**ISSUE SUMMARY**

The recipient of the 2022 Archie Galbraith Memorial Scholarship (the scholarship) has been selected.

**BACKGROUND**

In July 1973, the Capital Regional District (CRD) Board established a scholarship to enable a student to attend Lester B. Pearson College.

Archie Galbraith was the Mayor of Central Saanich and Deputy Chair of the CRD Board. Archie Galbraith died while in office, and the scholarship has been given in his honour since 1974. The scholarship is \$13,200 and is awarded annually by the college faculty to a student from the capital region or, if that is not possible, to a Canadian recipient.

Sofia Auger Nybida is the scholarship recipient this year and her student profile is attached as Appendix A.

**RECOMMENDATION**

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

Submitted by:	Carolyn Jenkinson, Manager, Executive Administration
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENT**

Appendix A: Sofia Auger Nybida Student Profile



**SOFIA AUGER NYBIDA**  
(Year 49/2024, Canada –  
B.C.)  
**Student Profile**

**Sofia Auger Nybida** is a Canadian student from the small coastal town of Squirrel Cove on Cortes Island in British Columbia. She lived ‘off grid’ for the first part of her life. Sofia is in her first year at Pearson College UWC. Along with English, Sofia speaks Spanish and Anishnaabemowin, the traditional Indigenous Anishinaabe language. Sofia is known for being both academically and artistically talented. She has been an energetic and friendly addition to campus.

### **Q&A with Sofia:**

#### ***What is your favourite subject at Pearson?***

My favourite subject is philosophy, I love the discussions we have in class and the way you try to understand someone's idea of the world and interpret it in your own context, especially since I am now sharing a room with a classmates from Germany, Hong Kong, and the United Kingdom.

#### ***What activities are you involved in this year?***

This year I'm involved in astronomy and a sustainability activity (PAW). PAW has the goal of creating connections with local farms and implementing what we learn into more sustainable wildlife and agricultural practices on campus. I decided to give astronomy a shot and I enjoy it so much! I camped at the Pearson observatory and then visited the local middle school and gave them a presentation on what I learned. I went to the center of the universe in Victoria and saw the huge telescope and learned about a huge 30-meter mirror telescope that is currently being built in Hawaii. I also went to UVIC and talked to an astrophysicist and used their telescope to look at the sun.

#### ***Have you thought about what you'd like to do for your summer service project?***

I am considering signing up for a volunteer trip to Kenya organized through the KULE Foundation. KULE is a non-profit that sends volunteers into rural communities in Kenya and Uganda to help work on projects that are important to the villagers. It is a very real way to help people, and this year they will be supporting women and children that are homeless.

#### ***Although it's only your first year, what would you like to do after Pearson?***

After Pearson, I would like to get a counseling or social work degree and help children. I also would like to go to an art school.

**ABOUT PEARSON COLLEGE UWC:** Pearson College UWC is a two-year, pre-university school for 200 students from more than 80 countries who live, study and learn together pursuing the International Baccalaureate within an experiential education approach. At least 75% of Pearson College students are on full or partial scholarship in any given year. More than 4,300 students have graduated from Pearson College UWC and, as alumni, are continuing to live the UWC mission by working as leaders and agents of change in communities and organizations around the world.



# 2023 Appointments

## Board and Committee Membership

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### Capital Regional District | 2023

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#### Capital Regional District Board

Chair: Director Plant

Vice-Chair: Director Tait

#### Capital Regional Hospital District Board

Chair: Director Murdoch

Acting Chair: Director McNeil-Smith

#### Capital Region Housing Corporation Board

Chair: Director de Vries

Vice-Chair: Director Tait

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### Standing Committees

#### Core Area Liquid Waste Management

*Membership consists of all 15 Board members from the seven municipal participants in the Core Area Liquid Waste Management Plan.*

Chair: Director Coleman

Director Alto

Director Brice

Director Brownoff

Director Caradonna

Director de Vries

Director Desjardins

Director Goodmanson

Vice Chair: Director Kobayashi

Director K. Murdoch

Director D. Murdock

Director Plant

Director Szpak

Director Thompson

Director Tobias

#### Electoral Areas Committee

*Membership consists of all 3 Electoral Area Directors.*

Chair: Director Brent

Vice-Chair: Director Holman

Director Wickheim

Board Chair (ex-officio)

#### Environmental Services Committee

Chair: Director Desjardins

3. Director Brownoff

4. Director Caradonna

5. Director Holman

6. Director Kobayashi

7. Director Murdock

Vice-Chair: Director Tobias

8. Director Tait

9. Director Thompson

10. Director Wickheim

Board Chair (ex-officio)

# 2023 Appointments

## Board and Committee Membership

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### Capital Regional District | 2023

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#### Finance Committee

Chair: Director Brice

3. Director Brent
4. Director Coleman
5. Director Goodmanson
6. Director Kobayashi

Vice-Chair: Director Jones

7. Director Little
  8. Director Williams
  9. Director Windsor
- Board Chair (ex-officio)

#### First Nations Relations Committee

Chair: Director Tait

3. Director Alto
4. Director Brent
5. Director Desjardins
6. Director Goodmanson

Vice-Chair: Director Windsor

7. Director Little
  8. Director K. Murdoch
  9. Director Williams
- Board Chair (ex-officio)

#### Governance Committee

Chair: Director Little

3. Director Brice
4. Director Coleman
5. Director Desjardins
6. Director Holman
7. Director Jones

Vice-Chair: Director Goodmanson

8. Director K. Murdoch
  9. Director D. Murdock
  10. Director Tobias
- Board Chair (ex-officio)

#### Hospitals and Housing Committee

Chair: Director Murdoch

3. Director Alto
4. Director Brent
5. Director Brice
6. Director de Vries
7. Director Holman

Vice-Chair: Director Caradonna

8. Director Jones
  9. Director Kobayashi
  10. Director McNeil-Smith
  11. Director Szpak
- Board Chair (ex-officio)

#### Planning & Protective Services

Chair: Director de Vries

3. Director Desjardins
4. Director Little
5. Director McNeil-Smith
6. Director Thompson

Vice-Chair: Director Williams

7. Director Wickheim
  8. Director Windsor
- Board Chair (ex-officio)

# 2023 Appointments

## Board and Committee Membership

### Capital Regional District | 2023

#### Regional Parks Committee

Chair: Director McNeil-Smith

Vice-Chair: Director Brownoff

3. Director Coleman
4. Director Goodmanson
5. Director Holman
6. Director Szpak
7. Director Tait

8. Director Tobias
  9. Director Williams
  10. Director Windsor
- Board Chair (ex-officio)

#### Transportation Committee

Chair: Director Murdock

Vice-Chair: Director Szpak

3. Director Brent
4. Director Brice
5. Director Caradonna
6. Director de Vries
7. Director Desjardins
8. Director Goodmanson

9. Director Kobayashi
  10. Director McNeil-Smith
  11. Director Tait
  12. Director Thompson
- Board Chair (ex-officio)

## Select & Sub-Committees

#### Royal and McPherson Theatres Services Advisory Committee

*(reporting to the Finance Committee). Term is for two years.*

Participant	Board Member
Saanich	Colin Plant
	Susan Brice
Victoria	Jeremy Caradonna
	TBC
Oak Bay	Kevin Murdoch

#### Solid Waste Advisory Committee

*(reporting to the Environmental Services Committee).*

Chair: Director Desjardins	Vice-Chair: Elected from amongst the membership
	Board Chair (ex-officio)

# 2023 Appointments

## Board and Committee Membership

Capital Regional District | 2023

## Other CRD Committees & Commissions

### Arts Commission

*Members from each of the participants. Term is four years for Directors, two years for Non-Directors.*

Participant	Representative	Alternate
Esquimalt	Duncan Cavens	Andrea Boardman
Highlands	Karel Roessingh	None
Metchosin	Sharie Epp	None
Oak Bay	Carrie Smart	Cairine Green
Saanich	Colin Plant	Nathalie Chambers
Sooke	Dana Lajeunesse	Jeff Bateman
Southern Gulf Islands	Paul Brent	None
Victoria	Marianne Alto (Chair)	None
View Royal	Gery Lemon	None

### Climate Action Inter-Municipal Task Force

*Task Force consists of one elected representative of each municipality and the three electoral areas. Term is for four years unless otherwise noted.*

Local Government	Representative	Alternate
Central Saanich	None	None
Colwood	David Grove	Cynthia Day
Esquimalt	Duncan Cavens	None
Highlands	Ann Baird	None
Langford	Mary Wagner	None
Metchosin	Steve Gray	None
North Saanich	Peter Jones	All Councillors
Oak Bay	Carrie Smart	Lesley Watson
Saanich	Judy Brownoff	None
Sidney	Steve Duck	Sara Duncan
Sooke	Tony St-Pierre	None
Victoria	Marg Gardiner	None
View Royal	Alison MacKenzie	Gery Lemon
Salt Spring Island	Gary Holman	None
Southern Gulf Islands	Paul Brent	None
Juan de Fuca	Al Wickheim	None

# 2023 Appointments

## Board and Committee Membership

### Capital Regional District | 2023

#### Emergency Management Committee

*Board appointment of the 3 EA Directors, ELT & Senior Manager, Protective Services. Term is for four years.*

Electoral Areas	Representative	ELT + Management		
Juan de Fuca	Al Wickheim	Ted Robbins	Larisa Hutcheson	Shawn Carby
Southern Gulf Islands	Paul Brent	Kevin Lorette	Ian Jesney (Interim)	
Salt Spring Island	Gary Holman	Nelson Chan	Kristen Morley	

#### Juan de Fuca Water Distribution Commission

*Members from each of the participants. Appointed by each of the member councils. Term is for four years.*

Participant	Commissioner	Alternate
Colwood	David Grove	Misty Olsen
Highlands	Gord Baird	Karel Roessingh
Juan de Fuca EA	Al Wickheim	Jeri Grant
Langford	Colby Harder	Keith Yacucha, Mark Morley
Langford	Mary Wagner	Keith Yacucha, Mark Morley
Metchosin	Shelly Donaldson	Steve Gray
Sooke	Kevin Pearson	Dana Lajeunesse
View Royal	John Rogers	Ron Mattson

#### Peninsula Recreation Commission

*Appointed by member Councils. Term is for two years.*

Participants	Commissioner	Alternate
Central Saanich	Niall Paltiel	Gord Newton
Central Saanich	Ryan Windsor	Sarah Riddell
North Saanich	Phil DiBattista	Brett Smyth
North Saanich	Peter Jones	Celia Stock
Sidney	Scott Garnett	Steve Duck
Sidney	Cliff McNeil-Smith	Chad Rintoul

# 2023 Appointments

## Board and Committee Membership

### Capital Regional District | 2023

#### Regional Housing Trust Fund Commission

*One Council member is appointed by each participating municipality. Appointments come forward to the Board Chair from the Senior Manager, Regional Housing and are included with appointments made by Board Chair. The Salt Spring Island and Southern Gulf Islands Electoral Area Directors are also members. Term is for two years.*

Participant	Commissioner	Alternate
Central Saanich	Bob Thompson	Sarah Riddell
Esquimalt	Ken Armour	None
Highlands	Ann Baird	None
Metchosin	Shelly Donaldson	None
North Saanich	Celia Stock	Irene McConkey
Oak Bay	Lesley Watson	Carrie Smart
Saanich	Zac de Vries	None
Salt Spring Island	Gary Holman	None
Sidney	Richard Novek	Terri O'Keeffe
Sooke	Tony St. Pierre	None
Southern Gulf Islands	Paul Brent	None
Victoria	Krista Loughton	None
View Royal	Sid Tobias	None

#### Regional Water Supply Commission

*Members from each of the participants. Term is for four years.*

Participant	Commissioner	Alternate
Central Saanich	Chris Graham	Zeb King
Colwood	Kim Jordison	Misty Olsen
Esquimalt	Tim Morrison	Duncan Cavens
Highlands	Gord Baird	Karel Roessingh
Juan de Fuca EA	Al Wickheim	Jeri Grant
Langford	Mary Wagner	Colby Harder, Keith Yacucha
	Kimberly Guiry	Colby Harder, Keith Yacucha
Metchosin	Steve Gray	Shelly Donaldson
North Saanich	Celia Stock	Irene McConkey
Oak Bay	Cairine Green	Esther Paterson
Saanich	Karen Harper	Susan Brice, Judy Brownoff, Colin Plant
	Zac de Vries	Judy Brownoff, Colin Plant, Susan Brice
	Nathalie Chambers	Colin Plant, Susan Brice, Judy Brownoff
	Mena Westhaver	Susan Brice, Judy Brownoff, Colin Plant
	Teale Phelps Bondaroff	None
Sidney	Sara Duncan	Steve Duck

# 2023 Appointments

## Board and Committee Membership

### Capital Regional District | 2023

Sooke	Dana Lajeunesse	Kevin Pearson
Victoria	Chris Coleman	TBC
	Stephen Hammond	TBC
	Susan Kim	TBC
	Krista Loughton	TBC
View Royal	John Rogers	Ron Mattson

*\*Assignment of one additional vote*

### Saanich Peninsula Wastewater Commission

*Members from each of the participants. Appointed by each of the member councils. Term is for two years.*

Participant	Commissioner	Alternate
Central Saanich	Zeb King	Chris Graham
Central Saanich	Ryan Windsor	Sarah Riddell
North Saanich	Peter Jones	Celia Stock
North Saanich	Sanjiv Shrivastava	Brett Smyth
Sidney	Cliff McNeil-Smith	Chad Rintoul
Sidney	Sara Duncan	Steve Duck

### Saanich Peninsula Water Commission

*Members from each of the participants. Appointed by each of the member councils. Term is for one year, except CRD Directors term being four years.*

Participant	Commissioner	Alternate
Central Saanich	Zeb King	Chris Graham
Central Saanich	Ryan Windsor	Sarah Riddell
North Saanich	Peter Jones	Celia Stock
North Saanich	Sanjiv Shrivastava	Brett Smyth
Sidney	Cliff McNeil-Smith	Chad Rintoul
Sidney	Sara Duncan	Steve Duck

### Traffic Safety Commission

*Board appoints one Director as a Representative, and one Director as an Alternate. Term is for two years.*

Representative	Alternate
Director D. Murdock	Director de Vries

# 2023 Appointments

## Board and Committee Membership

Capital Regional District | 2023

## Appointments to External Boards

### CREST (Capital Region Emergency Service Telecommunications)

The CRD appoints the 3 Directors representing the Electoral Areas for shareholder votes (proxies are appointed on an annual basis).

Appointed CRD Shareholder	Proxy
Al Wickheim	Jeri Grant
Gary Holman	John Wakefield
Paul Brent	

### Greater Victoria Coalition to End Homelessness

For the Society Board, 3 Directors from the CRD who are also Mayors representing municipalities in the Core, Peninsula, and Westshore, with one to be nominated as the CRD Co-Chair on the Board. Corporate representation will include up to 4 others including staff. Term is for two years.

Appointed Directors:	Corporate Member Representative:
Director McNeil-Smith	Kevin Lorette, GM, Planning & Protective Services
Director K. Murdoch	Don Elliott, Senior Manager, Regional Housing
Director Tait	Melanie Hope, Manager, Housing Initiatives & Programs

### Greater Victoria Harbour Authority Board

Board Chair nominates one Director of CRD Board to be nominated as GVHA Director. Board to also appoint Member representative annually.

Member Representative	Member Representative Alternate	Board Nominee

### Community Liaison Committee - Greater Victoria Harbour Authority

GVHA Member Representative to be appointed.

Member Representative	Member Representative - Alternate

### Greater Victoria Labour Relations Association

Annually the Board appoints one Director as its representative and one Director as alternate.

Representative & AGM Delegate	Alternate
Director Coleman	Director Goodmanson

### ICET - Central South Island Regional Advisory Committee

Annually the Board appoints either the CRD Board Chair or Juan de Fuca Electoral Area Director as representative.

Member Representative
Director Brent



# 2023 Appointments

## Board and Committee Membership

### Capital Regional District | 2023

#### Island Corridor Foundation

Board appoints one Director as Local Government Designated Representative annually. Board nominates one Director for election to the Foundation Board (could be the same person as the Member Representative) at its AGM, held in April, for a two-year term.

Member Representative	Nominee
Barb Desjardins	

#### Municipal Finance Authority

Board appoints two Directors as representatives and two Directors as alternates. Term is for one year.

Director	Alternate
Director Brent	
Director Kobayashi	

#### Regional Representative to the Te'mexw Treaty Advisory Committee

Annual appointment.

Representative	Alternate

#### Royal and McPherson Theatres Society Board

Appointed by member Councils. Term is for one year.

Participants	Board Member	Alternate
Oak Bay	Hazel Braithwaite	Andrew Appleton
Saanich	Teale Phelps Bondaroff	None
Victoria	Matt Dell	None

#### Sooke and Electoral Area Parks and Recreation Commission

Appointed by member Councils. Term is for one year.

Participants	Commissioner	Alternate
Juan de Fuca	Al Wickheim	Jeri Grant
Sooke	Maja Tait	Jeff Bateman
Sooke	Al Beddows	Kevin Pearson

# 2023 Appointments

## Board and Committee Membership

### Capital Regional District | 2023

#### Victoria Family Court and Youth Justice Committee

*Members from each of the participants. Term is two years.*

Participant	Member
Central Saanich	Zeb King
Colwood	Cynthia Day
Esquimalt	Darlene Rotchford
Highlands	Marcie McLean
Langford	Kimberley Guiry
Metchosin	Marie-Térèse Little
North Saanich	Jack McClintock
Oak Bay	Esther Paterson
Saanich	Mena Westhaver
Sidney	Terri O'Keeffe
Sooke	Jeff Bateman
Victoria	Krista Loughton
View Royal	Ron Mattson

#### Vancouver Island Regional Library Board

*Board appoints. Only Juan de Fuca Area participates in this service function. Term is for one year.*

Representative	Alternate
Al Wickheim	Jeri Grant



**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**     **McLoughlin Point Wastewater Treatment Plant - Performance Period Closeout Update**

**ISSUE SUMMARY**

To provide the Capital Regional District (CRD) Board with an update on the McLoughlin Point Wastewater Treatment Plant – Performance Period Closeout.

**BACKGROUND**

At its October 12, 2022 meeting, the Core Area Liquid Waste Management Committee (Committee) received the McLoughlin Point Wastewater Treatment Plant (WWTP) – Performance Period Closeout report (attached – Appendix A) for information and passed the following motion:

*That the Committee request that staff return with a report, prior to signing off, that outlines the work and the commitments that will be done to alleviate odour issues at this plant, and that the zoning odour standards are met as per the expectations, and that the other expectations of the Township of Esquimalt letter are addressed.*

**McLoughlin Point WWTP Completion Holdback and Performance Incentive**

As outlined in the October 12 staff report there is \$5,000,000 to be released as a Completion Holdback less an amount of 200% of outstanding deficiencies. Stantec Consulting Ltd., the CRD's owners' representatives on the project, have prepared a letter (attached – Appendix B) recommending that the CRD release project completion funds, less any negotiated and agreed upon holdback amounts, as they deem that the physical aspects of the facility are complete and have met the requirements of the Project Agreement between the CRD and Harbour Resource Partners (HRP). Stantec also listed 15 deficiencies as outstanding as of the date of their letter and all but four of these are expected to be resolved by the end of 2022. The remaining four deficiencies are valued at \$70,000 and in accordance with the Project Agreement, 200% of that amount, or \$140,000 will be withheld from final monthly payments until their resolution. Also in support of releasing the Completion Holdback, third party compliance documentation is attached. (Appendix C)

The October 12 staff report also discussed the release of up to \$1,000,000 as an incentive payment. With \$500,000 to be released following the Performance Period, subject to continuously achieving compliance with all the Process Performance Guarantees throughout the Performance Period, plus an amount up to \$500,000 subject to operations and maintenance cost performance, quality of service provided by HRP during the Performance Period, and extent of warranty work performed during the Performance Period. As there have been some issues related to consistent effluent quality and odour control, the CRD is proposing a performance incentive payment of \$800,000 be released. These releases/payments will be issued in January 2023.

### **Odour Issues**

While the treatment plant has been certified compliant by third party documentation, there still remains occasional odour issues. In addition to further odour investigations and increased odour monitoring and analysis efforts, initial thoughts to remediating these issues are currently focused on optimization of the odour control systems and developing improved operational processes to deal with odour releases when maintenance activities require unsealing the plant. The action plan is attached – Appendix D.

Specific activities that have been initiated since the October 12 staff report include the following:

- Summarize and analyze odour complaints for the past two years. (Complete)
- Field investigation and odour systems review including initial additional sampling to confirm performance of the odour systems. (Ongoing with all tasks to be complete by January 31, 2023)
- Initiate and continue operational process changes. (Ongoing)
- Further to initial field investigation and odour system review, recommend process optimizations to be implemented. (Ongoing and dependant on level of optimization required continuing into the second quarter of 2023 and beyond if necessary)
- Ongoing monitoring and analysis of odours at the fence line and beyond. (This is ongoing but will involve the use of more sophisticated technology to analyze the types of odours being generated in and around the plant and will last into the second quarter of 2023 prior to reporting out)

The CRD remains committed to achieving the performance criteria set out for the McLoughlin Point WWTP and assisting the other municipalities in determining other potential sources and infrastructure issues. If, through the work outlined above it is determined that the odour control systems at the WWTP require modification, approximately \$6.3 million in remaining unallocated Core Area Wastewater Treatment Program budget will be available at project closeout to fund the work. Otherwise, the remaining unallocated budget will be transferred to the Core Area capital reserves as noted in the October 12, 2022 report to the Committee.

### **Township of Esquimalt Letter – McLoughlin Point WWTP Outstanding Matters**

The CRD received a letter from the Township of Esquimalt on September 29, 2022 that requested information relating to McLoughlin Point WWTP outstanding matters. The letter and the CRD's response is attached – Appendix E.

### **CONCLUSION**

At its October meeting the Core Area Liquid Waste Management Committee directed staff to prepare a report regarding Performance Period Closeout at the McLoughlin Point Wastewater Treatment Plant and address an action plan on dealing with odour issues and concerns from the Township of Esquimalt. Performance Period Closeout issues have been addressed and supporting documentation provided. An odour investigation plan has been developed and is being implemented which is intended to determine odour sources and remedies.

**RECOMMENDATION**

There is no recommendation, the report is for information only.

Submitted by:	Ian Jesney, P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Steve Carey, B. Sc., J.D., Senior Manager, Legal Services & Risk Management
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENTS**

- Appendix A: October 12, 2022 – Core Area Liquid Waste Management Committee Staff Report
- Appendix B: Stantec Consulting Ltd.- McLoughlin Point WWTP Project Completion Letter
- Appendix C: Compliance and Acceptance Reports
- Appendix D: Odour investigation action plan
- Appendix E: CRD Response to Township of Esquimalt

**REPORT TO CORE AREA LIQUID WASTE MANAGEMENT COMMITTEE  
MEETING OF WEDNESDAY, OCTOBER 12, 2022**

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**SUBJECT**     **McLoughlin Point Wastewater Treatment Plant – Performance Period Closeout**

**ISSUE SUMMARY**

The McLoughlin Point Wastewater Treatment Plant (MPWWTP) performance period will end on January 13, 2023 and under the terms and conditions of the MPWWTP Project Agreement, staff are preparing to closeout the Performance Period and issue final associated payments and holdbacks.

**BACKGROUND**

On January 13, 2021, the Capital Regional District (CRD) accepted operational responsibility for the McLoughlin Point Wastewater Treatment Plant (MPWWTP). The commissioning period of the MPWWTP has continued to extend into the two-year performance period for the MPWWTP. As previously reported, during this time, the commissioning activities at the MPWWTP have periodically impacted plant performance and effluent quality, and some plant systems, including odour management. Staff remain confident that the issues identified through the commissioning and performance period will be addressed and that the MPWWTP will achieve performance expectations. Based on the status of the project, operational performance, and terms and conditions of the MPWWTP Project Agreement, staff are preparing to closeout the Performance Period by January 13, 2023.

**MPWWTP Acceptance and Performance Testing**

As previously reported, Harbour Resource Partners Limited Partnership (HRP) has demonstrated through acceptance testing and independent certification, that the MPWWTP has achieved compliance with the Project Agreement standards with regards to process equipment, mechanical systems and control systems. Subsequent to the formal MPWWTP acceptance, which occurred in October 2021, the MPWWTP achieved the following acceptance tests:

- Wet Weather Event Acceptance: Demonstrating plant performance when influent flow is in excess of 216 MLD for a minimum period (December 2020).
- Seasonal Odour Control Acceptance: Demonstrating odour control system performance during periods of water ambient air temperatures (July 2021) and cold ambient temperatures (January 2021).
- Energy Utilization Acceptance: Demonstrating energy utilization at MPWWTP does not exceed the guaranteed maximum energy utilization, adjusted for flow, loading and temperature conditions.

The two-year Performance Period commenced on January 12, 2021. During the Performance Period, and while the MPWWTP has been under CRD operation, HRP has been required to continuously monitor compliance with the Process Performance Guarantees which include:

- Effluent Guarantee: All effluent will meet the specified effluent quality requirements.
- Maximum Sludge Production Guarantee: Sludge production will not exceed the guaranteed maximum sludge production volume and will meet a primary and secondary sludge solids concentration of 1.5-2.5%.
- Odour Control Guarantee: Odour/hydrogen sulfide emissions will not exceed the specified odour emission limits. Odour complaints will result in an investigation to establish the nature of odour at the reported locations and/or the MPWWTP, which will include a determination of performance of the odour treatment system at the time of the complaint.
- Noise Guarantee: operating noise at the MPWWTP will not exceed the limitations on noise prescribed by Township of Esquimalt noise control bylaws.

### Effluent Quality

As reported in July, the MPWWTP is a complex plant that involves complex treatment processes. In most cases a single cause and effect reason is unidentifiable for each non-compliance result, but rather a number of often compounding factors. The critical issues contributing to plant performance and periodic reduced effluent quality are continually being investigated and operational adjustments are being implemented. Through continued treatment process optimization, utilizing process engineering consultants, HRP's performance management personnel, and CRD staff process engineering expertise, the CRD remains confident that the MPWWTP effluent quality criteria will be consistently met at the end of the Performance Period, subject to outcomes of planned optimization efforts over the next three months.

### Odour Control

The CRD continues to receive odour complaints, primarily from the West Bay (Township of Esquimalt) and Victoria West (City of Victoria) neighborhoods. CRD staff continue to respond to every complaint and are logging and mapping every complaint to try to correlate the occurrence with operational activities and other potential contributing factors. As reported in July, the CRD continues to take steps to improve the function of the odour treatment system and add equipment to further reduce potential odour causing emissions. As of September, the odour control system is fully functional and operating as per the design specifications during normal operating conditions. However, the CRD continues to monitor the odour control system performance and discharges, and is working directly with equipment suppliers to seek opportunities to further increase potential odour removal.

Due to the nature of the complaints (location, timing, wind direction, operational activities occurring), it is believed that there are other potential sources of odour that may be contributing to the impacts in the neighborhoods, so CRD staff have continued to work with the City of Victoria (COV) staff and HRP to identify other potential sources.

At the end of August, COV conducted smoke testing in the municipal storm drain and sewer collection systems in the Victoria West area. Smoke testing will identify where cross-connections between private property sewers and the municipal storm system exist, and/or where cross-connections between private property drains and the municipal sewer system exist. The testing revealed that there are 16 properties in this area that could have the home/building sewer connected to the COV storm drain system. This means that sewer/waste is likely being discharged from the homes into the municipal storm drain pipes that are 'dry' during the summer months – the waste would accumulate and likely cause significant odour. The 16 cross-connections are on

Hereward Road, Walker Street, Griffiths Street and McCaskill Street. To add to this, this storm drain system discharges through an outfall at Barnard Park into West Bay, which could be causing odour in the West Bay area. This was further confirmed through recent bacteriological testing, which indicated significantly elevated levels of wastewater contamination near the outfall. In addition, the CRD deployed hydrogen sulfide data loggers in two storm drain manholes on Hereward Road during September/October which did confirm elevated levels of hydrogen sulfide in the storm system which indicates wastewater exists in the storm drain system.

There is more investigation work planned, including smoke and dye testing and the CRD will be working with the COV to understand how they plan to address the cross-connections. This will potentially involve the COV working with each homeowner and will take some time. Township of Esquimalt staff will also be included in the on-going investigations due to the interconnectedness of the municipal infrastructure further upstream.

In addition to the above, the following actions related to odour control system improvements and investigations are planned prior to year end:

- Further odour survey work during specific times of day and by boat (between MPWWTP, West Bay and Work Point Marina).
- The MPWWTP odour treatment system was not designed to extract air from the tertiary treatment process tanks. The secondary odour treatment system will be modified to treat this potential source of odour laden air. The system is expected to be operational by November now.
- The CRD will be undertaking an 'audit' of the design and performance of the MPWWTP odour treatment system with the owner's engineer (Stantec). This work will begin in October.
- The CRD has undertaken some initial odour investigation work with Vancouver Island University (VIU), who has done similar work with the Regional District of Nanaimo. With VIU, the CRD is hoping to 'fingerprint' the chemical odour profiles from different sources and associate these profiles with odour present in different locations. This work is expected to occur this Fall.

The CRD acknowledges that the resolution to the odour concerns is taking some time, but the CRD remains committed to achieving the performance criteria set out for the MPWWTP, and assisting the other municipalities in determining other potential odour sources and infrastructure issues. CRD staff did receive a letter from the Township of Esquimalt staff at the end of September, which outlines the outstanding commitments between the Township and the CRD, including odour management; the CRD is preparing a response.

#### MPWWTP Project Agreement Acceptance and Performance Holdbacks/Payments

As per the Project Agreement, upon receipt of the Acceptance Testing documentation and the relevant Independent Certifiers' Acceptance Test Reports the following Acceptance Payments have been released:

- Acceptance Payment in the amount of \$60,000,000 (January 2021)
- Wet Weather Event Acceptance Payment in the amount of \$3,000,000 (January 2021)
- Seasonal Odour Control Acceptance Payment in the amount of \$2,000,000 (October 2021)



- The remaining Project Agreement holdbacks are as follows:
- Completion Holdback in the amount of \$5,000,000 to be released following the Performance Period subject to satisfying the performance protocols defined in the Project Agreement, less an amount equal to 200% of the value of any outstanding warranty work as determined by the CRD.
- Performance Incentive Payment in the amount of \$500,000 to be released following the Performance Period subject to continuously achieving compliance with all of the Process Performance Guarantees throughout the Performance Period plus an amount up to \$500,000 subject to operations and maintenance cost performance, quality of service provided by HRP during Performance Period, and extent of warranty work performed during the Performance Period.

### Completion Holdback

CRD staff continue to work with HRP at the MPWWTP to identify and address equipment and process related issues affecting performance and operation. Since January 2021, there have been 313 warranty or deficiency items identified through on going inspections and operational reviews. HRP has funded approximately \$2,900,000 through the Performance Period to replace faulty equipment and consumables and add equipment not included in the original design. It is anticipated that by the end of the Performance Period, all but four of the deficiency and warranty items will be addressed. The estimated value of the outstanding items is up to \$70,000. With HRP's agreement, it is proposed to withhold this amount from the final contractual payment in December 2022, until the work is complete. Stantec, the owner's engineer on the project, will provide a recommendation to release the holdback prior to year end, based on an 'inspection report' as per the Project Agreement.

### Performance Incentive Payment

In consideration of the process performance guarantees, given some of the challenges related to consistent effluent quality and odour control, but also HRP's cooperation and commitment to a successful project through the Performance Period, the CRD is proposing a performance incentive payment of \$800,000.

### Latent Defect Warranty

Under the Project Agreement, any defects that become apparent during the Latent Defect Warranty Period, which expires January 12, 2031, which were not identified, and could not reasonably have been identified during the warranty period or before the end of the Performance Period, will potentially be rectified by HRP, subject to the CRD notifying HRP and a review process by HRP and the CRD.

## **CONCLUSION**

Based on the status of the MPWWTP project, operational performance, and terms and conditions of the MPWWTP Project Agreement, staff are preparing to closeout the Performance Period by January 13, 2023. CRD staff have been working with HRP to address final remaining deficiency, warranty and operational issues and proposing to release the Completion Holdback and pay a portion of the Performance Incentive Payment in January. The CRD remains committed to

achieving the performance criteria set out for the MPWWTP beyond the contractual conclusion of the Performance Period.

**RECOMMENDATION**

There is no recommendation, this report is for information only.

Submitted by:	Ted Robbins, BSc., CTech., General Manager, Integrated Water Services
Concurrence:	Kristen Morley, JD, General Manager, Corporate Services & Corporate Officer
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer



**Stantec Consulting Ltd.**  
200-325 25 Street SE  
Calgary AB T2A 7H8

November 30, 2022

Project/File: 111700431

**Jason Dales**

Integrated Water Services| Capital Regional District  
337 Victoria View Rd  
Victoria BC,  
V9A3Z3

Hello Jason Dales,

**Reference: McLoughlin Point WWTP Project Completion**

It is known that HRP was issued with the Certificate of Conditional Acceptance by the Independent Certifier as per the terms of the Project Agreement on January 18, 2021 and subsequently commenced the 2 Year Performance Period. Within that period HRP was issued the Certificate of Acceptance with the completion of Seasonal Odour Monitoring as certified by the Independent Certifier. With the Performance Period ending January 18, 2023, Stantec Consulting Ltd. (Stantec) has been requested to comment on the completion of the McLoughlin Point Wastewater Treatment Plant Project.

Throughout the Performance Period, Stantec has managed the Warranty Defect Identification and Tracking (WDIT) process. Through this process Stantec logged and provided opinion on approximately 321 defects. It is our understanding that 15 of these defects remain open at this time and are in various states of resolution or negotiation between HRP and CRD. These 15 defects are:

- WDIT No. 104 – Local Control Panels UPS monitoring missing.
- WDIT No. 150 – Low voltage switchgear malfunction.
- WDIT No. 151 – Blower Alarms.
- WDIT No. 182 – Blower close transition ride through failure.
- WDIT No. 238 – Blower Power Supply.
- WDIT No. 239 – Blower #'s 11, 21, 31, 41, 51, 61 cooling fan failures and blower doors not closing properly.
- WDIT No. 268 – Ferric dosing pressure switch failure.
- WDIT No. 271 – Electrical switchgear drawings and labelling.
- WDIT No. 289 – Actuator Rating.
- WDIT No. 300 – Plant Influent manual bypass valve encased in concrete.
- WDIT No. 313 – Secondary Odour Control fan motor.
- WDIT No. 316 – Switchgear UPS.
- WDIT No. 317 – Motor Control Supports.
- WDIT No. 320 – Heat Recovery pumps RT.
- WDIT No. 321 – BAF#3 M actuator failure.

**Reference: McLoughlin Point WWTP Project Completion**

In addition to the above defects, it is also our understanding that there is an estimated \$70,000.00 worth of work related to repair and replacement of actuators for which a \$140,000.00 holdback is being applied.

With the exception of those outstanding items noted above, it is Stantec's opinion that the physical aspects of the facility are complete and have met the requirements of the Project Agreement, and it is our recommendation that the District release the project completion funds less any negotiated and agreed holdback amounts.

Regards,

**STANTEC CONSULTING LTD.**



Digitally signed by Andrew  
Buchner, P.Eng.  
Date: 2022.12.01  
12:30:23-08'00'

**Andrew Buchner** P.Eng.  
BC Practice Leader  
Phone: (403) 205-5797  
Mobile: 250-216-7129  
andrew.buchner@stantec.com



Digitally signed by Yi,  
Miles  
Date: 2022.12.01  
12:36:02 -08'00'

**Miles Yi** Ph.D., P.Eng.  
Principal  
Phone: (604) 512-9383  
miles.yi@stantec.com



October 21, 2021

Harbour Resource Partners LP  
338 Victoria View Road  
Victoria, BC  
V9A 6T7

Capital Regional District  
510 – 1675 Douglas Street  
Victoria, BC  
V8W 2G5

Attention: Mr. Jeremy Klarenbach

Mr. Ted Robbins

Dear Sirs

**RE: McLoughlin Point Wastewater Treatment Plant Project  
Certificate of Acceptance**

Pursuant to Schedule 5 of the Project Agreement for the above project dated March 14, 2017; we certify that the McLoughlin Point Wastewater Treatment Plant Project has achieved Acceptance as of October 21, 2021. Please find appended to this letter the following documents:

1. MPWWTP – IC – Certificate of Acceptance – October 21, 2021
2. MPWWTP – IC – Certificate of Acceptance Completion Checklist – October 21, 2021

We trust that this is satisfactory for your current requirements. Please contact either of the undersigned should you wish to discuss, or have any questions or comments.

Yours truly,  
**BTY Group**

A handwritten signature in blue ink, appearing to read 'Nicholas Jackson', written over a light blue horizontal line.

**Nicholas Jackson**, Snr. Project Consultant  
B.Eng

A handwritten signature in blue ink, appearing to read 'Joanne Henson', written over a light blue horizontal line.

**Joanne Henson**, Director  
MRICS, PQS, LEED AP

cc:

Jacquelin Weston  
Matt McCrank  
Andrew Buchner  
Jose Bicudo



# PROJECT AGREEMENT CERTIFICATE OF ACCEPTANCE



## McLOUGHLIN POINT WASTEWATER TREATMENT PLANT

**Project Co**

Harbour Resource Partners LP  
338 Victoria View Road  
Victoria, BC  
V9A 6T7

**District**

Capital Regional District  
510 – 1675 Douglas Street  
Victoria, BC  
V8W 2G5

Attention: Mr. Jeremy Klarenbach

Attention: Mr. Ted Robbins

We hereby certify that Acceptance, as defined in the Project Agreement for the McLoughlin Point Wastewater Treatment Plant Project, between the parties above, dated March 14, 2017 has been achieved.

We issue this Certificate of Acceptance in accordance with the definitions of the aforementioned Project Agreement.

**The Acceptance Date is October 21, 2021.**

This Certificate is to be read in conjunction with our covering correspondence dated October 21, 2021.

Certified by:

A handwritten signature in blue ink, appearing to read 'Nicholas Jackson'.

**Nicholas Jackson, B.Eng**  
Snr. Project Consultant

Reviewed by:

A handwritten signature in blue ink, appearing to read 'Joanne Henson'.

**Joanne Henson, Director**  
MRICS, PQS, LEED AP

# APPENDIX C

- Item agreed to be Deferred Conditional Acceptance
- Item complete and agreed to by all parties
- Item deemed complete by BTY Group; to be reviewed by all parties
- Item reviewed by all parties and deemed to be a compliance issue/risk

Acceptance Date Achieved: **October 21, 2021**

Checklist Ref	PA Ref.	Scope	Action By	PA Ref.	Sign Off Date	Completion Status
<b>DEFINITION</b>						
1.00	Schedule 5, Section 9.12	Acceptance Test Report	Project Co.	Project Co. to supply report to District and Independent Certifier, this triggers the "Application for Certificate of Acceptance 9.17"	12-Jan-21	
2.00	Schedule 5, Section 9.17 (a)	Certificate of Acceptance	IC	Issue a certificate indicating that all of the Acceptance Date Conditions have been achieved (a "Certificate of Acceptance");	21-Oct-21	Following the Seasonal Odour Control Acceptance Test in January 2021 (ambient) and July 2021 (warm), Project Co have demonstrated that all Seasonal Odour control Acceptance Standards have been achieved. Therefore, Project Co have now demonstrated that the Facility complies with all Acceptance Date Conditions.
3.00	Schedule 5, Section 9.17 (b)	Certificate of Conditional Acceptance	IC	Subject to Section 9.16 [Conditional Acceptance] of this Schedule, issue a certificate indicating that all Acceptance Date Conditions but for the Wet Weather Event Acceptance Standards, Seasonal Odour Control Acceptance Standards, or both have been achieved	12-Jan-21	
<b>SCHEDULE 5, SECTION 9.10: CONDUCT OF ACCEPTANCE TEST</b>						
4.00	Schedule 5, Section 9.10 (a)	Acceptance test	Project Co.	Project Co will conduct the Acceptance Test in accordance with the Contract Standards, including the specific requirements set forth in Appendix 5-B [Acceptance Standards] and the approved Acceptance Test Plan;	12-Jan-21	
5.00	Schedule 5, Section 9.10 (b)	Acceptance test	Project Co.	Project Co will coordinate all Acceptance Test activities with the District to permit the designated representatives of the Independent Certifier, the District and the District Representative to inspect the preparations for any Acceptance Test and to witness all Acceptance Tests for purposes of evaluating compliance with the Acceptance Test Plan and the integrity of the Acceptance Test results	12-Jan-21	
6.00	Schedule 5, Section 9.10 (c)	Acceptance test	Project Co.	Project Co will provide the Independent Certifier and the District with split samples from any wastewater or sludge stream as requested to enable the Independent Certifier and the District to complete independent testing for compliance audits;	12-Jan-21	
7.00	Schedule 5, Section 9.10 (d)	Acceptance test	Project Co.	Project Co will use a certified external laboratory for all analyses completed during the Acceptance Test, which laboratory will be accredited by the Canadian Association for Laboratory Accreditation (CALA);	12-Jan-21	
8.00	Schedule 5, Section 9.10 ('e')	Acceptance test	Project Co.	Project Co will complete the Acceptance Test in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater, as published jointly by the American Public Health Association, American Waterworks Association and Water Environment Federation;	12-Jan-21	
9.00	Schedule 5, Section 9.10 (f)	Acceptance test	Project Co.	Project Co will provide, at its sole cost and expense, all labour, materials, equipment, Consumables, sampling, external laboratory testing, and any other services required to perform the Acceptance Test.	12-Jan-21	
10.00	Schedule 5, Section 9.10 (g)	Acceptance test	Project Co.	Project Co will operate all systems during the Acceptance Test under normal operating conditions, including routine equipment operation, maintenance services, chemical usage and electricity usage.	12-Jan-21	

Checklist Ref	PA Ref.	Scope	Action By	PA Ref.	Sign Off Date	Completion Status
<b>SCHEDULE 5, SECTION 9.12: ACCEPTANCE TEST REPORT</b>						
11.00	Schedule 5. Section 9.12 (a)	In accordance with Acceptance Test Plan	Project Co.	A certificate stating that testing was conducted in accordance with the approved Acceptance Test Plan and the design meets the Design and Construction Specifications.	12-Jan-21	
12.00	Schedule 5. Section 9.12 (b)	Certification of results	Project Co.	A certification of the results of each Acceptance Test, including (1) a determination of the extent to which the results comply with the Acceptance Standards; and (2) for each Process Performance Guarantee, a determination of the extent to which the Facilities comply with the Process Performance Guarantee:	12-Jan-21	
13.00	Schedule 5. Section 9.12 (c)	Data and records	Project Co.	All required data measured and recorded during the acceptance Test, including all certified laboratory analyses, chemical consumption, instrument calibrations, pressures, and other measurement, with copies of original data sheets, log sheets, calculations, laboratory reports and test sheets:	12-Jan-21	
14.00	Schedule 5. Section 9.12 (d)	Testing, evaluation, analyses and performance	Project Co.	All necessary certifications relating to testing, evaluation, analysis and performance:	12-Jan-21	
15.00	Schedule 5. Section 9.12 (e)	Test failures, equipment failures, repairs and preventative maintenance	Project Co.	A record of all test failures, repairs and preventative maintenance:	12-Jan-21	
16.00	Schedule 5. Section 9.12 (f)	Data demonstrating the ability to meet the requirements of the Acceptance Standards	Project Co.	A summary of all data and calculations demonstrating the ability of the Facilities to meet the requirements of the Acceptance Standards;	12-Jan-21	
17.00	Schedule 5. Section 9.12 (g)	Additional data requested by District or IC to be included in report	Project Co.	Any additional data reasonably requested by the District or the Independent Certifier to be included in the report.	12-Jan-21	
<b>SCHEDULE 5, SECTION 9.13: ACCEPTANCE DATE CONDITIONS</b>						
18.00	Schedule 5. Section 9.13 (a)	Achievement of Acceptance Standards	Project Co.	Project Co has completed the required Acceptance Testing and such testing will have demonstrated that the Project has met the Acceptance Standards, subject to Sections 9.14 [Maximum Sludge Production Acceptance Standard], 9.15 [Energy Utilization Acceptance Standard] and 9.16 [Conditional Acceptance];	12-Jan-21	
19.00	Schedule 5. Section 9.13 (b)	Design and Construction Completed	Project Co.	All Design and Construction (including all items on the Punch List and all clean up and removal of construction materials and demolition debris) is complete and in all respects is in compliance with this Agreement;	12-Jan-21	
20.00	Schedule 5. Section 9.13 (c)	Temporary Works	Project Co.	Project Co has remediated all affected lands and removed all Temporary Works related to the Design and Construction.	12-Jan-21	
21.00	Schedule 5. Section 9.13 (d)	Operating Permits	Project Co.	All applicable Permits, including the Operational Certificate, required under Law that are necessary for the continued routine operation of the Project have been duly obtained and are in full force and effect. Certified copies of all such Permits, to the extent not in the District's possession, will have been delivered to the District;	12-Jan-21	
22.00	Schedule 5. Section 9.13 (e)	Training	Project Co.	Project Co has completed all training of District Staff required to be completed prior to the Acceptance Date;	12-Jan-21	



Checklist Ref	PA Ref.	Scope	Action By	PA Ref.	Sign Off Date	Completion Status
23.00	Schedule 5. Section 9.13 (f)	Charges	Project Co.	Project Co has provided evidence to the District that no Charges exist with respect to the Project other than Encumbrances and has provided a written representation that there exist no outstanding claims from Sub-Contractors or materials providers or, if there are outstanding claims from Project Contractors, Sub-Contractors or materials providers, Project Co will state the nature and amount of the claims, identify the claimant, and indemnify defend and hold harmless the District and each District Indemnified Person in accordance with and to the extent provided in Section 9.1 [Project Co's Obligation to Indemnify] of this Agreement from and against all Direct Losses resulting therefrom;	12-Jan-21	
24.00	Schedule 5. Section 9.13 (g)	Final Certificate and Claims Statement	Project Co.	Project Co will have prepared and submitted to the District: (1) written certifications that (a) all the Design and Construction has been completed in accordance with the Contract Standards, and (b) Acceptance of the Project has occurred; and (2) a certified claims statement setting forth a detailed, itemized description, related dollar amount and grounds for all known claims of every kind whatsoever against the District in connection with or arising out of the Design and Construction that Project Co may have;	12-Jan-21	
25.00	Schedule 5. Section 9.13 (h)	No Default	Project Co.	Project Co has certified that there is no Project Co Event of Default under this Agreement, or event which, with the giving of notice or the passage of time, would constitute a Project Co Event of Default; and	12-Jan-21	
26.00	Schedule 5. Section 9.13 (i)	LEED	Project Co.	Project Co has delivered the LEED project checklist, with written confirmation that Project Co. has submitted the application for LEED Gold Certification, and a written opinion signed by a qualified professional, each in accordance with Section 3.19.	12-Jan-21	
<b>SCHEDULE 5, SECTION 9.14: MAXIMUM SLUDGE PROTECTION ACCEPTANCE STANDARD</b>						
27.00	Schedule 5. Section 9.14 (b)	Achievement of Acceptance Standard	Project Co.	Project Co will achieve the Maximum Sludge Production Acceptance Standard if Project Co demonstrates that Sludge production during the performance of the 45-day Acceptance Test does not exceed the Adjusted Guaranteed Maximum Sludge Production , as determined in accordance with the methodology set forth in Appendix 5-B [Acceptance Standards];	12-Jan-21	
<b>SCHEDULE 5, SECTION 9.15: ENERGY UTILIZATION ACCEPTANCE STANDARD</b>						
28.00	Schedule 5. Section 9.15 (b)	Achievement of Acceptance Standard	Project Co.	Project Co will achieve the Energy Utilization Acceptance Standard if Project Co demonstrates that energy utilization at the Facilities during the performance of the 45-day Acceptance Test does not exceed the Adjusted Guaranteed Maximum Energy Utilization;	12-Jan-21	
<b>SCHEDULE 5, SECTION 9.16: CONDITIONAL ACCEPTANCE</b>						
29.00	Schedule 5. Section 9.16a	Acceptable Standard	Project Co.	The Wet Weather Event Acceptance Standards, which can only be demonstrated when Influent flow is in excess of 216 ML/d for a minimum of 4-hours (a "Wet Weather Event"); and	12-Jan-21	
30.00	Schedule 5. Section 9.16b	Acceptable Standard	Project Co.	The Seasonal Odour Control Acceptance Standards, which require Acceptance Testing during periods of warm ambient temperatures (expected to occur during July or August) and cold ambient temperatures (expected to occur during December or January).	14-Oct-21	



## **McLoughlin Point Wastewater Treatment Plant**

CRD Contract No: CAWTP-17-006

Submittal No: AGJV-RPT-ACC TEST-04

# **Conditional Acceptance Supplemental Odour Information**

Quality Information

Prepared by	Checked by	QA/QC Approved by	Director Approved by
_____	_____	_____	_____
David Houghton	Mike McCoy David Lycon Randy Craig	Randy Pointkoski	Jeremy Klarenbach
_____	_____	_____	_____

Revision History

Revision	Revision Date	Details	Name	Position
1	February 16, 2021	Odour Information Conditional Acceptance	David Houghton	Resident Engineer
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____



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# 1. Acceptance Test Report

The Acceptance Test Report addresses the following deliverables from the Project Agreement:

Item	Description	Required by	Date Submitted	Review Type
1	Acceptance Test Report	Section 9.12 of Schedule 5 [Design and Construction Protocols]		Consent



## 2. Definitions

"Agreement"	means the Project Agreement, including any recitals, Schedules and Appendices to the Project Agreement, as amended, supplemented or restated from time to time;
"Acceptance"	means the issuance of the Certificate of Acceptance by the Independent Certifier;
"Acceptance Date"	means the earlier of either of the date: (a) the Certificate of Acceptance is issued, and, (b) the Certificate of Conditional Acceptance is issued;
"Acceptance Date Conditions"	has the meaning set out in Section 9.13 of Schedule 5 [Design and Construction Protocols];
"Acceptance Protocol"	has the meaning given in Section 1.1(a)(3) of Appendix 5-C [Equipment and Furniture] of Schedule 5 [Design and Construction Protocols];
"Acceptance Standards"	means the standards for Acceptance set out in Section 9.11 [Acceptance Standards] of Schedule 5 [Design and Construction Protocols];
"Acceptance Test"	means all testing required to achieve Acceptance, as described in Section 9 [Start-Up, Commissioning and Acceptance] of Schedule 5 [Design and Construction Protocols];
"Acceptance Test Plan"	has the meaning set out in Section 9.8 of Schedule 5 [Design and Construction Protocols];
"Acceptance Testing"	means all work, activities and tasks HRP is required to undertake or perform in carrying out and successfully completing the Acceptance Test;
"BIM"	means Building Information Modeling system which complies with the 'CRD Wastewater Treatment Project – CAD Drawings/Digital Mapping Drafting Standards v3.0, dated March 24, 2017.' and response to RFI 4 dated June 15, 2017;
"BOD <sub>5</sub> "	means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;
"cBOD <sub>5</sub> "	means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;
"CEPT"	means Chemically Enhanced Primary Treatment;
"District"	means the Capital Regional District;
"Effective Date"	means the date of the Project Agreement;
"Effluent"	means all treated wastewater discharged from the Plant through the Outfall to the ocean;
"Facilities"	means the Plant, Harbour Crossing and Outfall, including all associated buildings, structures, site work, offsite utility connections and extensions, systems, equipment, supplies and infrastructure, all other civil, structural, mechanical,



electrical, instrumentation and other equipment and systems, and all landscaping and other improvements, in each case to be designed, constructed and installed by HRP pursuant to the Agreement;

- "HRP" means Harbour Resource Partners Limited Partnership;
- "Project" means the design, construction, financing, testing and commissioning of the Facilities and all other works and services required under this Agreement;
- "Project Agreement" means the Agreement for the McLoughlin Point Wastewater Treatment Plant Project between the Capital Regional District and Harbour Resource Partners Limited Partnership, as dated March 14, 2017;
- "Staffing Plan" "Staffing Plan" means the staffing plan prepared by HRP and set out in Appendix 7-A [Staffing Plan] of Schedule 7 [Performance Protocols];
- "TSS" means Total Suspended Solids, a measure of the suspended solids in wastewater, effluent, or water bodies, determined by tests for "total suspended non-filterable solids."
- "Wet Weather Event" has the meaning set out in Section 9.16 [Conditional Acceptance] of Schedule 5 [Design and Construction Protocols];
- "Wet Weather Event Acceptance Standards" has the meaning set out in Section 8 [Wet Weather Event Acceptance Standards] of Appendix 5-B [Acceptance Standards] of Schedule 5 [Design and Construction Protocols];



### 3. Introduction

This Conditional Acceptance Supplement documents the work, activities and tasks that HRP has undertaken to complete the Phase 2 Cold Weather Odour Control Test in accordance with the Project Agreement. The Cold Weather Odour Control Test was conducted from 8:30 pm, January 24<sup>th</sup> to 10:00 am, January 25<sup>th</sup>, 2021.

### 4. Summary of Conditional Acceptance Test

The following table summarizes the general information and operating conditions for the test that HRP has undertaken to supplement the Conditional Acceptance.

Test	General Area of Testing	Acceptance Requirement & Operational Conditions
<b>Odour Control System Acceptance Testing</b>		
	Cold Period Test	3 Samples, Maximum daily ambient temperature less than 5°C

### 5. Seasonal Odour Control Testing Results

The following is a summary of the Cold Weather Odour Control Testing results for the tests that were performed in accordance with Section 15.3 of the Acceptance Test Plan.

#### 5.1 Phase 2 Odour Tests

##### 5.1.1 Cold Weather Seasonal Testing

Testing was completed while the plant was fully operational including both the primary and secondary odour control systems.

Cold weather test sampling was conducted at three times from 8:30 pm, January 24<sup>th</sup> to 10:00 am, January 25<sup>th</sup>, 2021. Weather records for Esquimalt, BC showed that the daily maximum ambient temperature was 5°C or less preceding and during the test.





SUNDAY, JANUARY 24 - MONDAY, JANUARY 25

HOURLY

	Sun 8 am	Sun 9 am	Sun 10 am	Sun 11 am	Sun 12 pm	Sun 1 pm	Sun 2 pm	Sun 3 pm	Sun 4 pm	Sun 5 pm	Sun 6 pm	Sun 7 pm
Temp	4°C	4°C	4°C	5°C	5°C	5°C	5°C	5°C	5°C	5°C	5°C	5°C
Feels Like	1	0	0	0	1	1	2	2	2	1	1	3
Dewpoint	4°C	3°C	3°C	3°C	3°C	3°C	4°C	3°C	3°C	4°C	4°C	5°C
Wind	E15 km/h	SE17 km/h	E19 km/h	SE28 km/h	SE22 km/h	SE24 km/h	SE13 km/h	SE13 km/h	SE15 km/h	SE19 km/h	SE17 km/h	S9 km/h
Relative humidity (%)	100	93	93	87	87	87	93	87	87	93	93	100
Pressure	100.71 KPa	100.67 KPa	100.63 KPa	100.58 KPa	100.50 KPa	100.43 KPa	100.41 KPa	100.40 KPa	100.40 KPa	100.42 KPa	100.43 KPa	100.46 KPa
Visibility	16 km	11 km	11 km	19 km	24 km	16 km	24 km	24 km	32 km	24 km	19 km	13 km
Ceiling (ft)	1600	1900	1900	1900	1900	1900	1900	2100	3300	1900	1700	1700

SUNDAY, JANUARY 24 - MONDAY, JANUARY 25

HOURLY

	Sun 8 pm	Sun 9 pm	Sun 10 pm	Sun 11 pm	Mon 12 am	Mon 1 am	Mon 2 am	Mon 3 am	Mon 4 am	Mon 5 am	Mon 6 am	Mon 7 am
Temp	5°C	5°C	4°C	3°C	3°C	2°C	2°C	2°C	2°C	2°C	2°C	3°C
Feels Like	2	1	1	1	-1	-1	-1	0	0	0	1	1
Dewpoint	5°C	4°C	3°C	3°C	2°C	2°C	2°C	2°C	2°C	2°C	2°C	1°C
Wind	SE13 km/h	SE19 km/h	SE13 km/h	S7 km/h	W15 km/h	W9 km/h	W9 km/h	SW7 km/h	SW7 km/h	SW7 km/h	SW4 km/h	E9 km/h
Relative humidity (%)	100	93	93	100	93	100	100	100	100	100	100	87
Pressure	100.48 KPa	100.52 KPa	100.52 KPa	100.57 KPa	100.61 KPa	100.62 KPa	100.63 KPa	100.68 KPa	100.71 KPa	100.73 KPa	100.76 KPa	100.81 KPa
Visibility	13 km	13 km	16 km	19 km	16 km	13 km	9.7 km	11 km	13 km	16 km	24 km	19 km
Ceiling (ft)	1800	1700	2000	2000	2800	1500	1500	1500	1500	2300	4500	5300

MONDAY, JANUARY 25 - TUESDAY, JANUARY 26

HOURLY

	Mon 8 am	Mon 9 am	Mon 10 am	Mon 11 am	Mon 12 pm	Mon 1 pm	Mon 2 pm	Mon 3 pm	Mon 4 pm	Mon 5 pm	Mon 6 pm	Mon 7 pm
Temp	3°C	4°C	5°C	5°C	5°C	5°C	6°C	5°C	5°C	4°C	2°C	1°C
Feels Like	0	3	5	1	0	1	3	1	1	2	1	0
Dewpoint	2°C	2°C	2°C	3°C	3°C	3°C	3°C	2°C	2°C	1°C	1°C	1°C
Wind	SE11 km/h	S6 km/h	0 km/h	SE24 km/h	SE28 km/h	SE22 km/h	SE17 km/h	S22 km/h	S19 km/h	S7 km/h	4 km/h	NW4 km/h
Relative humidity (%)	93	87	81	87	87	87	81	81	81	81	93	100
Pressure	100.82 KPa	100.86 KPa	100.92 KPa	100.97 KPa	100.97 KPa	100.97 KPa	100.99 KPa	101.03 KPa	101.05 KPa	101.04 KPa	101.03 KPa	101.02 KPa
Visibility	16 km	24 km	24 km	24 km	32 km	32 km	32 km	32 km	32 km	32 km	32 km	32 km
Ceiling (ft)	5000	5200	8000	5000	5000	5000	5000	unlimited	unlimited	unlimited	unlimited	unlimited

Figure 5-1: Weather Network Historical Hourly Weather - Esquimalt, BC



The sample times were chosen to include the times of maximum hydrogen sulfide load and minimum hydrogen sulfide load and a time in between, as determined by the seven days of continuous hydrogen sulfide monitoring. The figure below indicates that the time of peak loading to the primary odour control system generally occurs between 8:30 and 9:30 pm and minimum loading occurs between 9 and 10am. For the secondary odour control system the inlet H<sub>2</sub>S concentration was below the detection limit (1 ppm) for the instrument through the testing period. This was confirmed with a Jerome H<sub>2</sub>S analyzer which showed average inlet concentrations of approximately 0.35 ppm H<sub>2</sub>S and maximums below 0.5 ppm. The same time windows used for the primary odour sampling was used for the secondary odour system.

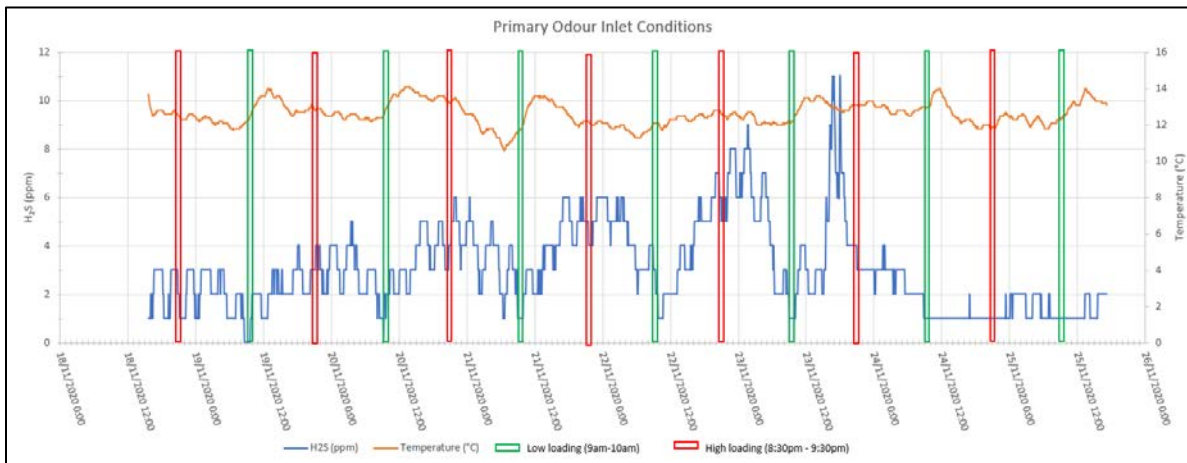


Figure 5-2: Primary Odour Continuous H<sub>2</sub>S Inlet Concentrations

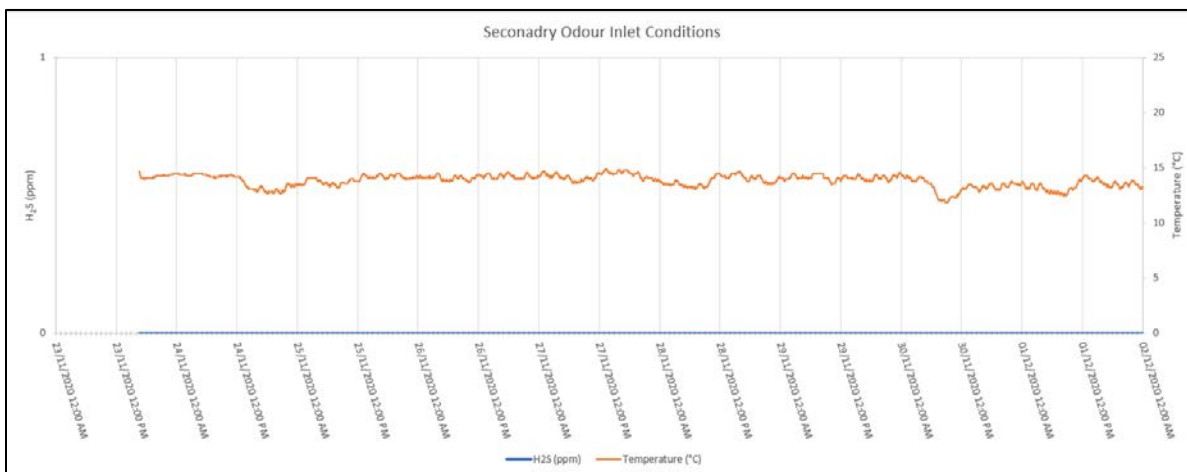
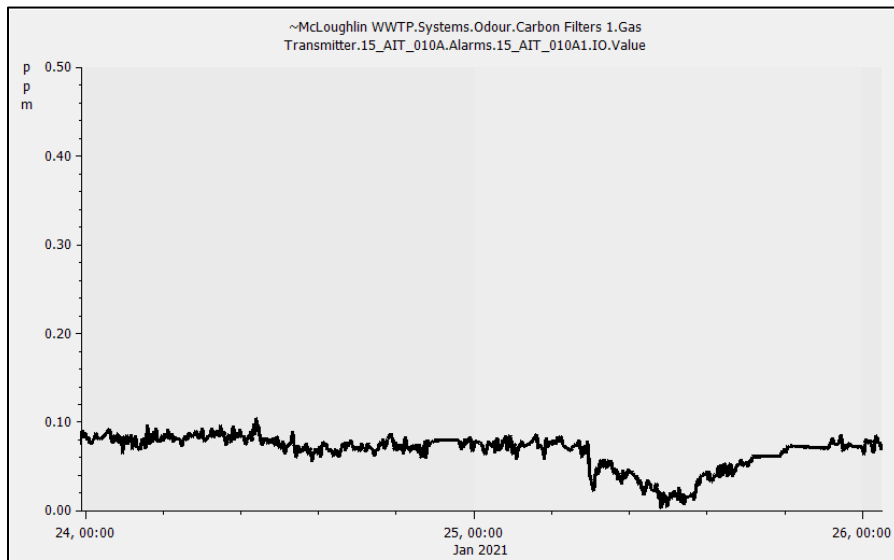
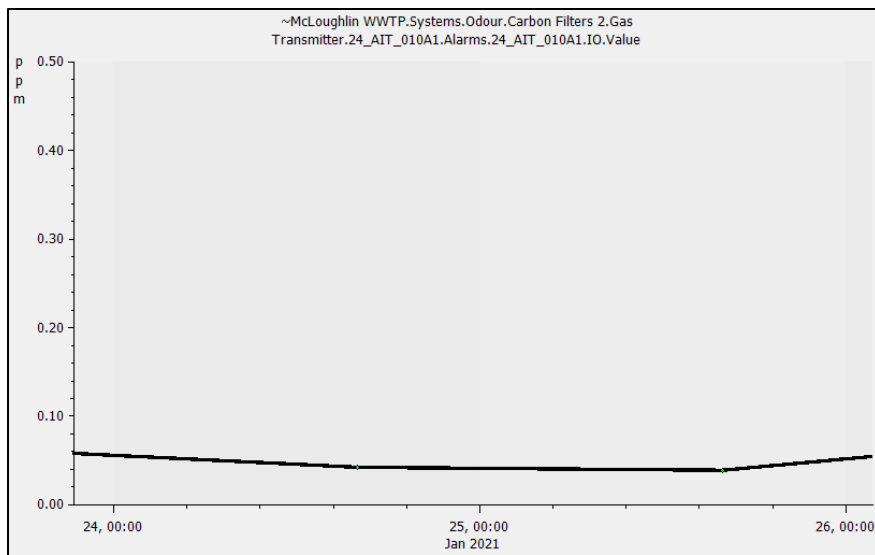


Figure 5-3: Secondary Odour Continuous H<sub>2</sub>S Inlet Concentrations

The H<sub>2</sub>S removal requirement during cold temperature testing is 95%. Cold weather odour testing occurred when the Plant was fully operational including both the primary and secondary odour control systems. The odour control stack effluent H<sub>2</sub>S concentrations from both systems was continuously monitored via SCADA throughout the test. The continuous stack H<sub>2</sub>S monitoring results are shown in Figure 5-4 and Figure 5-5.



**Figure 5-4: Primary Odour Control Continuous H<sub>2</sub>S Log**



**Figure 5-5: Secondary Odour Control Continuous H<sub>2</sub>S Log**



Influent and effluent samples for each system for both H<sub>2</sub>S and Total Odour were taken within one hour of each other. H<sub>2</sub>S samples were taken in triplet using a Jerome H<sub>2</sub>S analyzer for both inlet and outlet streams. Total Odour samples were collected into Tedlar bags using a lung pump and shipped to ORTECH Consulting Ltd. for analysis. The results of the odour panel analysis on January 26<sup>th</sup> are provided in Appendix A.

The results of the effluent sampling program are presented in Table 5-1 and Table 5-2.

**Table 5-1: Primary Odour Control Results Summary**

Sample Location:	Primary Foul Air							
	Inlet H <sub>2</sub> S	Inlet Odour	Influent Sample Time	Outlet H <sub>2</sub> S	Outlet Odour	Effluent Sample Time	H <sub>2</sub> S Removal	Odour Removal
Units	ppm	OU		ppm	OU			
Type	Grab	Grab		Grab	Grab			
1	2.2	35559	January 24, 2021 9:20 PM	0.010	110	January 24, 2021 9:05 PM	99.6%	99.7%
2	1.3	36202	January 25, 2021 6:15 AM	0.007	215	January 25, 2021 6:00 AM	99.5%	99.4%
3	1.4	36950	January 25, 2021 9:45 AM	0.011	315	January 25, 2021 9:35 AM	99.2%	99.1%
Count	3	3	-	3	3	-	-	-
Minimum	1.3	35559	-	0.007	110	-	99.2%	99.1%
Maximum	2.2	36950	-	0.011	315	-	99.6%	99.7%
Average	1.6	36237	-	0.009	213	-	99.4%	99.4%
Standard Deviation	0.5	696	-	0.002	103	-	0.2%	0.3%

**Table 5-2: Secondary Odour Control Results Summary**

Sample Location:	Secondary Foul Air							
	Inlet H <sub>2</sub> S	Inlet Odour	Influent Sample Time	Outlet H <sub>2</sub> S	Outlet Odour	Effluent Sample Time	H <sub>2</sub> S Removal	Odour Removal
Units	ppm	OU		ppm	OU			
Type	Grab	Grab		Grab	Grab			
1	1.4	24637	January 24, 2021 8:45 PM	0.039	113	January 24, 2021 8:35 PM	97.3%	99.5%
2	0.40	23795	January 25, 2021 6:35 AM	0.007	713	January 25, 2021 6:26 AM	98.2%	97.0%
3	0.43	36856	January 25, 2021 9:30 AM	0.031	746	January 25, 2021 9:15 AM	92.8%	98.0%
Count	3	3	-	3	3	-	-	-
Minimum	0.4	23795	-	0.007	113	-	92.8%	97.0%
Maximum	1.4	36856	-	0.039	746	-	98.2%	99.5%
Average	0.8	28429	-	0.026	524	-	96.1%	98.2%
Standard Deviation	0.6	7309	-	0.016	356	-	2.9%	1.3%

The results exceed the performance requirements of the Cold Weather Odour Control Test as summarized in Table 5-3. The acceptance of the Phase 2 Cold Weather Odour Control Test has been achieved as follows:

For the Primary Odour Control System test the minimum H<sub>2</sub>S removal observed was 99.2% and the maximum H<sub>2</sub>S concentration observed was 0.011 ppm, this exceeds the performance requirement of either 95% removal or < 0.5ppm H<sub>2</sub>S, whichever is greater. For the primary system both H<sub>2</sub>S removal efficiency and maximum H<sub>2</sub>S concentrations are met. The minimum total odour removal observed during the test was 99.1% which exceeds the required performance of 95% removal.

For the Secondary Odour Control System test the minimum H<sub>2</sub>S removal observed was 92.8% and the maximum H<sub>2</sub>S concentration observed was 0.039 ppm, this exceeds the performance requirement of



either 95% removal or < 0.1 ppm H<sub>2</sub>S, whichever is greater. For the secondary system the maximum H<sub>2</sub>S concentrations was met in all cases although the system did not meet the H<sub>2</sub>S removal efficiency requirement in one of the three samples sets. This meets the performance requirement as the effluent H<sub>2</sub>S concentration was below 0.1 ppm in all cases. The minimum total odour removal observed during the test was 97.0% which exceeds the required performance of 95% removal.

**Table 5-3: Cold Weather Odour Control Performance Summary**

Parameter	Required Performance	Achieved Performance
<b>Primary Odour Control System</b>		
H <sub>2</sub> S Removal:	95 % (or outlet H <sub>2</sub> S concentrations 0.5 ppm, whichever is greater)	Minimum removal: 99.2 % Maximum outlet H <sub>2</sub> S: 0.011 ppm
Total Odour Removal:	95 %	Minimum removal: 99.1%
<b>Secondary Odour Control System</b>		
H <sub>2</sub> S Removal:	95 % (or outlet concentrations of 0.1 ppm H <sub>2</sub> S, whichever is greater)	Minimum removal: 92.8 % Maximum outlet H <sub>2</sub> S: 0.039 ppm
Total Odour Removal:	95 %	Minimum removal: 97.0 %

## 6. Conditional Acceptance

The facility has achieved all acceptance criteria with the exception of the Phase 2 Warm Weather Odour Control Test.

The Summer odour control tests could not be completed during the Acceptance Test Period due to the weather not meeting the threshold temperatures for testing. Warm weather testing will be conducted in July, August or September with a daily maximum ambient temperature of 20°C or higher.



## Appendix A – Independent Laboratory Results



## Report:

AECOM  
Odour Analysis of Air Samples

Date: February 9, 2021



# Report:

AECOM

## Odour Analysis of Air Samples

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Report No.: 26696  
 7 pages, 2 Appendices

### Revision History

Version	Date	Summary Changes/Purpose of Revision
1	February 9, 2021	None

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## 1. INTRODUCTION

At the request of AECOM, ORTECH Consulting Inc. (ORTECH) conducted evaluations on twelve (12) Tedlar bag samples for odour detection threshold value (ODTV). Twelve (12) bags were received by ORTECH on January 26<sup>th</sup> and were evaluated the same day. Upon receiving the samples it was determined that the six (6) samples labelled “Inlet” required pre-dilution prior to analysis. These samples were diluted 50x using pure high grade nitrogen.

## 2. METHODOLOGY

### 2.1 Odour Analysis

The odour samples were evaluated during the afternoon on the day that they were received by the dynamic dilution olfactometer at the ORTECH odour test facility, based on **European Standard EN 13725:2003, Air Quality – Determination of odour concentration by dynamic olfactometry**. This facility is a specialized room, designed to provide an odour-free environment for accurate evaluations.

The olfactometer is a binary port system operated in a forced choice mode. The sample bag is pressurized in a pressure vessel, and the resulting flow metered through an electronic mass flow controller at a predetermined rate. The sample is diluted with flow-controlled odourless air, and is passed to the panel members through one of two sample ports. A three-way valve allows the operator to direct the sample through either of the two ports.

Each evaluation began at a high dilution level, which was lowered in a step-wise sequence by a factor of 1.41 at each step. At each dilution level, the panelists registered their responses by entering the letter of the port at which they detected the odour, if any. The upper range of dilution ratios of the ORTECH olfactometer is 5,793 times.

The panelist responses were processed to determine the ODTV for the sample. This is done by a regression analysis of the log of the dilution level versus the probit value of the percent of the panel responding. The point at which statistically 50% of the panel can just detect the odour is recorded as the effective dilution to 50% response or the ODTV. The odour threshold value is a dilution factor and, therefore, has no units. For convenience, however, the ODTV may be expressed in odour units (ou).

An odour panel with eight members was used for the evaluations. They are drawn from a pool of people who routinely participate in this type of work. They have all been tested periodically for odour sensitivity and are considered to be within the normal range.

Upon receiving the samples it was determined that the samples labelled Inlet required pre-dilution prior to analysis. These samples were diluted 50x with a dilution odour sampler using pure high grade nitrogen.

### 3. RESULTS

#### 3.1 Odour Analysis

The individual odour panelist results for each sample evaluated are shown in Appendix 1. Twelve (12) odour samples were evaluated. Raw ODTV and net ODTV for these samples are shown in Table 1. The raw ODTV was multiplied by the pre-dilution ratio to obtain the net ODTV. For those samples which were not pre-diluted, the pre-dilution ratio is shown as one. The odour removal efficiencies for each set of tests were also calculated and are presented in Table 2.

An olfactometer system blank of pure high grade nitrogen was also analyzed and is reported in Table 1 and Appendix 1. Calibration data for the olfactometer is provided in Appendix 2.



Rob Whitten, BES., QSTI  
Project Manager, Odor/Analytical Services

RW:or

**TABLE 1**  
**Odour Results**

Sample Name	Sample Time	Sample Date	Raw ODTV ou	Predilution Ratio	Net ODTV ou
Primary Inlet	9:00pm	24-Jan-21	711.2	50	<b>35559</b>
Primary Outlet	9:00pm	24-Jan-21	109.8	1	<b>110</b>
Secondary Inlet	9:00pm	24-Jan-21	492.7	50	<b>24637</b>
Secondary Outlet	9:00pm	24-Jan-21	113.3	1	<b>113</b>
Primary Inlet	6:00am	25-Jan-21	724.0	50	<b>36202</b>
Primary Outlet	6:00am	25-Jan-21	215.3	1	<b>215</b>
Secondary Inlet	6:00am	25-Jan-21	475.9	50	<b>23795</b>
Secondary Outlet	6:00am	25-Jan-21	713.5	1	<b>713</b>
Primary Inlet	9:30am	25-Jan-21	739.0	50	<b>36950</b>
Primary Outlet	9:30am	25-Jan-21	315.4	1	<b>315</b>
Secondary Inlet	9:30am	25-Jan-21	737.1	50	<b>36856</b>
Secondary Outlet	9:30am	25-Jan-21	746.3	1	<b>746</b>
System Blank Nitrogen		26-Jan-21	<16	1	<b>&lt;16</b>

**TABLE 2**  
**Odour Removal Efficiencies**

Location	Sample Time	Sample Date	Removal Efficiency %
Primary	9:00pm	24-Jan-21	<b>99.7</b>
Secondary	9:00pm	24-Jan-21	<b>99.5</b>
Primary	6:00am	25-Jan-21	<b>99.4</b>
Secondary	6:00am	25-Jan-21	<b>97.0</b>
Primary	9:30am	25-Jan-21	<b>99.1</b>
Secondary	9:30am	25-Jan-21	<b>98.0</b>

**APPENDIX 1**

**ODTV Results  
(13 pages)**

Aecom

January 24, 2021

26696

BC

Primary Inlet

9:00pm

Panelists: 8

OTV = 711.183

Dilution: 50

QTV\*Dilution = 35559

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	1	12.5%	3.845
724	2.8597	3	37.5%	4.680
512	2.7093	7	87.5%	6.155
362	2.5587	8	100.0%	7.500
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12149753

Constant (y-intercept) 3.45946893

Std Err of Y Est 0.02185507

r Squared 0.99367492

No. of Observations 5

log(OTV) 2.85198128

OTV 711.18286

Aecom

January 24, 2021

26696

BC

Primary Outlet

9:00pm

Panelists: 8

OTV = 109.800

Dilution: 1

QTV\*Dilution = 110

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	-1	-12.5%	#N/A
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	0	0.0%	2.500
128	2.1072	3	37.5%	4.680
91	1.9590	6	75.0%	5.670
64	1.8062	8	100.0%	7.500
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09230555

Constant (y-intercept) 2.50213197

Std Err of Y Est 0.03133401

r Squared 0.98260786

No. of Observations 4

log(OTV) 2.04060421

OTV 109.800474



Aecom

January 24, 2021  
26696

BC

Secondary Inlet

9:00pm

Panelists: 8  
 OTV = 492.749  
 Dilution: 50  
 QTV\*Dilution = 24637

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	2	25.0%	4.330
512	2.7093	2	25.0%	4.330
362	2.5587	6	75.0%	5.670
256	2.4082	8	100.0%	7.500
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12407229  
 Constant (y-intercept) 3.31298715  
 Std Err of Y Est 0.07017729  
 r Squared 0.93478389  
 No. of Observations 5

log(OTV) 2.69262572  
 OTV 492.748961

Aecom

January 24, 2021

26696

BC

Secondary Outlet

9:00pm

Panelists: 8

OTV = 113.315

Dilution: 1

QTV\*Dilution = 113

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	-1	-12.5%	#N/A
362	2.5587	-1	-12.5%	#N/A
256	2.4082	0	0.0%	2.500
181	2.2577	3	37.5%	4.680
128	2.1072	4	50.0%	5.000
91	1.9590	4	50.0%	5.000
64	1.8062	7	87.5%	6.155
45	1.6532	8	100.0%	7.500
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.16067377

Constant (y-intercept) 2.85765635

Std Err of Y Est 0.1014369

r Squared 0.89657328

No. of Observations 6

log(OTV) 2.0542875

OTV 113.315025

Aecom

January 25, 2021  
26696

BC

Primary Inlet

6:00am

Panelists: 8  
 OTV = 724.031  
 Dilution: 50  
 QTV\*Dilution = 36202

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	1	12.5%	3.845
724	2.8597	4	50.0%	5.000
512	2.7093	7	87.5%	6.155
362	2.5587	8	100.0%	7.500
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12215411  
 Constant (y-intercept) 3.47052767  
 Std Err of Y Est 0.00847892  
 r Squared 0.99904799  
 No. of Observations 5

log(OTV) 2.85975712  
 OTV 724.030937

Aecom

January 25, 2021  
26696

BC

Primary Outlet

6:00am

Panelists: 8  
 OTV = 215.258  
 Dilution: 1  
 QTV\*Dilution = 215

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	-1	-12.5%	#N/A
362	2.5587	0	0.0%	2.500
256	2.4082	1	12.5%	3.845
181	2.2577	7	87.5%	6.155
128	2.1072	8	100.0%	7.500
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.08588084  
 Constant (y-intercept) 2.76236348  
 Std Err of Y Est 0.02634025  
 r Squared 0.98774837  
 No. of Observations 4

log(OTV) 2.33295927  
 OTV 215.257985

Aecom

January 25, 2021  
26696

BC

Secondary Inlet

6:00am

Panelists: 8  
 OTV = 475.909  
 Dilution: 50  
 QTV\*Dilution = 23795

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	1	12.5%	3.845
724	2.8597	1	12.5%	3.845
512	2.7093	3	37.5%	4.680
362	2.5587	5	62.5%	5.320
256	2.4082	7	87.5%	6.155
181	2.2577	8	100.0%	7.500
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.19224074  
 Constant (y-intercept) 3.63872744  
 Std Err of Y Est 0.06920798  
 r Squared 0.96224584  
 No. of Observations 7

log(OTV) 2.67752373  
 OTV 475.908793

Aecom

January 25, 2021  
26696

BC

Secondary Outlet

6:00am

Panelists: 8

OTV = 713.481

Dilution: 1

QTV\*Dilution = 713

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	3	37.5%	4.680
512	2.7093	8	100.0%	7.500
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.05987819

Constant (y-intercept) 3.15277345

Std Err of Y Est 0.01572555

r Squared 0.99454214

No. of Observations 3

log(OTV) 2.85338249

OTV 713.481123

Aecom

January 25, 2021

26696

BC

Primary Inlet

9:30am

Panelists: 8

OTV = 739.002

Dilution: 50

QTV\*Dilution = 36950

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	3	37.5%	4.680
724	2.8597	4	50.0%	5.000
512	2.7093	6	75.0%	5.670
362	2.5587	8	100.0%	7.500
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12698054

Constant (y-intercept) 3.50354846

Std Err of Y Est 0.07416823

r Squared 0.92715537

No. of Observations 5

log(OTV) 2.86864576

OTV 739.00225

Aecom

January 25, 2021  
26696

BC

Primary Outlet

9:30am

Panelists: 8  
 OTV = 315.401  
 Dilution: 1  
 QTV\*Dilution = 315

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	0	0.0%	2.500
362	2.5587	4	50.0%	5.000
256	2.4082	6	75.0%	5.670
181	2.2577	8	100.0%	7.500
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09187624  
 Constant (y-intercept) 2.95824474  
 Std Err of Y Est 0.04965022  
 r Squared 0.95647996  
 No. of Observations 4

log(OTV) 2.49886354  
 OTV 315.401343



Aecom

January 25, 2021

26696

BC

Secondary Inlet

9:30am

Panelists: 8

OTV = 737.111

Dilution: 50

QTV\*Dilution = 36856

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	1	12.5%	3.845
724	2.8597	5	62.5%	5.320
512	2.7093	7	87.5%	6.155
362	2.5587	8	100.0%	7.500
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12149831

Constant (y-intercept) 3.47502456

Std Err of Y Est 0.02183305

r Squared 0.99368766

No. of Observations 5

log(OTV) 2.86753301

OTV 737.111208

Aecom

January 25, 2021  
26696

BC

Secondary Outlet

9:30am

Panelists: 8  
 OTV = 746.279  
 Dilution: 1  
 QTV\*Dilution = 746

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	6	75.0%	5.670
512	2.7093	8	100.0%	7.500
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.05879991  
 Constant (y-intercept) 3.16690102  
 Std Err of Y Est 0.0325111  
 r Squared 0.9766722  
 No. of Observations 3

log(OTV) 2.87290147  
 OTV 746.279435

Aecom

January 26, 2021

26696

BC

System Blank N2

Panelists: 8

OTV = #DIV/0!

Dilution: 1

QTV\*Dilution = #DIV/0!

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	-1	-12.5%	#N/A
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) #DIV/0!

Constant (y-intercept) #DIV/0!

Std Err of Y Est #DIV/0!

r Squared #DIV/0!

No. of Observations 0

log(OTV) #DIV/0!

OTV #DIV/0!

**APPENDIX 2**

**Calibration Sheets  
(2 pages)**

Mykrolis MFCs  
 System Check by THC Analyzer

Date August 12, 2020  
 Operator RW  
 Signature \_\_\_\_\_  
 \_\_\_\_\_  
 Rotameter A 4.4 Rotameter B 4.5 Regulator Psi: 75.0 psi  
 Total Flow 160 LPM Flow per Port 20 LPM Background Air THC 5  
 Calibration Gas Concentration 2993.0 ppm propane 8979.0 ppm methane  
 Low Dilution Gas Concentration 293.0 ppm propane 879.0 ppm methane

Flow Controller	Dilution Level	Controller Setting	Expected THC ppm	Port A		Port B	
				Measured THC ppm	Percent Difference	Measured THC ppm	Percent Difference
1	4096	55.0	7.19	7.0	2.7	7.0	2.7
1	2896	59.0	8.10	8.0	1.2	8.0	1.2
1	2048	70.0	9.38	9.5	-1.2	9.0	4.1
1	1448	80.0	11.20	11.5	-2.7	10.5	6.3
2	1024	3.65	13.77	14.0	-1.7	13.0	5.6
2	724	4.60	17.40	18.0	-3.4	17.0	2.3
2	512	5.70	22.54	23.0	-2.1	22.0	2.4
2	362	7.30	29.80	30.0	-0.7	28.5	4.4
3	256	0.038	40.07	40.0	0.2	39.5	1.4
3	181	0.051	54.61	54.5	0.2	53.5	2.0
3	128	0.069	75.15	75.5	-0.5	74.5	0.9
3	91	0.089	14.66	14.5	1.1	14.5	1.1
3	64	0.119	18.73	18.5	1.3	18.0	3.9
3	45	0.165	24.53	24.0	2.2	24.0	2.2
3	32	0.235	32.47	32.5	-0.1	32.0	1.4
3	23	0.320	43.22	43.0	0.5	43.0	0.5
3	16	0.450	59.94	59.0	1.6	59.0	1.6

low dilution cal gas

THC Analyzer Model

COE 20055

NOTE: Expected THC includes the background air THC which was 5.0

**NOTE : Drum pressure must be 40 psi before introducing the sampl**



## Odour Room Calibration Measurement of Odour Station Flowrates

Date: 11.08.20Operator: R. WhittenAmbient Temp: 24 °C 297.15 KBar. Pressure: 29.33 in. of Hg 743.49 mm of HgFlowrate Model: DocCal.Dadna020.05N# 143179Length of Tygon Tubing: DirectRotameter Flowrate: Channel A: FM(A) = 20 lpm  
Channel B: FM(B) = 20 lpmRotameter Setting: Channel A: 4.3  
Channel B: 4.4

Station	Channel A			Channel B		
	Measured Flowrate (lpm)	Actual Flowrate* (lpm)	Percentage Difference**	Measured Flowrate (lpm)	Actual Flowrate* (lpm)	Percentage Difference**
1	22.390	19.371	-12.6	22.990	20.121	-12.5
2	22.595	19.888	-12.4	23.000	20.244	-12.4
3	23.240	20.453	-12.4	22.740	20.013	-12.4
4	21.840	19.223	-12.4	22.790	20.039	-12.4
5	22.230	19.364	-12.4	23.480	20.666	-12.4
6	22.490	19.793	-12.4	23.080	20.314	-12.4
7	22.680	20.226	-12.4	23.160	20.383	-12.4
8	21.630	19.320	-12.4	23.620	20.174	-12.4
Average	22.46	19.753		23.004	20.247	

**Calculations:**

Correction Factor to 21.1°C and 753 mmHg:

$$Ct = (P/P_0)(T_0/T)^{1.25} = \underline{0.992}$$

Total Measured Flowrate:  
(corrected to 21.1°C and 753 mmHg)

$$\text{Channel A: } FC(A) = (\text{Average Measured Flowrate(A)} \times Ct) = \underline{22.04}$$

$$\text{Channel B: } FC(B) = (\text{Average Measured Flowrate(B)} \times Ct) = \underline{22.92}$$

Resistance Factor:

$$\text{Channel A: } R_a = \frac{FC(A)}{FM(A)} = \underline{1.10}$$

$$\text{Channel B: } R_b = \frac{FC(B)}{FM(B)} = \underline{1.15}$$

$$\text{Average: } R_{avg} = \frac{(R_a + R_b)}{2} = \underline{1.12}$$

\* Actual Flowrate = (Measured Flowrate \* Ct) / Average Resistance Factor

\*\* Percentage Difference = [(Actual Flowrate - FM(A)) / FM(A)] \* 100

**Quality Assurance:**

- Do  $R_a$  and  $R_b$  differ by  $> \pm 2\%$ ? No
- Are there any percentage differences  $> \pm 10\%$ ? No

## Appendix B – Jerome 631-X and OdaLog Calibration Certificates



## INSTRUMENT CALIBRATION REPORT

**Pine Environmental Services LLC**

92 North Main St, Building 20  
Windsor, NJ 08561  
Toll-free: (800) 301-9663

### Pine Environmental Services, Inc.

**Instrument ID** 37588  
**Description** OdaLog H2S (0-200ppm) gas monitor  
**Calibrated** 11/19/2020 4:28:49PM

<b>Manufacturer</b> Pine Environmental Services, Inc.	<b>State Certified</b>
<b>Model Number</b> LL-H2S-200-ND	<b>Status</b> Pass
<b>Serial Number/ Lot Number</b> 12609437	<b>Temp °C</b> 22.8
<b>Location</b> New Jersey	<b>Humidity %</b> 19
<b>Department</b>	

#### Calibration Specifications

<b>Group #</b> 1	<b>Range Acc %</b> 0.0000
<b>Group Name</b> Hydrogen Sulfide (H2S)	<b>Reading Acc %</b> 3.0000
<b>Stated Accy</b> Pct of Reading	<b>Plus/Minus</b> 0

<u>Nom In Val / In Val</u>	<u>In Type</u>	<u>Out Val</u>	<u>Out Type</u>	<u>Fnd As</u>	<u>Lft As</u>	<u>Dev%</u>	<u>Pass/Fail</u>
25 / 25	PPM	25	PPM	25	25	0.00%	Pass

#### Test Instruments Used During the Calibration

(As Of Cal Entry Date)

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>Last Cal Date / Opened Date</u>	<u>Next Cal Date / Expiration Date</u>
NJ 4 GAS 20.9%: DBJ-412-3	4GAS 20.9% O2, 25H2S, 50CO, 50LEL	Pine Environmental Services, Inc.	32211	DBJ-412-3	5/19/2020	3/11/2021

#### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Silas Saye

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

**Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment**  
**Please call 800-301-9663 for Technical Assistance**





# INSTRUMENT CALIBRATION REPORT

**Pine Environmental Services LLC**

3470 Gardner Court  
Burnaby, BC V5G 3K4  
Toll-free: (877) 678-8383

## Pine Environmental Services, Inc.

**Instrument ID** R9173  
**Description** Jerome 631-X  
**Calibrated** 11/10/2020 2:01:20PM

<b>Manufacturer</b> Arizona	<b>State Certified</b>
<b>Model Number</b> 631-X	<b>Status</b> Pass
<b>Serial Number/ Lot Number</b> 2377	<b>Temp °C</b> 22
<b>Location</b> British Columbia	<b>Humidity %</b> 31
<b>Department</b>	

### Calibration Specifications

**Group #** 1  
**Group Name** REGEN / ZERO CHECK  
**Test Performed:** Yes      **As Found Result:** Pass      **As Left Result:** Pass

### Test Instruments Used During the Calibration

(As Of Cal Entry Date)

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>Last Cal Date/ Opened Date</u>	<u>Next Cal Date / Expiration Date</u>
-------------------------	--------------------	---------------------	---------------------	-----------------------------------	-----------------------------------	--

### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Val Eftenaru

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

**Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment**  
**Please call 800-301-9663 for Technical Assistance**



Harbour Resource Partners

450-1675 Douglas Street

Victoria, B.C. V8W 2G5



## **McLoughlin Point Wastewater Treatment Plant**

CRD Contract No: CAWTP-17-006

Submittal No: AGJV-RPT-ACC TEST-05

# **Conditional Acceptance Supplemental Summer Odour Information**

Quality Information

Prepared by	Checked by	QA/QC Approved by	Director Approved by
_____ David Houghton _____	_____ Susan Spruston Randy Craig _____	_____ Randy Pointkoski _____	_____ Jeremy Klarenbach _____

Revision History

Revision	Revision Date	Details	Name	Position
0	2021-08-13	Issued for Consent	David Houghton	Resident Engineer



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# 1. Acceptance Test Report

The Acceptance Test Report addresses the following deliverables from the Project Agreement:

Item	Description	Required by	Date Submitted	Review Type
1	Acceptance Test Report	Section 9.12 of Schedule 5 [Design and Construction Protocols]		Consent



## 2. Definitions

"Agreement"	means the Project Agreement, including any recitals, Schedules and Appendices to the Project Agreement, as amended, supplemented or restated from time to time;
"Acceptance"	means the issuance of the Certificate of Acceptance by the Independent Certifier;
"Acceptance Date"	means the earlier of either of the date: (a) the Certificate of Acceptance is issued, and, (b) the Certificate of Conditional Acceptance is issued;
"Acceptance Date Conditions"	has the meaning set out in Section 9.13 of Schedule 5 [Design and Construction Protocols];
"Acceptance Protocol"	has the meaning given in Section 1.1(a)(3) of Appendix 5–C [Equipment and Furniture] of Schedule 5 [Design and Construction Protocols];
"Acceptance Standards"	means the standards for Acceptance set out in Section 9.11 [Acceptance Standards] of Schedule 5 [Design and Construction Protocols];
"Acceptance Test"	means all testing required to achieve Acceptance, as described in Section 9 [Start-Up, Commissioning and Acceptance] of Schedule 5 [Design and Construction Protocols];
"Acceptance Test Plan"	has the meaning set out in Section 9.8 of Schedule 5 [Design and Construction Protocols];
"Acceptance Testing"	means all work, activities and tasks HRP is required to undertake or perform in carrying out and successfully completing the Acceptance Test;
"BIM"	means Building Information Modeling system which complies with the 'CRD Wastewater Treatment Project – CAD Drawings/Digital Mapping Drafting Standards v3.0, dated March 24, 2017.' and response to RFI 4 dated June 15, 2017;
"BOD <sub>5</sub> "	means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;
"cBOD <sub>5</sub> "	means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;
"CEPT"	means Chemically Enhanced Primary Treatment;
"District"	means the Capital Regional District;
"Effective Date"	means the date of the Project Agreement;
"Effluent"	means all treated wastewater discharged from the Plant through the Outfall to the ocean;
"Facilities"	means the Plant, Harbour Crossing and Outfall, including all associated buildings, structures, site work, offsite utility connections and extensions, systems, equipment, supplies and infrastructure, all other civil, structural, mechanical,



electrical, instrumentation and other equipment and systems, and all landscaping and other improvements, in each case to be designed, constructed and installed by HRP pursuant to the Agreement;

- "HRP" means Harbour Resource Partners Limited Partnership;
- "Project" means the design, construction, financing, testing and commissioning of the Facilities and all other works and services required under this Agreement;
- "Project Agreement" means the Agreement for the McLoughlin Point Wastewater Treatment Plant Project between the Capital Regional District and Harbour Resource Partners Limited Partnership, as dated March 14, 2017;
- "Staffing Plan" "Staffing Plan" means the staffing plan prepared by HRP and set out in Appendix 7-A [Staffing Plan] of Schedule 7 [Performance Protocols];
- "TSS" means Total Suspended Solids, a measure of the suspended solids in wastewater, effluent, or water bodies, determined by tests for "total suspended non-filterable solids."
- "Wet Weather Event" has the meaning set out in Section 9.16 [Conditional Acceptance] of Schedule 5 [Design and Construction Protocols];
- "Wet Weather Event Acceptance Standards" has the meaning set out in Section 8 [Wet Weather Event Acceptance Standards] of Appendix 5-B [Acceptance Standards] of Schedule 5 [Design and Construction Protocols];





### 3. Introduction

This Conditional Acceptance Supplement documents the work, activities and tasks that HRP has undertaken to complete the Phase 2 Summer Weather Odour Control Test in accordance with the Project Agreement. The Summer Weather Odour Control Test was conducted from 7:00 pm, July 27<sup>th</sup> to 10:30 am, July 28<sup>th</sup>, 2021.

### 4. Summary of Conditional Acceptance Test

The following table summarizes the general information and operating conditions for the test that HRP has undertaken to supplement the Conditional Acceptance.

Test	General Area of Testing	Acceptance Requirement & Operational Conditions
<b>Odour Control System Acceptance Testing</b>		
	Warm Period Test	3 Samples July, August, or September Daily maximum ambient temperature of 20°C or higher



## 5. Seasonal Odour Control Testing Results

The following is a summary of the Summer Weather Odour Control Testing results for the tests that were performed in accordance with Section 15 of the Acceptance Test Plan.

### 5.1 Phase 2 Odour Tests

#### 5.1.1 Summer Weather Seasonal Testing

Testing was completed while the plant was fully operational including both the primary and secondary odour control systems.

Summer weather test sampling was conducted at three times from 7:00 pm, July 27<sup>th</sup> to 10:30 am, July 28<sup>th</sup>, 2021. Weather records for Esquimalt, BC showed that the daily maximum ambient temperature was 20°C or higher on both days of the test.



VICTORIA HARBOUR A  
BRITISH COLUMBIA  
Current Station Operator: NAVCAN

Latitude:	48°25'22.000" N	Longitude:	123°23'15.000" W	Elevation:	
Climate ID:	1018633	WMO ID:		TC ID:	YWH

Daily Data Report for July 2021

DAY	Max Temp	Min Temp	Mean Temp	Heat Deg Days	Cool Deg Days	Total Rain	Total Snow	Total Precip	Snow on Grnd	Dir of Max Gust	Spd of Max Gust
	°C	°C	°C	h	h	mm	cm	mm	cm	10's deg	km/h
01	18.6	12.6	15.6	2.4	0.0			M			
02	18.6	13.6	16.1	1.9	0.0			M			
03	19.1	13.2	16.2	1.8	0.0			M			
04	21.8	12.6	17.2	0.8	0.0			M		22	36
05	19.0	13.1	16.1	1.9	0.0			M		22	35
06	20.3	12.4	16.4	1.6	0.0			M			
07	17.1	13.4	15.3	2.7	0.0			M		22	45
08	17.8	12.2	15.0	3.0	0.0			M		22	35
09	18.3	12.2	15.3	2.7	0.0			M		22	35
10	18.5	12.4	15.5	2.5	0.0			M		22	37
11	19.8	12.4	16.1	1.9	0.0			M		23	33
12	21.3	12.4	16.9	1.1	0.0			M		22	33
13	19.9	13.0	16.5	1.5	0.0			M		24	33
14	17.1	12.1	14.6	3.4	0.0			M		22	41
15	17.6	12.4	15.0	3.0	0.0			M		25	46
16	18.0	12.5	15.3	2.7	0.0			M		22	39
17	17.9	12.5	15.2	2.8	0.0			M		21	41
18	18.7	12.4	15.6	2.4	0.0			M			
19	20.1	12.8	16.5	1.5	0.0			M		21	41
20	19.1	14.3	16.7	1.3	0.0			M		24	44
21	19.6	13.2	16.4	1.6	0.0			M		23	47
22	18.2	13.0	15.6	2.4	0.0			M		21	37
23	19.6	13.2	16.4	1.6	0.0			M		21	34
24	20.8	13.2	17.0	1.0	0.0			M		21	36
25	24.0	12.7	18.4	0.0	0.4			M		23	42
26	23.7	12.5	18.1	0.0	0.1			M		24	37
27	20.6	12.2	16.4	1.6	0.0			M		23	35
28	21.0	13.6	17.3	0.7	0.0			M			
29	20.5	12.6	16.6	1.4	0.0			M			
30	21.2	12.7	17.0	1.0	0.0			M			
31	21.1	13.5	17.3	0.7	0.0			M			
Sum				54.9	0.5			M			
Avg	19.6	12.8	16.3								
Xtrm	24.0	12.1								23^	47^

Summary, average and extreme values are based on the data above.

Figure 5-1: Historical Hourly Weather – Victoria Harbour (climate.weather.gc.ca)



Sample times were chosen to include the time of maximum and minimum hydrogen sulfide load and a time in between, as determined by the seven days of continuous hydrogen sulfide monitoring conducted between June 29<sup>th</sup> and July 6<sup>th</sup>, 2021. Plots of inlet H<sub>2</sub>S concentration and temperature measurements, recorded at one minute intervals, for the primary and secondary odour control systems are shown in Figure 5-2 and Figure 5-3. Peak loading times are shaded in red and minimum loading times are shaded in green.

During the summer test the primary odour control system is under peak loading between 6 pm and 10 pm and minimum loading between 5 pm and 9 am. The secondary odour control system peak loading occurs between 4 pm and 8 pm and minimum loading occurs between 4 am and 8 am.

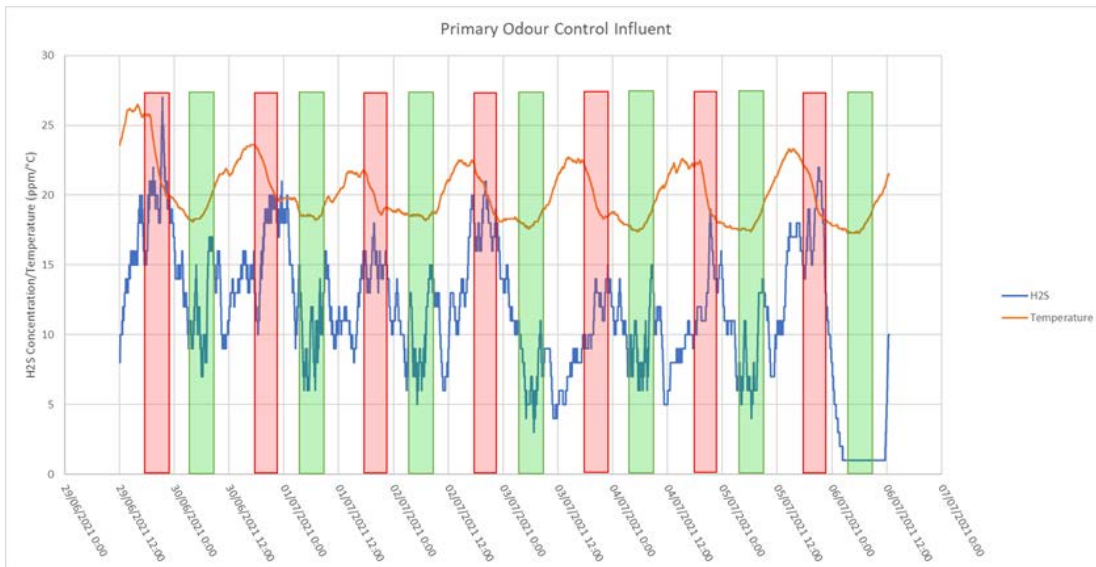


Figure 5-2: Primary Odour Continuous H<sub>2</sub>S Inlet Concentrations

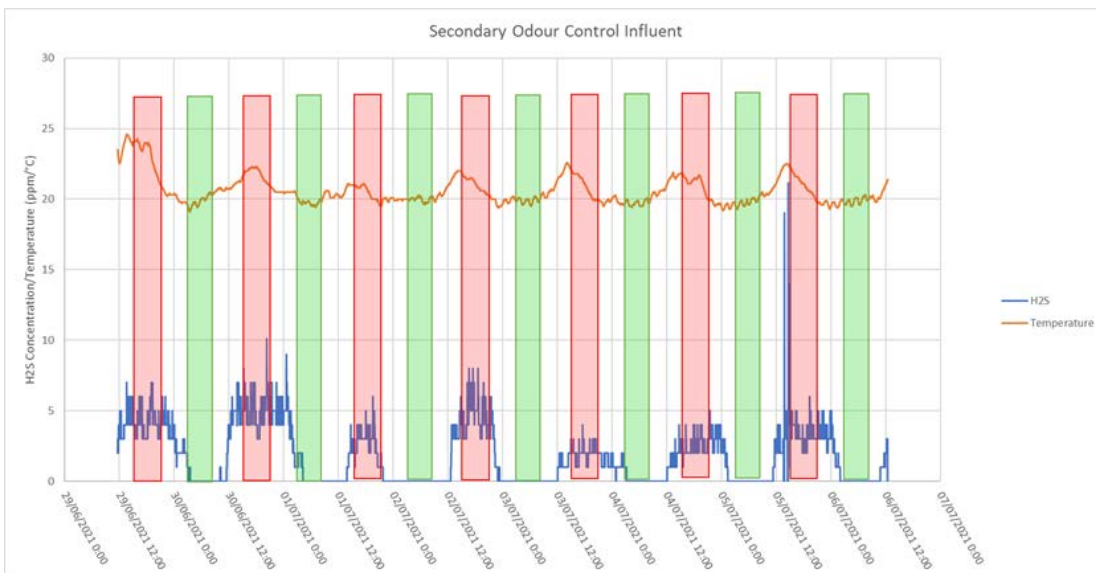


Figure 5-3: Secondary Odour Continuous H<sub>2</sub>S Inlet Concentrations



Summer weather odour testing occurred when the Plant was fully operational including both the primary and secondary odour control systems.

Influent and effluent samples for each system for both H<sub>2</sub>S and Total Odour were taken within one hour of each other. In situ H<sub>2</sub>S concentrations were measured in triplet using a Jerome H<sub>2</sub>S analyzer for both inlet and outlet streams. The Jerome H<sub>2</sub>S readings are presented in Table 5-1 and Table 5-2. Total Odour samples were collected into Tedlar bags using a lung pump and shipped to ORTECH Consulting Ltd. for analysis on the morning of July 29<sup>th</sup>, 2021. The odour panel analysis report is provided in Appendix A.

**Table 5-1: Primary Odour Control H<sub>2</sub>S Measurements**

Sample Location:		Primary Foul Air											
Test	Influent Sample Date	Influent Sample Time	Influent H <sub>2</sub> S				Effluent Sample Date	Effluent Sample Time	Effluent H <sub>2</sub> S				
Units			ppm						ppm				
Type			1	2	3	Average			1	2	3	Average	
1	27/07/2021	7:46 PM	13	13	14	13.3	27/07/2021	7:35 PM	0.051	0.046	0.043	0.047	
2	28/07/2021	6:48 AM	8.7	8.2	8.9	8.6	28/07/2021	6:41 AM	0.044	0.041	0.038	0.041	
3	28/07/2021	10:04 AM	10.7	11.3	11.1	11.0	28/07/2021	9:56 AM	0.17	0.14	0.13	0.15	

**Table 5-2: Secondary Odour Control H<sub>2</sub>S Measurements**

Sample Location:		Secondary Foul Air											
Test	Influent Sample Date	Influent Sample Time	Influent H <sub>2</sub> S				Effluent Sample Date	Effluent Sample Time	Effluent H <sub>2</sub> S				
Units			ppm						ppm				
Type			1	2	3	Average			1	2	3	Average	
1	27/07/2021	7:20 PM	4.6	4.3	4.4	4.4	27/07/2021	7:05 PM	0.097	0.092	0.094	0.094	
2	28/07/2021	6:23 AM	1.3	1.4	1.3	1.3	28/07/2021	6:15 AM	0.067	0.074	0.073	0.071	
3	28/07/2021	9:28 AM	2	1.6	1.7	1.8	28/07/2021	9:36 AM	0.082	0.074	0.078	0.078	

A summary of results of the effluent sampling program are presented in Table 5-3 and Table 5-4.

**Table 5-3: Primary Odour Control Results Summary**

Sample Location:		Primary Foul Air									
Test	Influent Sample Date	Influent Sample Time	Influent H <sub>2</sub> S	Influent Odour	Effluent Sample Date	Effluent Sample Time	Influent H <sub>2</sub> S	Influent Odour	H <sub>2</sub> S Removal Efficiency	Odour Removal Efficiency	
Units			ppm	OU			ppm	OU	%	%	
Type			Grab	Grab			Grab	Grab			
1	27/07/2021	7:46 PM	13.3	43052	27/07/2021	7:35 PM	0.047	369	99.7%	99.1%	
2	28/07/2021	6:48 AM	8.6	40550	28/07/2021	6:41 AM	0.041	304	99.5%	99.3%	
3	28/07/2021	10:04 AM	11.0	42257	28/07/2021	9:56 AM	0.147	299	98.7%	99.3%	
Count	-	-	3	3	-	-	3	3	3	3	
Minimum	-	-	8.6	40550	-	-	0.041	299	98.7%	99.1%	
Maximum	-	-	13.3	43052	-	-	0.147	369	99.7%	99.3%	
Average	-	-	11.0	41953	-	-	0.078	324	99.3%	99.2%	
Standard Deviation	-	-	1.9	1044	-	-	0.049	32	0.4%	0.1%	

**Table 5-4: Secondary Odour Control Results Summary**

Sample Location:		Secondary Foul Air								
Test	Influent Sample Date	Influent Sample Time	Influent H <sub>2</sub> S ppm	Influent Odour OU	Effluent Sample Date	Effluent Sample Time	Effluent H <sub>2</sub> S ppm	Effluent Odour OU	H <sub>2</sub> S Removal Efficiency %	Odour Removal Efficiency %
Units			Grab	Grab			Grab	Grab		
Type										
1	27/07/2021	7:20 PM	4.4	27044.00	27/07/2021	7:05 PM	0.094	488.0	97.9%	98.2%
2	28/07/2021	6:23 AM	1.3	28673.00	28/07/2021	6:15 AM	0.071	353.0	94.7%	98.8%
3	28/07/2021	9:28 AM	1.8	29152.00	28/07/2021	9:36 AM	0.078	416.0	95.6%	98.6%
Count	-	-	3	3	-	-	3	3	3	3
Minimum	-	-	1.3	27044	-	-	0.071	353	94.7%	98.2%
Maximum	-	-	4.4	29152	-	-	0.094	488	97.9%	98.8%
Average	-	-	2.5	28290	-	-	0.081	419	96.0%	98.5%
Standard Deviation	-	-	1.4	902	-	-	0.010	55	1.4%	0.2%

The results exceed the performance requirements of the Summer Weather Odour Control Test as summarized in Table 5-5. The acceptance of the Phase 2 Summer Weather Odour Control Test has been achieved as follows:

For the Primary Odour Control System test the minimum H<sub>2</sub>S removal observed was 98.7% and the maximum H<sub>2</sub>S concentration observed was 0.147 ppm, this exceeds the performance requirement of either 99% removal or < 0.5ppm H<sub>2</sub>S, whichever is greater. For the primary system the maximum H<sub>2</sub>S concentration was met in all cases although the system did not meet the H<sub>2</sub>S removal efficiency requirement in one of the three samples sets. The minimum total odour removal observed during the test was 99.1% which exceeds the required performance of 95% removal.

For the Secondary Odour Control System test the minimum H<sub>2</sub>S removal observed was 94.7% and the maximum H<sub>2</sub>S concentration observed was 0.094 ppm, this exceeds the performance requirement of either 99% removal or < 0.1 ppm H<sub>2</sub>S, whichever is greater. For the secondary system the maximum H<sub>2</sub>S concentration was met in all cases although the system did not meet the H<sub>2</sub>S removal efficiency requirement in all three samples sets. This meets the performance requirement as the effluent H<sub>2</sub>S concentration was below 0.1 ppm in all cases. The minimum total odour removal observed during the test was 98.2% which exceeds the required performance of 95% removal.

**Table 5-5: Summer Weather Odour Control Performance Summary**

Parameter	Required Performance	Achieved Performance
<b>Primary Odour Control System</b>		
H <sub>2</sub> S Removal:	99 % (or outlet H <sub>2</sub> S concentrations 0.5 ppm, whichever is greater)	Minimum removal: 98.7 % Maximum outlet H <sub>2</sub> S: 0.147 ppm
Total Odour Removal:	95 %	Minimum removal: 99.1%
<b>Secondary Odour Control System</b>		
H <sub>2</sub> S Removal:	99 % or an outlet concentration of 0.1 ppm H <sub>2</sub> S, whichever is greater	Minimum removal: 94.7 % Maximum outlet H <sub>2</sub> S: 0.094 ppm
Total Odour Removal:	95 %	Minimum removal: 98.2 %

## 6. Conditional Acceptance

With the completion of the Phase 2 Summer Weather Odour Control Test the Facility has achieved all acceptance test criteria.



## Appendix A – Independent Laboratory Results





# Report:

AECOM  
Odour Analysis of Air Samples

Date: August 9, 2021



# Report:

AECOM

## Odour Analysis of Air Samples

Submitted to: David Houghton  
 AECOM  
 British Columbia  
 E-mail: [david.houghton@aecom.com](mailto:david.houghton@aecom.com)

Prepared by: Robert Whitten, BES  
 Project Manager, Odour and Analytical Services  
 ORTECH Consulting Inc.  
 804 Southdown Rd., Mississauga, Ontario L5J 2Y4  
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 E-mail: [rwhitten@ortech.ca](mailto:rwhitten@ortech.ca)

Report No.: 26818  
 7 pages, 2 Appendices

### Revision History

Version	Date	Summary Changes/Purpose of Revision
1	August 9, 2021	None

### NOTICE:

This report was prepared by ORTECH Consulting Inc. (ORTECH) solely for the Client identified above and is to be used exclusively for the purposes set out in the report. The material in this report reflects the judgment of ORTECH based on information available to them at the time of preparation. Unless manifestly incorrect, ORTECH assumes information provided by others is accurate. Changed conditions or information occurring or becoming known after the date of this report could affect the results and conclusions presented. Unless otherwise required by law or regulation, this report shall not be shared with any Third Party without the express written consent of ORTECH. ORTECH accepts no responsibility for damages, if any, suffered by any Third Party which makes use of the results and conclusions presented in this report.

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## 1. INTRODUCTION

At the request of AECOM, ORTECH Consulting Inc. (ORTECH) conducted evaluations on twelve (12) Tedlar bag samples for odour detection threshold value (ODTV). Twelve (12) bags were received by ORTECH on July 29<sup>th</sup> and were evaluated the same day. All samples were received in good condition. Upon receiving the samples it was determined that the six (6) samples labelled “Inlet” required pre-dilution prior to analysis. These samples were diluted 50x using pure high grade nitrogen.

## 2. METHODOLOGY

### 2.1 Odour Analysis

The odour samples were evaluated the morning of the day that they were received by the dynamic dilution olfactometer at the ORTECH odour test facility, based on **European Standard EN 13725:2003, Air Quality – Determination of odour concentration by dynamic olfactometry**. This facility is a specialized room, designed to provide an odour-free environment for accurate evaluations.

The olfactometer is a binary port system operated in a forced choice mode. The sample bag is pressurized in a pressure vessel, and the resulting flow metered through an electronic mass flow controller at a predetermined rate. The sample is diluted with flow-controlled odourless air, and is passed to the panel members through one of two sample ports. A three-way valve allows the operator to direct the sample through either of the two ports.

Each evaluation began at a high dilution level, which was lowered in a step-wise sequence by a factor of 1.41 at each step. At each dilution level, the panelists registered their responses by entering the letter of the port at which they detected the odour, if any. The upper range of dilution ratios of the ORTECH olfactometer is 5,793 times.

The panelist responses were processed to determine the ODTV for the sample. This is done by a regression analysis of the log of the dilution level versus the probit value of the percent of the panel responding. The point at which statistically 50% of the panel can just detect the odour is recorded as the effective dilution to 50% response or the ODTV. The odour threshold value is a dilution factor and, therefore, has no units. For convenience, however, the ODTV may be expressed in odour units (ou).

An odour panel with eight members was used for the evaluations. They are drawn from a pool of people who routinely participate in this type of work. They have all been tested periodically for odour sensitivity and are considered to be within the normal range.

Upon receiving the samples it was determined that the samples labelled Inlet required pre-dilution prior to analysis. These samples were diluted 50x with a dilution odour sampler using pure high grade nitrogen.

### 3. RESULTS

#### 3.1 Odour Analysis

The individual odour panelist results for each sample evaluated are shown in Appendix 1. Twelve (12) odour samples were evaluated. Raw ODTV and net ODTV for these samples are shown in Table 1. The raw ODTV was multiplied by the pre-dilution ratio to obtain the net ODTV. For those samples which were not pre-diluted, the pre-dilution ratio is shown as one. The odour removal efficiencies for each set of tests were also calculated and are presented in Table 2.

An olfactometer system blank of pure high grade nitrogen was also analyzed and is reported in Table 1 and Appendix 1. Calibration data for the olfactometer is provided in Appendix 2.



Rob Whitten, BES., QSTI  
Project Manager, Odor/Analytical Services

RW:or

**TABLE 1**  
**Odour Results**

Sample Name	Sample ID	Sample Time		Sample Date	Raw ODTV ou	Predilution Ratio	Net ODTV ou
		Start	Stop				
Primary Influent High	101	7:46pm	7:50pm	27-Jul-21	861.0	50	<b>43052</b>
Primary Effluent High	102	7:35pm	7:39pm	27-Jul-21	368.8	1	<b>369</b>
Primary Influent Low	103	6:48am	6:53am	28-Jul-21	811.0	50	<b>40550</b>
Primary Effluent Low	104	6:41am	6:45am	28-Jul-21	304.4	1	<b>304</b>
Primary Influent Mid	105	10:04am	10:08am	28-Jul-21	845.1	50	<b>42257</b>
Primary Effluent Mid	106	9:56am	9:59am	28-Jul-21	298.8	1	<b>299</b>
Secondary Influent High	201	7:20pm	7:22pm	27-Jul-21	540.9	50	<b>27044</b>
Secondary Effluent High	202	7:05pm	7:08pm	27-Jul-21	487.9	1	<b>488</b>
Secondary Influent Low	203	6:23am	6:27am	28-Jul-21	573.5	50	<b>28673</b>
Secondary Effluent Low	204	6:15am	6:18am	28-Jul-21	353.4	1	<b>353</b>
Secondary Influent Mid	205	9:28am	9:32am	28-Jul-21	583.0	50	<b>29152</b>
Secondary Effluent Mid	206	9:36am	9:40am	28-Jul-21	415.5	1	<b>416</b>
System Blank Nitrogen				29-Jul-21	<16	1	<b>&lt;16</b>

ou = odour units

<16 = below detection limit

**TABLE 2**  
**Odour Removal Efficiencies**

<b>Location</b>	<b>Sample Date</b>	<b>Removal Efficiency %</b>
Primary High	27-Jul-21	<b>99.1</b>
Primary Low	28-Jul-21	<b>99.2</b>
Primary Mid	28-Jul-21	<b>99.3</b>
Secondary High	27-Jul-21	<b>98.2</b>
Secondary Low	28-Jul-21	<b>98.8</b>
Secondary Mid	28-Jul-21	<b>98.6</b>

**APPENDIX 1**

**ODTV Results  
(13 pages)**



AECOM

July 27 2021

26818

McLoughlin Point WWTP

Primary Influent High

101

Panelists: 8

OTV = 861.032

Dilution: 50

QTV\*Dilution = 43052

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	3	37.5%	4.680
724	2.8597	5	62.5%	5.320
512	2.7093	8	100.0%	7.500
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09263634

Constant (y-intercept) 3.39820095

Std Err of Y Est 0.04600941

r Squared 0.96261932

No. of Observations 4

log(OTV) 2.93501926

OTV 861.031939

AECOM

July 27 2021

26818

McLoughlin Point WWTP

Primary Effluent High

102

Panelists: 8  
 OTV = 368.834  
 Dilution: 1  
 QTV\*Dilution = 369

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	0	0.0%	2.500
512	2.7093	2	25.0%	4.330
362	2.5587	5	62.5%	5.320
256	2.4082	6	75.0%	5.670
181	2.2577	8	100.0%	7.500
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12662325  
 Constant (y-intercept) 3.19994729  
 Std Err of Y Est 0.05893853  
 r Squared 0.95399974  
 No. of Observations 5

log(OTV) 2.56683102  
 OTV 368.834057

AECOM

July 28 2021  
26818McLoughlin Point WWTP  
Primary Influent Low

103

Panelists: 8

OTV = 810.994

Dilution: 50

QTV\*Dilution = 40550

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	1	12.5%	3.845
724	2.8597	4	50.0%	5.000
512	2.7093	8	100.0%	7.500
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09004807

Constant (y-intercept) 3.35925825

Std Err of Y Est 0.04352472

r Squared 0.9665477

No. of Observations 4

log(OTV) 2.90901788

OTV 810.994446

AECOM

July 28 2021  
26818McLoughlin Point WWTP  
Primary Effluent Low

104

Panelists: 8

OTV = 304.421

Dilution: 1

QTV\*Dilution = 304

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	0	0.0%	2.500
362	2.5587	3	37.5%	4.680
256	2.4082	5	62.5%	5.320
181	2.2577	8	100.0%	7.500
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09265226

Constant (y-intercept) 2.94673556

Std Err of Y Est 0.0459575

r Squared 0.96271281

No. of Observations 4

log(OTV) 2.48347427

OTV 304.420761

AECOM

July 28 2021  
26818McLoughlin Point WWTP  
Primary Influent Mid

105

Panelists: 8

OTV = 845.149

Dilution: 50

QTV\*Dilution = 42257

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	0	0.0%	2.500
1024	3.0103	2	25.0%	4.330
724	2.8597	5	62.5%	5.320
512	2.7093	8	100.0%	7.500
362	2.5587	-1	-12.5%	#N/A
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.0924126

Constant (y-intercept) 3.38899614

Std Err of Y Est 0.03211034

r Squared 0.98179277

No. of Observations 4

log(OTV) 2.92693316

OTV 845.148761

AECOM

July 28 2021  
26818McLoughlin Point WWTP  
Primary Effluent Mid

106

Panelists: 8

OTV = 298.804

Dilution: 1

QTV\*Dilution = 299

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	-1	-12.5%	#N/A
512	2.7093	0	0.0%	2.500
362	2.5587	2	25.0%	4.330
256	2.4082	5	62.5%	5.320
181	2.2577	8	100.0%	7.500
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09242688

Constant (y-intercept) 2.93752134

Std Err of Y Est 0.03206004

r Squared 0.98185424

No. of Observations 4

log(OTV) 2.47538692

OTV 298.80435

AECOM

July 27 2021

26818

McLoughlin Point WWTP

Secondary Influent High

201

Panelists: 8

OTV = 540.878

Dilution: 50

QTV\*Dilution = 27044

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	2	25.0%	4.330
512	2.7093	5	62.5%	5.320
362	2.5587	7	87.5%	6.155
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.12131008

Constant (y-intercept) 3.33964953

Std Err of Y Est 0.04548186

r Squared 0.96348063

No. of Observations 4

log(OTV) 2.73309912

OTV 540.87775

AECOM

July 27 2021

26818

McLoughlin Point WWTP

Secondary Effluent High

202

Panelists: 8  
 OTV = 487.917  
 Dilution: 1  
 QTV\*Dilution = 488

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	1	12.5%	3.845
512	2.7093	4	50.0%	5.000
362	2.5587	5	62.5%	5.320
256	2.4082	8	100.0%	7.500
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.1251822  
 Constant (y-intercept) 3.31425699  
 Std Err of Y Est 0.05871091  
 r Squared 0.95435436  
 No. of Observations 5

log(OTV) 2.68834598  
 OTV 487.917029



AECOM

July 28 2021  
26818McLoughlin Point WWTP  
Secondary Influent Low

203

Panelists: 8

OTV = 573.455

Dilution: 50

QTV\*Dilution = 28673

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	1	12.5%	3.845
512	2.7093	4	50.0%	5.000
362	2.5587	8	100.0%	7.500
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09006129

Constant (y-intercept) 3.2088055

Std Err of Y Est 0.04350061

r Squared 0.96659299

No. of Observations 4

log(OTV) 2.75849907

OTV 573.454635

AECOM

July 28 2021

26818

McLoughlin Point WWTP

Secondary Effluent Low

204

Panelists: 8

OTV = 353.400

Dilution: 1

QTV\*Dilution = 353

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	0	0.0%	2.500
512	2.7093	2	25.0%	4.330
362	2.5587	4	50.0%	5.000
256	2.4082	6	75.0%	5.670
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.13715706

Constant (y-intercept) 3.23405142

Std Err of Y Est 0.06398773

r Squared 0.92769848

No. of Observations 4

log(OTV) 2.5482661

AECOM

July 28 2021

26818

McLoughlin Point WWTP

Secondary Influent Mid

205

Panelists: 8

OTV = 583.037

Dilution: 50

QTV\*Dilution = 29152

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	1	12.5%	3.845
512	2.7093	5	62.5%	5.320
362	2.5587	8	100.0%	7.500
256	2.4082	-1	-12.5%	#N/A
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.0900987

Constant (y-intercept) 3.21618968

Std Err of Y Est 0.02801774

r Squared 0.9861416

No. of Observations 4

log(OTV) 2.76569616

OTV 583.037058

AECOM

July 28 2021  
26818McLoughlin Point WWTP  
Secondary Effluent Mid

206

Panelists: 8

OTV = 415.530

Dilution: 1

QTV\*Dilution = 416

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	-1	-12.5%	#N/A
724	2.8597	0	0.0%	2.500
512	2.7093	2	25.0%	4.330
362	2.5587	4	50.0%	5.000
256	2.4082	8	100.0%	7.500
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) -0.09186059

Constant (y-intercept) 3.07790558

Std Err of Y Est 0.04969541

r Squared 0.95638996

No. of Observations 4

log(OTV) 2.61860262

OTV 415.530223

AECOM

July 29 2021  
26818McLoughlin Point WWTP  
System Blank Nitrogen

Panelists: 8

OTV = #DIV/0!

Dilution: 1

QTV\*Dilution = #DIV/0!

Dilution	Log (Dilution)	Number	Percent	Probit (r)
5793	3.7629	-1	-12.5%	#N/A
4096	3.6124	-1	-12.5%	#N/A
2896	3.4618	-1	-12.5%	#N/A
2048	3.3113	-1	-12.5%	#N/A
1448	3.1608	-1	-12.5%	#N/A
1024	3.0103	0	0.0%	2.500
724	2.8597	-1	-12.5%	#N/A
512	2.7093	-1	-12.5%	#N/A
362	2.5587	-1	-12.5%	#N/A
256	2.4082	0	0.0%	2.500
181	2.2577	-1	-12.5%	#N/A
128	2.1072	-1	-12.5%	#N/A
91	1.9590	-1	-12.5%	#N/A
64	1.8062	-1	-12.5%	#N/A
45	1.6532	-1	-12.5%	#N/A
32	1.5051	-1	-12.5%	#N/A
23	1.3617	-1	-12.5%	#N/A
16	1.2041	-1	-12.5%	#N/A
11	1.0414	-1	-12.5%	#N/A
8	0.9031	-1	-12.5%	#N/A
6	0.7782	-1	-12.5%	#N/A
5	0.6990	-1	-12.5%	#N/A
4	0.6021	-1	-12.5%	#N/A
3	0.4771	-1	-12.5%	#N/A
2	0.3010	-1	-12.5%	#N/A

x coefficient (slope) #DIV/0!

Constant (y-intercept) #DIV/0!

Std Err of Y Est #DIV/0!

r Squared #DIV/0!

No. of Observations 2

log(OTV) #DIV/0!

OTV #DIV/0!

**APPENDIX 2**

**Calibration Sheets  
(2 pages)**

Mykrolis MFCs  
 System Check by THC Analyzer

 Date February 23, 2021  
 Operator RW

 Rotameter A 4.4 Rotameter B 4.5 Regulator Psi: 75.0 psi  
 Total Flow 160 LPM Flow per Port 20 LPM Background Air THC 4.5  
 Calibration Gas Concentration 2993.0 ppm propane 8979.0 ppm methane  
 Low Dilution Gas Concentration 293.0 ppm propane 879.0 ppm methane

Signature \_\_\_\_\_

Flow Controller	Dilution Level	Controller Setting	Expected THC ppm	Port A		Port B	
				Measured THC ppm	Percent Difference	Measured THC ppm	Percent Difference
1	4096	50.0	6.69	6.5	2.9	6.5	2.9
1	2896	56.5	7.60	7.5	1.3	7.5	1.3
1	2048	64.0	8.88	9.0	-1.3	9.0	-1.3
1	1448	75.0	10.70	10.5	1.9	10.5	1.9
2	1024	3.50	13.27	13.0	2.0	12.5	5.8
2	724	4.50	16.90	17.0	-0.6	17.0	-0.6
2	512	5.40	22.04	23.0	-4.4	21.0	4.7
2	362	7.00	29.30	28.0	4.4	29.5	-0.7
2	256	9.100	39.57	40.0	-1.1	38.0	4.0
3	181	0.045	54.11	55.0	-1.6	53.0	2.0
3	128	0.065	74.65	77.0	-3.2	73.5	1.5
3	91	0.084	14.16	14.0	1.1	13.5	4.7
3	64	0.125	18.23	18.0	1.3	18.0	1.3
3	45	0.170	24.03	24.0	0.1	23.5	2.2
3	32	0.240	31.97	32.0	-0.1	31.5	1.5
3	23	0.330	42.72	43.0	-0.7	42.0	1.7
3	16	0.475	59.44	60.0	-0.9	59.0	0.7

low dilution cal gas

THC Analyzer Model

COE 20055

NOTE: Expected THC includes the background air THC which was 4.5

**NOTE : Drum pressure must be 40 psi before introducing the sample**



## Odour Room Calibration Measurement of Odour Station Flowrates

Date: 22-Feb-20Operator: R. WhittenAmbient Temp: 21.5 °C      294.65 KBar. Pressure: 29.09 In. of Hg      738.886 mm of HgFlowmeter Model: DryCal Definer220 SN# 143179Length of Tygon Tubing: DirectRotameter Flowrate: Channel A: FM(A)= 20 lpmRotameter Setting: Channel A: 4.4Channel B: FM(B)= 20 lpmChannel B: 4.5

Station	Channel A			Channel B		
	Measured Flowrate (lpm)	Actual Flowrate* (lpm)	Percentage Difference**	Measured Flowrate (lpm)	Actual Flowrate* (lpm)	Percentage Difference**
1	22.523	20.065	0.32	22.639	20.168	0.84
2	22.644	20.173	0.86	22.523	20.065	0.32
3	21.952	19.556	-2.22	22.425	19.977	-0.11
4	22.038	19.633	-1.84	22.479	20.026	0.13
5	22.337	19.899	-0.50	22.625	20.156	0.78
6	22.336	19.898	-0.51	22.936	20.433	2.16
7	22.547	20.086	0.43	22.828	20.336	1.68
8	21.831	19.448	-2.76	22.542	20.082	0.41
Average	22.276	19.845		22.625	20.155	

**Calculations:**

Correction Factor to 21.1°C and 751 mm Hg:

$$Ct = (294/\text{Amb. Temp.}) * (\text{Bar. Pres.}/751) = \underline{0.982}$$

Total Measured Flowrate:

(corrected to 21.1°C and 751 mm Hg)

Channel A: FC(A) = (Average Measured Flowrate(A)\*Ct) = 21.87

Channel B: FC(B) = (Average Measured Flowrate(B)\*Ct) = 22.21

Resistance Factor:

Channel A: Ra = FC(A)/FM(A) = 1.09

Channel B: Rb = FC(B)/FM(B) = 1.11

Average: Ravg = (Ra+Rb)/2 = 1.10

\* Actual Flowrate = (Measured Flowrate\*Ct)/Average Resistance Factor

\*\* Percentage Difference = [(Actual Flowrate - FM(A))/FM(A)]\*100

**Quality Assurance:**

1. Do Ra and Rb differ by > +/- 2%? No
2. Are there any percentage differences > +/- 10%? No



## Appendix B – Jerome 631-X and OdaLog Calibration Certificates



# INSTRUMENT CALIBRATION REPORT

**Pine Environmental Services LLC**

92 North Main St, Building 20  
Windsor, NJ 08561  
Toll-free: (800) 301-9663

## Pine Environmental Services, Inc.

**Instrument ID** R9173  
**Description** Jerome 631-X  
**Calibrated** 5/21/2021 3:16:04PM

<b>Manufacturer</b> Arizona	<b>State Certified</b>
<b>Model Number</b> 631-X	<b>Status</b> Pass
<b>Serial Number/ Lot Number</b> 2377	<b>Temp °C</b> 25.6
<b>Location</b> New Jersey	<b>Humidity %</b> 21.0
<b>Department</b>	

### Calibration Specifications

**Group #** 1  
**Group Name** REGEN / ZERO CHECK  
**Test Performed:** Yes      **As Found Result:** Pass      **As Left Result:** Pass

### Test Instruments Used During the Calibration

(As Of Cal Entry Date)

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>Next Cal Date / Expiration Date</u>
					<u>Last Cal Date/ Opened Date</u>

### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** David Suits

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

**Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment**  
**Please call 800-301-9663 for Technical Assistance**



3375 N. Delaware Street, Chandler, AZ 85225  
800.528.7411 | (f) 602.281.1745 | azic.com

### Certification of Instrument Calibration

Pine Environmental Services LLC  
92 NORTH MAIN ST • BLDG 20  
WINDSOR, NJ 08651

R9173

RMA # 2761046

This is to certify that the Jerome X6J1 0001 Gold Film Hydrogen Sulfide Analyzer, Serial Number 2377, with Sensor Number 19-01-16-S2BS, was calibrated with standard units traceable to NIST.

Calibration Status as Received: **Out of Calibration**

		Actual	Calibration Gas	Allowable Range
Incoming:	Range 1	0.528 ppm H <sub>2</sub> S	0.500 ppm H <sub>2</sub> S	+/- 6%
	RSD %	3.58		<5%
Outgoing:	Range 1	0.476 ppm H <sub>2</sub> S	0.500 ppm H <sub>2</sub> S	+/- 6%
	RSD %	1.74		<5%

Calibration Status as Left: **In Calibration**

Estimated Uncertainty of Calibration System: 2.8%

Calibration Date: 31-Jul-2020      Recalibration Date: 30-Jul-2021

Temperature °F: 73.20      % Relative Humidity: 45.50

Approved By: \_\_\_\_\_  
Title: Michael Attwood - Quality Control

Date Approved: 03-Aug-2020

#### Equipment Used:

**H<sub>2</sub>S Calibration Standard:** CC-75664 NIST#: 1467976  
Calibration Date: 25-Sep-2018 Calibration Date Due: 25-Sep-2021

**Mass Flow Controller B:** 124604 NIST#: 256148  
Calibration Date: 13-Jan-2020 Calibration Date Due: 13-Jan-2021

**Mass Flow Controller D:** 124602 NIST#: 256155  
Calibration Date: 13-Jan-2020 Calibration Date Due: 13-Jan-2021

**Digital Multimeter:** 93080290 NIST#: 7003135  
Calibration Date: 30-Oct-2019 Calibration Date Due: 30-Oct-2020

**Flowmeter:** US04126032 NIST#: 1813, 1817, 1796  
Calibration Date: 19-Dec-2019 Calibration Date Due: 19-Dec-2020

Calibration Procedure Used: 730-0032

AMETEK Brookfield certifies that the above listed instrument meets or exceeds all published specifications and has been calibrated using standards whose accuracy are traceable to the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY within the limitations of the Institute's calibration services, or have been derived from accepted values of natural physical constants, or have been derived by the ratio type of self-calibration techniques.

Disclaimer: Any unauthorized adjustments, removal or breaking of QC seals, or other customer modifications on your Jerome Analyzer WILL VOID this factory calibration. Because any of the above acts could affect the calibration and readings of the instrument, their certification will no longer be valid and further, AMETEK Brookfield WILL NOT be responsible for any liabilities created as a result of using the instrument after such adjustments, seal removal, or modifications.

As long as a functional test is within range, according to the procedure outlined in the Operator's Manual, the instrument is performing correctly.

This document shall not be reproduced, except in full, without the written approval of AMETEK Brookfield.



## INSTRUMENT CALIBRATION REPORT

**Pine Environmental Services LLC**

5069 Baresford St.  
Burnaby, BC V5J 1H8  
Toll-free: (877) 678-8383

### Pine Environmental Services, Inc.

**Instrument ID** 34336  
**Description** App-Tek OdaLOG LL-H2S (0-200ppm)  
**Calibrated** 6/23/2021 8:00:26PM

<b>Manufacturer</b> Rae Systems	<b>State Certified</b>
<b>Model Number</b> OdaLog Type LL-H2S 200 ND	<b>Status</b> Pass
<b>Serial Number/ Lot Number</b> 09609261	<b>Temp °C</b> 24.9
<b>Location</b> British Columbia	<b>Humidity %</b> 45
<b>Department</b>	

#### Calibration Specifications

<b>Group #</b> 1	<b>Range Acc %</b> 0.0000						
<b>Group Name</b> H2S	<b>Reading Acc %</b> 3.0000						
<b>Stated Accy</b> Pct of Reading	<b>Plus/Minus</b> 0						
<b>Nom In Val / In Val</b>	<b>In Type</b>	<b>Out Val</b>	<b>Out Type</b>	<b>End As</b>	<b>Lft As</b>	<b>Dev%</b>	<b>Pass/Fail</b>
50 / 50	PPM	50	PPM	27	50	0.00%	Pass

#### Test Instruments Used During the Calibration

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>Last Cal Date/ Opened Date</u>	<u>Next Cal Date / Expiration Date</u>
BC(2021)_H2S - 50 PPM	H2S_50 ppm / N2 Balance	Calgaz	31700	1421578		12/31/2022

#### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Val Eftenaru

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

**Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment**  
**Please call 800-301-9663 for Technical Assistance**



## INSTRUMENT CALIBRATION REPORT

**Pine Environmental Services LLC**

5069 Baresford St.  
Burnaby, BC V5J 1H8  
Toll-free: (877) 678-8383

### Pine Environmental Services, Inc.

**Instrument ID** 34337  
**Description** App-Tek OdaLog L2 Gas Data Logger (0-200ppm)  
**Calibrated** 6/23/2021 7:50:08PM

<b>Manufacturer</b> Pine Environmental Services, Inc.	<b>State Certified</b>
<b>Model Number</b> Odalog Type L2	<b>Status</b> Pass
<b>Serial Number/ Lot Number</b> 09609262	<b>Temp °C</b> 24.9
<b>Location</b> British Columbia	<b>Humidity %</b> 45
<b>Department</b>	

#### Calibration Specifications

<b>Group #</b> 1	<b>Range Acc %</b> 3.0000						
<b>Group Name</b> H2S	<b>Reading Acc %</b> 0.0000						
<b>Stated Accy</b> Pct of Range	<b>Plus/Minus</b> 0						
<b>Nom In Val / In Val</b>	<b>In Type</b>	<b>Out Val</b>	<b>Out Type</b>	<b>Fnd As</b>	<b>Lft As</b>	<b>Dev%</b>	<b>Pass/Fail</b>
50 / 50	PPM	50	PPM	42	50	0.00%	Pass

#### Test Instruments Used During the Calibration

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>(As Of Cal Entry Date)</u> <u>Last Cal Date/ Expiration Date</u> <u>Opened Date</u>
BC(2021)_H2S - 50 PPM	H2S_50 ppm / N2 Balance	Calgaz	31700	1421578	12/31/2022

#### Notes about this calibration

**Calibration Result** Calibration Successful  
**Who Calibrated** Val Eftenaru

All instruments are calibrated by Pine Environmental Services LLC according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

**Notify Pine Environmental Services LLC of any defect within 24 hours of receipt of equipment**  
**Please call 800-301-9663 for Technical Assistance**



Harbour Resource Partners

STATUS UPDATE

Summarize and analysis of previous odour complaints (last two years and background)			
1	Summary of odour regulations in other jurisdictions	Crystal/Chris	Nov-04
2	Analyze complaints' trends as well as geographical and seasonal distribution	Crystal/Sadra	Nov-11
3	Correlate complaints with operating conditions (wet weather, DensaDeg vs. plate settler tanks in use, etc.) or maintenance activities (cleaning tanks, scrubber media replacement, etc.)	Crystal/Denis	Nov-18
4	Summarize all finding in a TM	Crystal/Chris	Dec-02

Complete  
Complete  
Complete  
Complete

Confirm the performance of the odour control systems			
<i>Audit of the odour collection system:</i>			
1	Field investigation to confirm the integrity of the tank covers, note deficiencies and document recommendations	Crystal/Sadra	Nov-04
2	Review existing H2S data and create a detail scope of future field investigation as highlighted below	Crystal/Sadra	Nov-18
3	Field investigation to measure negative air pressure under all covers	Crystal/Denis	Jan-31
4	Field investigation to measure H2S under all covers and at some untreated sources (HVAC units, vents, etc.)	Crystal	
5	Field investigation to measure the velocity of foul air extraction from each tank	Denis/Contractors	
6	Confirm 6 CFM air extraction from each tank is met	Martina/Sadra	
7	Identify "possible" improvements to the foul air collection system - Recommendations will need to be further assessed	Sadra	Jan-31
<i>Audit of the treatment system:</i>			
1	Confirm the design parameters identified for all units are met	Sadra	Nov-04
2	Review water quality and quantity in the BTF	Sadra/Crystal	Nov-04
3	Review all operating variables for treatment systems (differential pressures, online H2S, air flow rate data, runtime, etc.)	Sadra	Nov-11
4	Confirm the performance of mist eliminators	Sadra/Dave	Nov-11
5	Assess the condition of carbon media in ACFs	Sadra/Denis	Jan-31
6	Review maintenance records and summarize findings	Sadra/Crystal/Dave	Nov-18
7	Collect samples for odour and air quality analysis at the inlet and outlet of each online scrubber (BTF or ACF) to confirm the performance of the units comply with the design objectives		
a.	Develop the scope of sampling, including sample locations and required analysis	Sadra	Oct-28
b.	Schedule, budget, resources, and procurement for sample collection and analysis	Chris	Jan-31
c.	Analysis of results, if necessary	Sadra	Jan-31
8	Identify "possible" improvements to the foul air treatment system - Recommendations will need to be further assessed	Sadra	Nov-25
9	Summarize all findings in a TM	Sadra	Dec-02

Complete  
Complete  
In progress  
In progress  
planned  
planned  
In progress.  
Complete  
Complete  
Complete  
Complete  
Sampling complete - waiting for results  
Complete  
Complete  
Complete  
Planned - Golder  
Planned  
Complete  
Complete

Measure odour at the fenceline and beyond.			
1	Install a weather station at MPWWTP	Dave/Denis	Nov-28
2	Collect samples for odour analysis at the fence line to confirm MPWWTP does not exceed 5 odour units / m3		
a.	Develop the scope of sampling, including sample locations	Sadra/Chris	Oct-28
b.	Schedule, budget, resources and procurement for sample collection and analysis	Chris	Jan-31
c.	Analysis of results, if necessary (Sadra)	Sadra	Jan-31
3	Finalize and complete the VIU project to measure a large number of emitted chemicals associated with MPWWP in the community	Chris/Sadra VIU	Q 2 - 2023
4	Update the odor and H2S dispersion model based on the updated plant emission data and the new weather station installed at the plant	Sadra/Consultant/Chris	Q 2 - 2023

Complete  
Complete  
Complete  
Planned - Golder  
planned  
In progress  
Planned - Golder



1229 Esquimalt Road  
Esquimalt BC V9A 3P1  
PHONE: 250-414-7100  
FAX: 250-414-7111  
[www.esquimalt.ca](http://www.esquimalt.ca)

September 29, 2022

Capital Regional District  
625 Fisgard Street  
Victoria, British Columbia  
Canada V8W 1R7

Attention: Robert Lapham, Chief Administrative Officer

**Re: McLoughlin Point WWTP – Outstanding Matters**

The following is a status of outstanding matters regarding the WasteWater Treatment Plant, in particular with respect to odour control, LEED Gold certification, Tsunami Covenant's Completion Report and other matters.

We understand that the CRD 2-year commissioning period for the WWTP ends in January 2023, but it is clear the WWTP is not yet operating in compliance with the Township-CRD Agreements and the Zoning Bylaw.

**“Commitment Review” Spreadsheet**

Dave Clancy had forwarded a spreadsheet in April 2021 and request for Contract Close-Out Form; we advised in May 2021 that there were outstanding matters. Unfortunately, it appears that was incorrectly presented in the May 17, 2021 Governance Transition Report as:

*2.2.3.1. ... The Project Team are of the opinion that all of the commitments under the three agreements have been met, and the CAO of the Township of Esquimalt is preparing to take a close-out letter to Council confirming this.*

I had made no such commitment to a “close-out letter”, and in fact advised the opposite – not all commitments had (or have) been met. I also noted that the “Contract Close-Out” form requested was not appropriate to the Community Impact Mitigation & Operating Agreement, as it has commitments that continue for the life of the WWTP, or for the Zoning Bylaw as that is not a contract but rather is regulatory in nature.

We attach the Spreadsheet with CRD's comments as of 12-Apr-21, the original Township comments dated 07-May-21, now supplemented with a “2022 UPDATE” where applicable. The following elaborates on the most significant issues.



## Odour Control

Please find attached correspondence from the West Bay Residents Association and the Victoria West Community Association dated September 22, 2022 regarding “offensive odours”.

The WWTP is required to have “undetectable” odour at the property line (i.e. 5 units), as required by the Zoning Bylaw, the Host Community Impact 5-Year Agreement *and* the Community Impact Mitigation & Operating Agreement.

The Host Community Agreement states that “*The CRD will not accept the WWTP*” until that standard is met. With the looming January 2023 anticipated date of acceptance of the WWTP, there are clearly further requirements that must be imposed on the Contractor and/or undertaken by the CRD, to meet the required standard before the CRD should accept the WWTP.

Both the Host and the Operating Agreement require that “*the CRD shall expeditiously and in good faith, use all reasonable efforts to investigate and remediate the source of the odour in order to reduce the odour to the agreed level.*”

We understand that the CRD issued odour advisories, and CRD Staff have reported on the odour and the efforts they are undertaking, but it is clear these have not been enough to remediate the situation. The WWTP is not operating satisfactorily.

It’s important to note that there are no exceptions to this minimum odour standard. It is not enough to say that the odour occurred during “*regular maintenance*”, or that the “*impact*” on various parts of the community “*is dependent on wind direction*”, as was referred to at the June 21, 2022 meeting of the Esquimalt Liaison Committee.

The Core Area Wastewater Treatment, Commissioning Activities Update. Dated September 2022 highlights that odour control continues to be a problem:

*“Optimization and fine tuning of the odour control system is ongoing. All the primary and secondary treatment vessels have their head space extracted and scrubbed through odour control units however balancing of these spaces is being fine-tuned to ensure no odour escapes during operation.”*

...

*“Ongoing optimization of the treatment place ... is anticipated to extend well into the performance period which ends in January 2023. During this period, operational, maintenance and optimization activities are anticipated to impact system performance in terms of odour control and treatment plant effluent quality. The CRD continues to complete routine odour monitoring as well as respond to community odour complaints with corresponding corrective actions in an effort to mitigate the root cause.”*

Please identify what further measures are being taken to meet the statutory and contractual requirements for no odour detection at the property lines, and the time frame when this mandatory requirement is expected to be satisfied.

## LEED® Gold Certification

Section 55(2)(b)(4) of the Zoning Bylaw requires the LEED Gold standard:

*Operations and Maintenance Building portion of the wastewater treatment plant designed and built to LEED® Gold standard, certified within one year of construction completion, or such longer period as required to address deficiencies provided the initial review and report is completed within the first year.*

As noted in our May 2021 correspondence, we have yet to receive any information in this regard. Please advise, and forward copies of the correspondence with the Green Building Council, of the efforts taken to secure this certification.

As noted in the Host Agreement, Section 55(7)(c) would be applicable if, after “**all reasonable efforts to secure such approval or permission**”, you cannot obtain the certification. Please advise if you intend to pursue this alternative appraisal and contribution approach.

*(c) Where a condition is severed, **or all reasonable efforts under this provision have not resulted in the necessary third-party approval**, then the condition shall be deemed satisfied on the provision of:*

- (i) an **independent appraisal** estimating the cost of the provision of the amenity or satisfaction of the condition, if the condition had been satisfied; and*
- (ii) a **cash contribution** equivalent to the cost of the provision of the amenity or satisfaction of the condition, from the property owner to the Township for the McLoughlin Point Amenity Reserve Fund, such monies to be used for replacement amenities or conditions that are consistent with governing authority, including amenities that reflect the intent of the amenity that could not be provided, or further enhancements or additions to remaining amenities or conditions.*

**Liaison Committee:** We are also taking this opportunity to remind you that the Liaison Committee is to continue meeting “at least twice annually while the WWTP is in operation”, per Section 5.2 of the Community Impact Mitigation & Operating Agreement.

At the last meeting, we understood that CRD Staff had wanted to cease future meetings. The Minutes indicate “*December 2022 will mark the end of the two-year period of holding semi-annual ELC meetings*” and there is to be “*discussion re: continuing meetings*” at the next meeting. We trust that this was perhaps the results of some confusion regarding the transition from construction to operating, but the Operating Agreement requires an ongoing Liaison Committee, and therefore no such “discussion” is necessary and there will be no “end” to such meetings in December 2022. The “Terms of Reference” noted in the Meeting Minutes do not supersede the Operating Agreement. In fact, with ongoing operational issues and current non-compliance with the Zoning Bylaw and Agreements on matters that are most important to the residents, it would be prudent to schedule more frequent meetings of this Committee.

## Tsunami Completion Report

Section 3 of the **Tsunami Covenant** requires a Completion Report prepared by a Qualified Professional following completion of construction. Please provide a copy of that or advise when it will be available. We can then determine whether modification or replacement of the Tsunami Covenant will be required in accordance with its terms.

### Additional Matters to be Documented

The attached Commitment Review Spreadsheet also notes other matters that may be outstanding, for example:

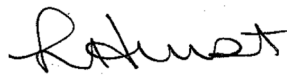
- High efficiency air filters for Schools
- Public use of WWTP Space
- Interpretative Signage

It is our hope this is simply a matter of documentation, and CRD Staff can promptly provide evidence that these commitments have been satisfied.

To the extent that you disagree with anything noted above, we invoke Section 9.1 of the Community Impact Mitigation & Operating Agreement for the respective *“Chief Administrative Officers of the parties [to] meet promptly to attempt to resolve the dispute”*.

I appreciate that you may prefer to have our respective successors address this in November or December.

Yours truly,



Laurie Hurst, CPA, CGA  
Chief Administrative Officer

Attachments:           Commitment Review Spreadsheet, 2022 Update.  
                              Residents Association Letter dated September 22, 2022

LH/sc

**Township of Esquimalt Agreements**

	Current Status - CRD	Comments - ToE
	13-Apr-21	2021-05-07 UPDATED TO 27-09-2022
<b>Host Community Impact - 5 Year Agreement</b>		
Item 1 - Term is 5 Years		Term is to February 21, 2022
Item 2 - Traffic Management Plan - transport of materials and equipment through the Township	Complete - Traffic Management Plan was approved by ToE Council on May 23rd 2017 and was updated from time to time as the project progressed.	Agreed - complete
Item 3 - Operations and Maintenance Building portion of the wastewater treatment plant designed and built to LEED® Gold standard , certified within one year of construction completion , or such longer period as required to address deficiencies provided the initial review and report is completed within the first year .	Complete - Basis of design report and drawings show concurrence with Gold Leed Standard. Engineer of Record certified construction was in accordance with the design.	To be determined/ documented. Zoning Bylaw requires that "Operations and Maintenance Building portion of the wastewater treatment plant is designed and built to LEED® Gold standard, certified within one year of construction and completion, or such longer period as required to address deficiencies provide in the initial review and report is completed within the first year". The Engineer of Record needs to submit all of the documentation to the Green Building Council and they will determine if the building is certified. The certification process is described here: <a href="https://www.cagbc.org/CAGBC/Programs/LEED/LEED_Certification_Process.aspx">https://www.cagbc.org/CAGBC/Programs/LEED/LEED_Certification_Process.aspx</a> .
		2022 UPDATE: Still outstanding. No LEED information provided.
Item 4 - Odour-reducing measures providing for an odour detection level no greater than five (5) odour units measured at the property lines, and noise mitigation measures including a high degree of noise attenuation with all louvres , doors , and noisy equipment such as blowers requiring noise attenuation , such that noise does not exceed 60 dBA outside of the property lines.	Complete - Terms and Conditions of the Project Agreement required adherence to both odour and noise limits. Performance test of the facility confirmed achievement of these performamnce conditions. As of January 12th 2021 CRD is operating the Mcloughlin facility and will be monitoring both odour and noise on a going forward basis.	To be determined/ documented. During early May landscaping inspection TOE staff noticed a high level of odour that seemed to be coming from the open doors, which suggests that there is a positive pressure in the building. TOE staff suggest revisiting the performance test results of the facility.
		2022 UPDATE: Still outstanding. Ongoing complaints about Odour. See Letter from L.Hurst to B. Lapham Sept 2022
Item 5 - Design Review Process	Complete - Final design presented to development review committee and ToE Council. Council approved the Development Permit for the Mcloughlin site on Feb 27th 2017 and for Macaulay Pumping Station on March 19th, 2018.	Agreed - Complete.
Item 6 -Reinstatement of all roads (including but not limited to paved areas, sidewalks, boulevards) affected by establishment of wastewater treatment plant , to a condition equal to or better than existed before construction.	Complete - Discussions held with ToE Engineering Manager and HRP to agree on restoration requirements to the affected roads. HRP has completed restoration activities.	Restoration has been completed. TOE has asked for monetary compensation for other road defects. HRP/CRD is still evaluating this request.
		2022 UPDATE: Completed as of Nov. 2021
Item 7 - High efficiency air filter systems to mitigate any negative effects caused by the construction and related traffic of the WWTP project on air quality and odour reduction for the following schools : a. Esquimalt High School b. Rockheights Middle School c. Ecole Macaulay Elementary School d. Ecole Victor Brodeur	Complete - Air Quality sampling has been undertaken by an specialized consultant since onset of construction. RWDI has completed their final sampling and provided a report dated March 2nd, 2020. Based on their finding no further monitoring is required and there is no benefit to upgrading any of the existing ventiation systems at any of the schools. CRD can provided the Township with a copy of the report for their records.	To be determined/ documented. Please provide: copy of the March 2, 2020 Air Quality sampling report; correspondence from the School District and/or each school confirming that they were given oppontunity for upgraded systems, or corresponece from CRD to schools evidencing same.
		2022 UPDATE: Still outstanding. No information received to evidence completion.
Item 8 - Water System Upgrades	Complete - water service upgrades were included in HRP's final design. Engineer of Record has confirmed construction was in accordance with the approved design.	Agreed - Complete.
Item 9 - Conduits	Complete - final design approved by ToE.	Agreed - Complete

Item 10 - Traffic Inteegration amenities, in the form of traffic calming, speed bumps, speed cushions , speed readers with signage , enhanced boulevard curbing and landscaping and bike lanes on streets in the Immediate Community	Complete - ToE Director of Engineering has submitted the scope of the amenities. CRD Project Director has reviewed and confirmed agreement with the scope and process forward for providing approval and compensation up to the maximum of \$950,000. Engineering	In Process - Funds not yet received. TOE has put forth a scope of work for Lyall Street and CRD has accepted. TOE is in the process of writing RFP for consultant for design and PM. So far the plan is to submit bills as they come in and send to the CRD. Not complete until funds received
		2022 UPDATE: Still In Process - Scope approved by CRD. Construction pending contract award by Esquimalt Council on October 3. Invoices will be submitted as they come in. Some consultant fees have been paid to date.
Item 11 - Lyall Street Enhancements - amenities refered to in Section 55(2)(b)(1)a and b fo the Zoning Bylaw collectively of a value no less than \$950,000.	Complete - ToE Director of Engineering has submitted the scope of the amenities. CRD Project Director has reviewed and confirmed agreement with the scope and process forward for providing approval and compensation up to the maximum of \$950,000. Engineering	In Process - Funds not yet received. Same as Item 10
		2022 UPDATE: Still in process; same as Item 10.
Item 12 - Open Space Improvements - Public Walkway : Design of building and site to either incorporate public accessible trail along waterfront, or to provide for Statutory Right of Way for future trail corridor and development.	Complete - SRW obtained and is on title.	Agreed - Complete.
Item 13 - Public Art and Interpretive Signage Improvements - provide \$100 ,000 cash contribution in satisfaction of section 55(2)(b)(7) and 55(2)(b)(11) fo the Zoning Bylaw.	Complete - Met with ToE CAO to discuss FN art. Provided site plan for Macualy on April 12th 2020. Signage at Mcloughlin along with installations at Macaulay satisfy the fiancial obligation.	To be determined/ documented. During early May landscaping inspection TOE staff noticed interpretative signage had not yet been installed. Public Art component completed on installation or provision of funds to Township.
		2022 UPDATE: Please provide evidence that Interpretative Signage has been installed.
Item 14 Macaulay Point - relocation of works yard located at Macaulay Point.	Complete - Mcloughlin Treatment Plant includes facilities for CRD operations and maintenance staff which were previously housed at Macaulay Pumping Station.	The works yard at Macaulay is gone with the lay down yards gravel or grass. At the pump station asphalt paving for parking and access only. Meets requirements.
Item 15 - Access Hours for WWTP Space	Complete - will be accomidated where possible by CRD	To be determined/ documented. Thank you for confirming commitment; please advise how public is informed of ability to access this space (e.g. web page, signage, etc.?) and process to access and reserve this space (.e.g CRD contact, cost (if any) etc.). If above not available, please advise when and how CRD Board considered allowing access.
		2022 UPDATE: Outstanding: Please provide evidence that Public has been informed of this availability to access WWTP Space, and procedure for reserving space.
Item 16 - Capital Improvement Amenities and Reserve Fund	See comments under Amenity Reserve Fund Administration Agreement	Agreed - Complete.
<b>Amenity Reserve Fund Administration Agreement</b>		
One-time contribution of \$17 ,000,000 [Seventeen Million Dollars] to the Mcloughlin Point Amenity Reserve Funds	Complete - Reserve Funds established on October 01 2018	Agreed - Complete.
Reserve Funds Management	Complete - ToE has provided annual report for years 2019 and 2020. Process going forward established.	Agreed - Ongoing commitment.
Reserve Funds Management	Outstanding - ToE by December 2020 to have spent or committed to expend funds contributed under Section 16.1 and 16.3 of the Host Community Impact 5-Year Agreement (\$7.0m improvements of waterfront parks and \$5.0m for construction, additions or improvements of emergency services and public safety facilities.	Correspondence from Esquimalt to CRD dated: May 6, August 24 and September 8, 2020 with responses from CRD September 1 and December 18; agreement that all amenity fund requirements were being met and as per formal agreements. Memorandum of Understanding duly executed January 14, 2021 that '...CRD acknowledges and agrees that the Township's adherence to the commitment....complies with the intent and terms of the Agreements.'

Reserve Funds Management	Outstanding - By February 2022 the ToE shall have expended or committed the funds under Section 16.2 (\$5.0m for improvements of public and/or community space within recreation facilities.	As per the correspondence above dated December 18, CRD agreed that recreation funds were able to be transferred with \$2.9m towards the Gorge Park Legacy Pavilion and \$2.1m to the Public Safety Building Project with community space secured through the MOU.
Provision of 250 square feet of office space and two parking spaces in ToE Emergency Services and Public Safety Facilities	Outstanding - ToE to confirm availability of 250 square feet of office space and two parking spaces in the Emergency Services and Public Safety Facilities.	Current and previous plans attached to correspondence submitted to CRD contain the required office space and parking spots. The office space will have independent access to the secured building via an outside door off of Park Place. Currently seeking electoral approval to borrow remaining funds for this project.
		2022 UPDATE: Electoral approval to borrow remaining funds for this project was successful. Additional \$6m in funding also approved by Council from accumulated surplus.
<b>Community Impact Mitigation &amp; Operating Agreement</b>		
Term from January 1, 2017 until WWTP replaced or decommissioned.		Note 4.2 replacement agreement if/when necessary.
Items 1-3 - Annual contribution of \$55,000 adjusted annually for any increase in CPI for Victoria, British Columbia, to McLoughlin Point Operating Reserve Fund.	Complete - CRD Community Impact Fee paid for both 2017 and 2018. CRD commits to providing funding on-going as per	Ongoing Commitment – Thank you for confirming CRD’s continued commitment.
Item 5 - Ongoing liaison committee formed with representatives from Township, local schools, health authority, DND officials community groups and other interested parties (all as available and as interested), along with operators on subject property, with meeting space provided on subject property at no cost at least once/monthly, including to review satisfaction of above conditions and ongoing operations.	Complete - August 18 2017 Liaison Committee formed and met monthly. Upon completion of the construction phase meetings are now focus on operations. New members have been appointed from the CRD to continue on with regularly scheduled meetings.	Ongoing Commitment -With construction complete meeting will be become biannual with the CRD becoming chair of the committee. Kick off meeting for this new committee has yet to occur due to COVID as the Committee wanted to meet and tour the facility. Jeff M to remain TOE representative.
Item 6 - No Biosolids Treatment in Township		2022 UPDATE: Liaison Committee formed and met. To continue to meet "at least twice annually while WWTP is in operation". Joel Clary is now representative
6.2 Conveyance of residuals solids forcemains located within dedicated highway corridors	Complete - all forcemains located within dedicated highway corridors	Ongoing Commitment Agreed that Construction completed and roads restored.
Item 7 - Odour investigation and remediation		Ongoing Commitment. During recent landscaping inspection TOE staff noticed a high level of odour that seemed to be coming from the open doors, which suggests that there is positive pressure in the building. TOE staff suggest revisiting the performance test results of the facility.
		2022 UPDATE: Still outstanding. Ongoing complaints about Odour. See Letter from L.Hurst to B. Lapham Sept 2022
Item 8 - Consult with the ToE prior to seeking an increase in the authorized rate of discharge for effluent of 384,000 cubic meters per day.	Complete - Design Capacity of the plant - provided update email to Laurie Hurst on June 05 2020 with regards to Ministry's direction regarding maximum flow requirement.	Ongoing Commitment.
<b>Zoning Bylaw No 288, McLoughlin Point Special Use [1-3]</b>		
(i) The Floor Area Ratio shall not exceed 0.35;	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the McLoughlin site on Feb 27th 2017	Ongoing Commitment. Bill checking with building inspection if as-builts have been provided to confirm compliance with DP and BP and these regulations.
		2022 UPDATE: To be confirmed against as-built plans
(ii) The Floor Area shall not exceed 4,500, square metres, excluding processing tanks and generators completely enclosed within a Building	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the McLoughlin site on Feb 27th 2017	Ongoing Commitment.
(iii) Lot Coverage shall not exceed 65%	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the McLoughlin site on Feb 27th 2017	Ongoing Commitment.
(iv) Plant capacity not to exceed 108 million litres per day, Average Dry Weather Flow (ADWF)	Complete - Design Capacity of the plant - provided update email to Laurie Hurst on June 05 2020 with regards to Ministry's direction regarding maximum flow requirement.	Ongoing Commitment.

Item 1 - Traffic Integration Amenities	Complete - ToE Director of Engineering has submitted the scope of the amenities. CRD Project Director has reviewed and confirmed agreement with the scope and process forward for providing approval and compensation up to the maximum of \$950,000. Engineering	In progress. TOE has put forth a scope of work for Lyall Street and CRD has accepted. TOE in the process of writing RFP for consultant for design and PM. So far the plan is to submit bills as they come in and send to the CRD.
		2022 UPDATE: Still In Process - Scope approved by CRD. Construction pending contract award by Esquimalt Council on October 3. Invoices will be submitted as they come in. Some consultant fees have been paid to date.
Item 2 - Education and Interpretive Centre : space that can be used for a conference room on-site for students and the public to learn about wastewater treatment and management, made available at no charge for use by schools , government bodies, non-profit organizations and individuals as requested during normal hours of operation : Minimum 75 square metres of floor area, either in main lobby or a separate room	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the Mcloughlin site on Feb 27th 2017	Agreed. See also Item 15 from Host Community Impact 5-year agreement
		2022 UPDATE: Outstanding: Please provide evidence that Public has been informed of this availability to access WWTP Space, and procedure for reserving space.
Item 3 - High efficiency air filters	Complete - Air Quality sampling has been undertaken by an specialized consultant since onset of construction. RWDI has completed their final sampling and provided a report dated March 2nd, 2020. Based on their finding no further monitoring is required and there is no benefit to upgrading any of the existing ventilation systems at any of the schools. CRD can provided the Township with a copy of the report for their records.	To be determined/ documented. Please provide: copy of the March 2, 2020 Air Quality sampling report; correspondence from the School District and/or each school confirming that they were given opportunity for upgraded systems, or correspondence from CRD to schools evidencing same.
		2022 UPDATE: Still outstanding. No information received to evidence completion.
Item 4 - Leeds Gold O&M Building	Complete - Basis of design report and drawings show concurrence with Gold Leed Standard. Engineer of Record certified construction was in accordance with the design.	To be determined/ documented. Zoning Bylaw requires that, "Operations and Maintenance Building portion of the wastewater treatment plant is designed and built to LEED® Gold standard, certified within one year of construction and completion, or such longer period as required to address deficiencies provide in the initial review and report is completed within the first year". The Engineer of Record needs to submit all of the documentation to the Green Building Council and they will determine if the building is certified. The certification process is described here: <a href="https://www.cagbc.org/CAGBC/Programs/LEED/LEED_Certification_Process.aspx">https://www.cagbc.org/CAGBC/Programs/LEED/LEED_Certification_Process.aspx</a> .
		2022 UPDATE: Still outstanding. No LEED information provided.
Item 5 - Macaulay Point Pump station , upgraded to standards of design, materials and quality of construction consistent with recent Craigflower Pump Station project, with odour mitigation measures to be installed in Macaulay Pump station, and Lang Cove Pump station, providing for an odour detection level no greater than five (5) odour units measured at the property lines (or fence lines where applicable).	Complete - Agreement obtained from ToE that the quality of the Macaulay design basis is consistent with Craigflower. Development Permit for Macaulay Pumping Station obtained on March 19th, 2018	Agreed.
Item 6 - Public open space (no less than 140 square metres).	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the Mcloughlin site on Feb 27th 2017	Agreed.
Item 7 - Public Art	Complete - Met with ToE CAO to discuss FN art. Provided site plan for Macaulay on April 12th 2020. Signage at Mcloughlin along with installations at Macaulay satisfy the financial obligation.	To be determined/ documented. Public Art component completed on installation or provision of funds to Township.
		2022 UPDATE: Public Art completed.
Item 8 - The provision of public open space improvements of a value no less than \$75,000.	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the Mcloughlin site on Feb 27th 2017	Agreed.



Item 9 - Public Walkway : Design of building and site to either incorporate public accessible trail along waterfront, or to provide for Statutory Right of Way for future trail corridor and development.	Complete -SROW obtained and is on title.	Agreed.
Item 10 - Operations & Maintenance Building portion of wastewater treatment plant use to incorporate a green roof, with a minimum area(s) of 1600 square metres and for a minimum of 80% of the roof, including for the purposes of providing screening and bird habitat.	Complete - drawings provided to ToE in support of Development Permit. Council approved the Development Permit for the Mcloughlin site on Feb 27th 2017	Agreed.
Item 11 - Heritage Interpretative Signage , recognizing the historic uses on the subject property and process to transition to current uses (Minimum 5 signs for stations in public open space area).	Complete - 5 signs have been provided at the Mcloughlin facility.	To be determined/ documented. During early May landscaping inspection TOE staff noticed interpretative signage had not yet been installed.
		2022 UPDATE: Please provide evidence that Interpretative Signage has been installed.
Item 12 -Reinstatement of all roads (including but not limited to paved areas, sidewalks, boulevards) affected by establishment of wastewater treatment plant , to a condition equal to or better than existed before construction.	Complete - Discussions held with ToE Engineering Manager and HRP to agree on restoration requirements to the affected roads. HRP has completed restoration activities.	Restoration has been completed. TOE has asked for monetary compensation for other road defects. HRP/CRD is still evaluating this request.
Item 13 - Odour-reducing measures providing for an odour detection level no greater than five (5) odour units measured at the property lines, and noise mitigation measures including a high degree of noise attenuation with all louvres , doors , and noisy equipment such as blowers requiring noise attenuation , such that noise does not exceed 60 dBA outside of the property lines.	Complete - Terms and Conditions of the Project Agreement required adherence to both odour and noise limits. Performance test of the facility confirmed achievement of these performamnce conditions. As of January 12th 2021 CRD is operating the Mcloughlin facility and will be monitoring both odour and noise on a going forward basis.	Thank you for confirming committment to ongoing monitoring, and if necessary mitigation. During the landscaping inspection TOE staff noticed a high level of odour that seemed to be coming from the open doors, which suggests that there is positive pressure in the building. TOE staff suggest revisiting the performance test results of the facility.
		2022 UPDATE: Still outstanding. Ongoing complaints about Odour. See Letter from L.Hurst to B. Lapham Sept 2022
Item 14 - Facility design to ensure that any products , byproducts , biosolids or other goods and commodities be transported off- site only by means of piping or marine access, thereby reducing negative transportation impacts on the Immediate Community .	Complete - Residuals treatment facility is located at the Hartland Landfill site. All residuals are pumped off site for further processing.	Commitment Completed.
Item 15 - That no odour-causing and/or methane-producing (of any level) facilities related to the use of the subject property be located off-site within the Nearby Community , except for pipes, outfalls , pumping stations and accessory appurtenances .	Complete - Residuals treatment facility is located at the Hartland Landfill site. All residuals are pumped off site for further processing. No methane producing processes are included within the Nearby Community.	Commitment Completed.
Item 16 - One-time contribution of \$17 ,000,000 [Seventeen Million Dollars] to the Mcloughlin Point Amenity Reserve Funds	Complete - See comments re: Amenity Reserve Fund Administration Agreement	Agreed. Completed.
Item 17 - Annual contribution of \$55,000 adjusted annually for any increase in CPI for Victoria, British Columbia , to Mcloughlin Point Operating Reserve Fund.	Complete - See comments re: Community Impact Mitigation & Operating Agreement	Ongoing commitment - Thank you for confirming CRD's continued commitment.
Item 18 -Ongoing liaison committee formed with representatives from Township, local schools, health authority , DND officials community groups and other interested parties (all as available and as interested), along with operators on subject property , with meeting space provided on subject property at no cost at least once/monthly, including to review satisfaction of above conditions and ongoing operations.	Complete - August 18 2017 Liason Committee formed and met monthly. Upon completion of the construction phase meetings are now focus on operations. New members have been appointed from the CRD to continue on with regularly scheduled meetings.	Ongoing Liaison Committee – with construction complete meeting will be become biannual with the CRD becoming chair of the committee. Kick off meeting for this new committee has yet to occur due to COVID as the Committee wanted to meet and tour the facility. Jeff Miller to remain TOE representative
		2022 UPDATE: Liaison Committee formed and met. To continue to meet "at least twice annually while WWTP is in operation". Joel Clary is now Township representative.



Date September 22, 2022

To: Mayor and Council  
Township of Esquimalt

Re: **McLoughlin Point Wastewater Treatment Plant**

Dear Mayor and Council:

We are writing to you on behalf of the residents of the West Bay Residents Association (WBRA) and the Victoria West Community Association (VWCA) regarding the odour that continues to be generated by the McLoughlin Point Wastewater Treatment Plant (MPWWTP).

Both the communities of West Bay, in Esquimalt, and Victoria West, in Victoria, have experienced persistent, ongoing, and obnoxious sewage odours which drift on prevailing winds from the MPWWTP. An ongoing concern since March 2021, these odours have had significant and negative impacts on local air quality and have disrupted the ability of residents to experience quiet enjoyment of their homes and neighbouring environs.

While we understand that there will be operational and equipment issues to be worked out among the responsible parties during the two-year commissioning phase, we are concerned this phase is coming to an end in December 2022, and yet the odour continues to contaminate the air on a regular basis.

The Capital Regional District (CRD) staff Report to the Core Area Liquid Waste Management Committee meeting dated July 27 2022 confirmed that odour continues to be an issue and stated, "As per the Core Area Wastewater Project Agreement between the Capital Regional District (CRD) and Harbour Resource Partners (HRP) the plant is to have been designed such that odour laden air at the plant will be captured and treated prior to discharge such that all air exhausted from the plant will contain a maximum odour concentration at and beyond the plant site boundary of less than five odour units per cubic meter (not perceptible). In addition, the odour treatment systems are designed with sufficient redundancy in place to allow for all normal maintenance activities to occur without interruption of reduction in the level of odour treatment and without exceeding the plant site boundary concentration limit."

Additionally, Clause 4.0 of the Host Community Impact 5-Year Agreement between the CRD and the Township of Esquimalt, stipulates:

4.0 Odour-Reducing improvements

(i) The CRD shall cause the WWTP to be designed and constructed to incorporate odour-reducing technology intended to result in odour levels that will not exceed five (5) odour control units as measured at the boundary of the Project Lands.

(ii) The CRD will not accept the WWTP until the standard under paragraph 4.0 (i) can be met.

(iii) If, following commission, the WWTP emits odour in excess of 5 odour control units as measured at the boundary of the Project Lands, the CRD shall, expeditiously and in good faith, use all reasonable efforts to investigate and remediate the source of the odour in order to reduce odour to the agreed level.

Our two communities have been patient over the past year, putting up with some very offensive odours at times, as it was expected that any new structure as complex as the MPWWTP facility will have some initial issues. However, that patience is waning and concern is increasing as the commissioning phase draws to an end.

We are asking the Township to do everything within its power to hold the CRD responsible for meeting its contractual odour control requirements for the plant and its other conveyance system components, including requiring the CRD to honour its commitment to not accept the handover of the MPWWTP from HRP/Stantec until this requirement is met.

Finally, we ask that Mayor and Council proactively notify our two community associations of issues associated with plant odours and to develop its own process for citizens to talk to a Township representative if seeking information or registering a complaint regarding odours emanating from the plant and its infrastructure components.

We thank you for your time and attention to the consideration of this matter.

Rozlyne Mitchell  
Chair  
West Bay Residents Association

Justine Semmens  
President  
Victoria West Community Association



Making a difference...together

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

T: 250.360.3125  
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www.crd.bc.ca

December 9, 2022

File: 0400-50  
Esquimalt

Township of Esquimalt  
1229 Esquimalt Road  
Esquimalt BC V9A 3P1  
Via email: [Dan.Horan@esquimalt.ca](mailto:Dan.Horan@esquimalt.ca)

Attention: Dan Horan, Chief Administrative Officer

Dear Mr. Horan:

**RE: MCLOUGHLIN POINT WASTEWATER TREATMENT PLANT – OUTSTANDING MATTERS**

This letter is in response to the letter of September 29, 2022 to Robert Lapham, Chief Administrative Officer, regarding the above. We understand the Township of Esquimalt (Township) is seeking information and resolution to outstanding matters related to the agreements between the Township and the Capital Regional District (CRD) and operational impacts related to the McLoughlin Point Wastewater Treatment Plant (WWTP). The CRD acknowledges that the former Township Chief Administrative Officer did not commit to a close-out letter pertaining to the outstanding matters noted below. The following addresses each of the points in the letter.

**Odour Control**

The CRD Core Area Liquid Waste Management Committee and CRD Board received a report on October 12, 2022 that acknowledged that the CRD continues to receive some odour complaints primarily from the West Bay (Township of Esquimalt) and Victoria West (City of Victoria) neighbourhoods. CRD staff continue to respond to every complaint and are logging and mapping every complaint to try to correlate the occurrence with WWTP operational activities and other potential contributing factors. The CRD acknowledges that the resolution of the odour concerns is taking some time, but the CRD remains committed to achieving the performance criteria set out for the McLoughlin Point WWTP which apply during day-to-day operations and plant maintenance. The CRD continues to take steps to improve the function of the odour treatment system and add equipment to further reduce potential odour causing emissions and there is more odour investigation and monitoring work planned over the next six months. The attached table (Appendix A) summarizes the action plan.

The CRD will be closing out the Performance Period for the McLoughlin Point WWTP Project Agreement in January 2023 and releasing the final holdback payments on the basis that the facility has achieved compliance with the Project Agreement standards, confirmed through independent acceptance testing, and as recommended by the CRD's project engineering consultant. Notwithstanding this, the work explained above is a priority for the CRD and unallocated WWTP project budget reserves are available to fund any necessary improvements.

### **LEED Gold Certification**

The McLoughlin Point WWTP building was granted LEED Gold certification on September 20, 2021. The documentation is attached as Appendix B.

### **Liaison Committee**

With reference to the Community Impact Mitigation and Operating Agreement, the CRD agrees to continue the Liaison Committee meetings at least twice annually (likely quarterly) on an on-going basis, despite what was discussed and/or recorded at the last Liaison Committee meeting in June. Senior CRD and Township staff were in attendance at the December meeting. As a result of discussions at the meeting, the CRD will be providing more frequent and updated information links to the community groups, particularly with regards to the odour investigation action plan and findings. The next meeting will be scheduled in March 2023.

### **Tsunami Completion Report**

The CRD acknowledges that a requirement of the McLoughlin Point Hazards Covenant, or the 'foundation-only building permit' covenant, was to provide a completion report by a qualified professional to the Township, that would document if any unexpected construction challenges or conditions were encountered during construction that would impact the safe use of the site for the intended purpose. The CRD will have a qualified professional prepare a completion report specific to site and building design and construction measures undertaken to address potential tsunami inundation impacts – this report will be provided to the Township as soon as it is completed.

### **High Efficiency Air Filters for Schools**

An air quality monitoring study was completed as part of the McLoughlin Point WWTP project that reviewed the impact on air quality at four nearby schools during construction. In summary, the study recommended that the air filtration systems in the schools not be altered. The study is attached as Appendix C.

### **Public Use of WWTP Space**

The McLoughlin Point WWTP building includes a meeting room that can be used by community organizations on weekends and evenings beginning in April 2023. The CRD will prepare and publish the request process and requirements documentation in early 2023.

### **Interpretive Signage**

The historical interpretive signage is installed near the McLoughlin Point WWTP main building entrance and will be incorporated in the WWTP public tour information; public tours are being planned for Spring 2023.



I trust this information addresses the outstanding matters related to the McLoughlin Point WWTP and the agreements between the Township and the CRD, with an understanding that the work to further investigate and resolve the odour concerns is ongoing. Please let me know if you have any questions or require further information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ted Robbins', with a stylized flourish extending to the right.

Ted Robbins  
Chief Administrative Officer

Attachments (3)

cc: Ian Jesney, Acting General Manager, Integrated Water Services, CRD

Summarize and analysis of previous odour complaints (last two years and background)			
1	Summary of odour regulations in other jurisdictions	Crystal/Chris	Nov-04
2	Analyze complaints' trends as well as geographical and seasonal distribution	Crystal/Sadra	Nov-11
3	Correlate complaints with operating conditions (wet weather, DensaDeg vs. plate settler tanks in use, etc.) or maintenance activities (cleaning tanks, scrubber media replacement, etc.)	Crystal/Denis	Nov-18
4	Summarize all finding in a TM	Crystal/Chris	Dec-02

Complete  
Complete  
Complete  
Complete

Confirm the performance of the odour control systems			
<i>Audit of the odour collection system:</i>			
1	Field investigation to confirm the integrity of the tank covers, note deficiencies and document recommendations	Crystal/Sadra	Nov-04
2	Review existing H2S data and create a detail scope of future field investigation as highlighted below	Crystal/Sadra	Nov-18
3	Field investigation to measure negative air pressure under all covers	Crystal/Denis	Jan-31
4	Field investigation to measure H2S under all covers and at some untreated sources (HVAC units, vents, etc.)	Crystal	
5	Field investigation to measure the velocity of foul air extraction from each tank	Denis/Contractors	
6	Confirm 6 CFM air extraction from each tank is met	Martina/Sadra	
7	Identify "possible" improvements to the foul air collection system - Recommendations will need to be further assessed	Sadra	Jan-31
<i>Audit of the treatment system:</i>			
1	Confirm the design parameters identified for all units are met	Sadra	Nov-04
2	Review water quality and quantity in the BTF	Sadra/Crystal	Nov-04
3	Review all operating variables for treatment systems (differential pressures, online H2S, air flow rate data, runtime, etc.)	Sadra	Nov-11
4	Confirm the performance of mist eliminators	Sadra/Dave	Nov-11
5	Assess the condition of carbon media in ACFs	Sadra/Denis	Jan-31
6	Review maintenance records and summarize findings	Sadra/Crystal/Dave	Nov-18
7	Collect samples for odour and air quality analysis at the inlet and outlet of each online scrubber (BTF or ACF) to confirm the performance of the units comply with the design objectives		
	a. Develop the scope of sampling, including sample locations and required analysis	Sadra	Oct-28
	b. Schedule, budget, resources, and procurement for sample collection and analysis	Chris	Jan-31
	c. Analysis of results, if necessary	Sadra	Jan-31
8	Identify "possible" improvements to the foul air treatment system - Recommendations will need to be further assessed	Sadra	Nov-25
9	Summarize all findings in a TM	Sadra	Dec-02

Complete  
Complete  
In progress  
In progress  
planned  
planned  
In progress.  
Complete  
Complete  
Complete  
Complete  
Sampling complete - waiting for results  
Complete  
Complete  
Complete  
Planned - Golder  
Planned  
Complete  
Complete

Measure odour at the fenceline and beyond.			
1	Install a weather station at MPWWTP	Dave/Denis	Nov-28
2	Collect samples for odour analysis at the fence line to confirm MPWWTP does not exceed 5 odour units / m3		
	a. Develop the scope of sampling, including sample locations	Sadra/Chris	Oct-28
	b. Schedule, budget, resources and procurement for sample collection and analysis	Chris	Jan-31
	c. Analysis of results, if necessary (Sadra)	Sadra	Jan-31
3	Finalize and complete the VIU project to measure a large number of emitted chemicals associated with MPWWP in the community	Chris/Sadra VIU	Q 2 - 2023
4	Update the odor and H2S dispersion model based on the updated plant emission data and the new weather station installed at the plant	Sadra/Consultant/Chris	Q 2 - 2023

Complete  
Complete  
Complete  
Planned - Golder  
planned  
In progress  
Planned - Golder



September 22, 2021

File: HRP-LTR-CRD-241

Capital Regional District  
510-1675 Douglas Street  
Victoria, BC V8W 2G5

Attention: Jacqueline Weston, Project Manager  
[jmweston@crd.bc.ca](mailto:jmweston@crd.bc.ca)

Contract: CAWTP 17-006 - McLoughlin Point Wastewater Treatment Plant  
Subject: LEED Gold Certification

Dear Jacqueline:

As follow-up to the preliminary LEED information submitted with the Acceptance Test Report on December 24, 2021. Harbour Resource Partners is confirming the McLoughlin Point WWTP O&M Building has been granted LEED Gold certification effective September 20, 2021.

Attached is the supporting documentation including the certification for CRD's files.

This submission satisfies the obligations of the Project Agreement, Schedule 5, Section 9.13(i).

If you have any questions, please don't hesitate to contact me directly.

Sincerely,

HARBOUR RESOURCE PARTNERS

A handwritten signature in black ink, appearing to read "JK", is positioned above the typed name of the sender.

Jeremy Klarenbach  
Project Director







# LEED Certification Review Report

This report contains the results of the technical review of an application for LEED® certification submitted for the specified project. LEED certification is an official recognition that a project complies with the requirements prescribed within the LEED rating systems as created and maintained by the U.S. Green Building Council® (USGBC®). The LEED certification program is administered by Green Business Certification Inc. (GBCI®).

## McLoughlin Point WWTP

**Project ID** 1000102415  
**Rating system & version** LEED V4 BD+C: NC  
**Project registration date** 09/25/2017

### Construction Final Review Decision

CERTIFIED: 40-49, SILVER: 50-59, GOLD: 60-79, PLATINUM: 80+

## LEED V4 BD+C: NEW CONSTRUCTION

ATTEMPTED: 64, DENIED: 1, PENDING: 0, AWARDED: 61 OF 110 POINTS

<b>INTEGRATIVE PROCESS</b>	<b>0 OF 1</b>	<b>MATERIALS AND RESOURCES</b>	<b>7 OF 13</b>
Integrative Process	0 / 1	Storage and Collection of Recyclables	Y
<b>LOCATION AND TRANSPORTATION</b>	<b>6 OF 16</b>	Construction and Demolition Waste Mgmt Planning	Y
LEED for Neighborhood Development Location	0 / 16	Building Life-Cycle Impact Reduction	0 / 5
Sensitive Land Protection	1 / 1	Product disclosure & optimization - Environmental Product Declarations	2 / 2
High Priority Site	2 / 2	Product disclosure & optimization - Sourcing of Raw Materials	1 / 2
Surrounding Density and Diverse Uses	0 / 5	Product disclosure & optimization - Material Ingredients	2 / 2
Access to Quality Transit	0 / 5	Construction and Demolition Waste Mgmt	2 / 2
Bicycle Facilities	1 / 1	<b>INDOOR ENVIRONMENTAL QUALITY</b>	<b>10 OF 16</b>
Reduced Parking Footprint	1 / 1	Minimum IAQ Performance	Y
Green Vehicles	1 / 1	Environmental Tobacco Smoke Control	Y
<b>SUSTAINABLE SITES</b>	<b>7 OF 10</b>	Enhanced IAQ Strategies	2 / 2
Construction Activity Pollution Prevention	Y	Low-Emitting Materials	3 / 3
Site Assessment	1 / 1	Construction IAQ Mgmt Plan	1 / 1
Site Development - Protect or Restore Habitat	0 / 2	IAQ Assessment	0 / 2
Open Space	0 / 1	Thermal Comfort	0 / 1
Rainwater Mgmt	3 / 3	Interior Lighting	1 / 2
Heat Island Reduction	2 / 2	Daylight	2 / 3
Light Pollution Reduction	1 / 1	Quality Views	0 / 1
<b>WATER EFFICIENCY</b>	<b>6 OF 11</b>	Acoustic Performance	1 / 1
Outdoor Water Use Reduction	Y	<b>INNOVATION</b>	<b>6 OF 6</b>
Outdoor Water Use Reduction	2 / 2	Innovation	5 / 5
Indoor Water Use Reduction	Y	LEED Accredited Professional	1 / 1
Indoor Water Use Reduction	3 / 6	<b>REGIONAL PRIORITY CREDITS</b>	<b>3 OF 4</b>
Building-Level Water Metering	Y	Rainwater Mgmt	1 / 1
Cooling Tower Water Use	0 / 2	Outdoor Water Use Reduction	1 / 1
Water Metering	1 / 1	Optimize Energy Performance	1 / 1
<b>ENERGY AND ATMOSPHERE</b>	<b>16 OF 33</b>	<b>TOTAL</b>	<b>61 OF 110</b>
Fundamental Commissioning and Verification	Y		
Minimum Energy Performance	Y		
Optimize Energy Performance	14 / 18		
Building-Level Energy Metering	Y		
Fundamental Refrigerant Mgmt	Y		
Enhanced Commissioning	0 / 6		
Advanced Energy Metering	1 / 1		
Demand Response	0 / 2		
Renewable Energy Production	0 / 3		
Enhanced Refrigerant Mgmt	1 / 1		
Green Power and Carbon Offsets	0 / 2		

## CREDIT DETAILS



### Project Information

#### Project Information

**Awarded**

#### DESIGN FINAL REVIEW

The Project Information form has been completed and the supporting documentation has been provided.

#### DESIGN PRELIMINARY REVIEW

The Project Information has been completed and the supporting documentation has been provided.

1. The project title does not clearly reflect the portion of the building/space seeking LEED BD+C: NC certification. Clarification is needed to confirm that the project complies with the Minimum Program Requirement: Must Use Reasonable LEED Boundaries (<http://www.usgbc.org/node/2742911?return=/credits/new-construction/v4/minimum-program-requirements>). The LEED boundary may not unreasonably exclude portions of the building, space, or site to give the project an advantage in complying with credit requirements. The LEED project must accurately communicate the scope of the certifying project in all promotional and descriptive materials and distinguish it from any non-certifying space. Under Interiors, on this page, it states that the LEED project should be defined by a clear boundary such that the LEED project is physically distinct from other interior spaces within the building.

Provide documentation demonstrating that the project documentation, such as narrative or signage examples, is clear about the LEED boundary and scope of work. It must be clear to visitors where the LEED BD+C NC project begins and ends. Update the project name to delineate the LEED BD+C space.



## Integrative Process

Integrative Process  
POSSIBLE POINTS: 1

Withdrawn



## Location And Transportation

**LEED for Neighborhood Development Location**  
POSSIBLE POINTS: 16

Not Attempted

### Sensitive Land Protection

POSSIBLE POINTS: 1  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

Awarded : 1

#### DESIGN PRELIMINARY REVIEW

Option 1: Previously Developed

Awarded.

### High Priority Site

POSSIBLE POINTS: 2  
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

Awarded : 2

#### CONSTRUCTION PRELIMINARY REVIEW

Option 3: Brownfield Remediation

Awarded.

#### DESIGN FINAL REVIEW

The documentation does not demonstrate compliance.

The provided Mid Review Clarification response indicates that additional documentation will be provided during the construction phase.

This credit will receive the second round of review during the Construction Review phase. Re-attempt the credit so it is open for review. For future projects, withdraw credits after the Design Preliminary if re-attempting at Construction Review phase to avoid an appeal.

#### DESIGN PRELIMINARY REVIEW

Option 3: Brownfield Remediation

1. The required documentation has not been provided.

Provide documentation from local authority declaring that the project team has remediated all contaminants on site to the satisfaction of the authority.

Surrounding Density and Diverse Uses  
POSSIBLE POINTS: 5

Not Attempted

Access to Quality Transit  
POSSIBLE POINTS: 5

Not Attempted

### Bicycle Facilities

POSSIBLE POINTS: 1  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

Awarded : 1

#### DESIGN PRELIMINARY REVIEW

Awarded.

It is noted that the vicinity map provided does not appear to show a qualifying bicycle network in that it shows connection to a non-commuter ferry, instead of a ferry used for commuting. Reviewer research has determined the bicycle network connects to at least 10 diverse uses.

### Reduced Parking Footprint

POSSIBLE POINTS: 1  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

Awarded : 1

#### CONSTRUCTION PRELIMINARY REVIEW

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Option 1. No Parking or Reduce Parking

Awarded.

The project has met the exemplary performance threshold for this credit. Exemplary performance must be attempted via an available ID credit and the project must not already have been awarded the maximum two points for exemplary performance.

### DESIGN FINAL REVIEW

The documentation does not demonstrate compliance.

The provided Mid Review Clarification response indicates that additional documentation will be provided during the construction phase.

This credit will receive the second round of review during the Construction Review phase. Re-attempt the credit so it is open for review. For future projects, withdraw credits after the Design Preliminary if re-attempting at Construction Review phase to avoid an appeal.

### DESIGN PRELIMINARY REVIEW

1. The project type office has been selected; however, it appears that this project is best categorized as Industrial.

Provide a revised LEED Form and calculations based on the General light industrial, industrial park, and manufacturing base ratio. Alternatively, provide a narrative supporting the project's classification as office.

2. The preferred parking spaces highlighted on the site plan do not appear to meet the LEED definition of preferred. Preferred spaces are those spaces with the shortest walking distance to the main entrance of the project (exclusive of spaces reserved for people with disabilities).

Provide a revised site plan demonstrating that the parking for carpool vehicles is in a preferred location. Alternatively, provide a narrative demonstrating that the current location is considered preferred.

3. Documentation of permanent signage or pavement markings reserving the preferred parking spaces has not been provided.

Provide photographs or signage details that confirm that the preferred parking spaces are reserved for carpool vehicles.

Note that the LEED v4.1 credit substitution path may provide an alternative to demonstrating compliance. Visit the v4.1 Credit Catalog to view the updated version of this credit. If resubmitting following the v4.1 compliance path, provide documentation as described in the LEED v4.1 Beta Guide for this credit.

### Green Vehicles

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

### CONSTRUCTION FINAL REVIEW

Option 1: Electric Vehicle Charging

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. The provided documentation does not confirm that the work outlined in the Electrical Site Instruction AGJV-SI-128 Rev 0 was completed. For future projects provide documentation confirming that work outlined in Site Instructions is completed.

### CONSTRUCTION PRELIMINARY REVIEW

Option 1: Electric Vehicle Charging

The documentation does not demonstrate compliance.

1. Sufficient information has not been provided to verify that the charging equipment meets the requirements. The provided model (G5 Model) does not appear to be networked or internet addressable.

For future projects or if appealing, provide manufacturer information demonstrating that the installed charging equipment has a charging capacity of at least Level 2 (208-240 volts), meets the relevant regional or local standard for electrical connectors, and is networked or internet addressable.

### DESIGN FINAL REVIEW

The documentation does not demonstrate compliance.

The provided Mid Review Clarification response indicates that additional documentation will be provided during the construction phase.

This credit will receive the second round of review during the Construction Review phase. Re-attempt the credit so it is open for review. For future projects, withdraw credits after the Design Preliminary if re-attempting at Construction Review phase to avoid an appeal.

## **DESIGN PRELIMINARY REVIEW**

### **Option 1: Electric Vehicle Charging**

1. Sufficient information has not been provided to verify that the charging equipment meets the requirements.

Provide manufacturer information demonstrating that the installed charging equipment has a charging capacity of at least Level 2 (208-240 volts), meets the relevant regional or local standard for electrical connectors, and is networked or internet addressable.

2. The preferred parking spaces highlighted on the site plan do not appear to meet the LEED definition of preferred. Preferred spaces are those spaces with the shortest walking distance to the main entrance of the project (exclusive of spaces reserved for people with disabilities).

Provide a revised site plan demonstrating that the parking for green vehicles is in a preferred location. Alternatively, provide a narrative demonstrating that the current location is considered preferred.

3. Documentation of permanent signage or pavement markings reserving the preferred parking spaces has not been provided.

Provide photographs or signage details that confirm that the preferred parking spaces are reserved.

Note that the LEED v4.1 credit substitution path may provide an alternative to demonstrating compliance. Visit the v4.1 Credit Catalog to view the updated version of this credit. If resubmitting following the v4.1 compliance path, provide documentation as described in the LEED v4.1 Beta Guide for this credit.



## Sustainable Sites

### Construction Activity Pollution Prevention

**Awarded**

#### CONSTRUCTION PRELIMINARY REVIEW

Local standards and codes.

Awarded.

### Site Assessment

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

#### DESIGN PRELIMINARY REVIEW

Awarded.

### Site Development - Protect or Restore Habitat

POSSIBLE POINTS: 2

**Not Attempted**

### Open Space

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 1, PENDING: 0, AWARDED: 0

**Denied : 1**

#### DESIGN FINAL REVIEW

The documentation does not demonstrate compliance.

1. The calculations (SSc3 Rev Area Calculations) provided do not align with the open space included in the LEED Form. The calculations appear to include vegetated planters and hardscape as open space; however the LEED Form only appears to include areas of green roof.

If appealing, provide revised calculations, consistent with the LEED Form, to clearly demonstrate the areas of open space contributing to credit achievement.

2. The claimed area in the revised calculations (SSc3 Rev Area Calculations) do not appear to meet the criteria for qualifying as open space. The calculations for the sum of all open spaces (B3), include the sum of all hardscape areas on the site: the asphalt road, the concrete sidewalks adjacent to the road and crossing the road, the parapet, and the patio. Additionally, in the calculations, for the area of open space that is vegetated (B5), the area includes only the inaccessible vegetated planters.

Provide the following:

a. Revised calculations only including qualifying, physically accessible open space that meets one or more of the following criteria:

- pedestrian-oriented paving or turf area with physical site elements that accommodate outdoor social activities;
- recreation-oriented paving or turf area with physical site elements that encourage physical activity;
- garden space with a diversity of vegetation types and species that provide opportunities for year-round visual interest;
- garden space dedicated to community gardens or urban food production;
- preserved or created habitat that meets the criteria of SSc Site Development -Protect or Restore Habitat and also includes elements of human interaction.

b. A revised site plan, if necessary, highlighting only qualifying open space area.

3. The roof surfaces cannot be included in the calculations unless the project has a density of at least 1.5 floor-area ratio. When this area is excluded from the LEED Form, no open space is provided.

If appealing provide a revised LEED Form and supporting documentation as necessary to demonstrate compliance. Note that the LEED v4.1 credit substitution path may provide an alternative to demonstrating compliance, as the requirement for a minimum FAR has been removed. Visit the v4.1 Credit Catalog to view the updated version of this credit. The LEED v4.1 Beta Guide is available here: <http://new.usgbc.org/leed-v41>. All v4 credits are available for substitution. If submitting following the v4.1 compliance path, provide documentation as described in the LEED v4.1 Beta Guide for this credit.

4. The green roof areas claimed do not appear to meet the criteria for qualifying as open space, as the renderings provided in the narrative indicate that access is provided through ladders and stairs which appear to be provided for maintenance of the roof areas. It is not clear that the green roof areas are considered physically accessible to all building occupants.

If appealing, provide revised calculations and site plans, if necessary, including only qualifying open space area.

## DESIGN PRELIMINARY REVIEW

1. The claimed area does not meet the criteria for qualifying as open space.

Provide the following:

- a. A narrative describing how the open space is physically accessible.
- b. Revised calculations, if necessary, including only qualifying open space area.
- c. A revised site plan, if necessary, highlighting only qualifying open space area.

2. The 172 square meters of rock garden does not meet the criteria for vegetated open space.

Provide the following:

- a. Revised calculations, if necessary, including only qualifying open space area.
- b. A revised site plan, if necessary, highlighting only qualifying open space area.

## Rainwater Management

POSSIBLE POINTS: 3

ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

**Awarded : 3** 

## DESIGN FINAL REVIEW

The project meets the requirements using the LEED v4.1 substitution path for this credit, under Percentile of Rainfall Events, 90th Percentile.

## DESIGN PRELIMINARY REVIEW

The project is pursuing the LEED v4.1 substitution path for Percentile of Rainfall Events, 90th Percentile.

1. It is not clear that the entire developed site area has been included in the calculations. The Rainfall Events Calculator notes that the site area included in credit calculations is 41,398 square feet, however, this appears to be the area of the site within the LEED project boundary and excludes the adjacent Wastewater Treatment Plant. The drawings provided indicate that the LEED project building shares roof area with the adjacent building, and it is unclear that the rainfall calculations account for all hardscape and roof areas served by the LID strategies.

Provide the following:

- a. Clarify the areas served by the LID strategies, and demonstrate that the entire developed site area has been included in credit calculations.
- b. Revised Rainfall Events Calculations as required.

2. The provided documentation does not include sufficient detail about the capacity of the infrastructure to infiltrate all rainwater from the 98th percentile rainfall event prior to discharge to the adjacent shoreline.

Provide calculations demonstrating how the total runoff volume, including the runoff volume managed by LID or green infrastructure measures was determined.

## Heat Island Reduction

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**Awarded : 2**

## DESIGN PRELIMINARY REVIEW

Awarded.

It appears that areas of hardscape below the overhang of the vegetated roof areas have been counted in multiple strategies. Each surface may only be counted once, even if it is addressed through multiple strategies. This does not affect credit achievement; however, for future projects ensure that surfaces are only counted once in the calculations.

It appears that the concrete walk is identified as having a three-year aged Solar Reflectance of 0.7, however, per LEED Interpretation 10411, White cement concrete can claim a three-year aged Solar Reflectance of 0.35, or an initial Solar Reflectance 0.70. This does not affect credit achievement; however, for future projects ensure that the correct Solar Reflectance is entered into the calculations.

## Light Pollution Reduction

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

## DESIGN FINAL REVIEW



Uplight: Option 1, BUG Rating Method

Awarded.

Light Trespass: Option 1, BUG Rating Method

Awarded.

## **DESIGN PRELIMINARY REVIEW**

Uplight: Option 1, BUG Rating Method

1. The documentation indicates that the project is demonstrating compliance through Option 1, BUG Rating Compliance; however, the photometric plan indicates foot-candle measurements which greatly exceed the lighting levels. Therefore, it is not clear if all exterior fixtures have been included in the luminaire schedule.

Provide the following:

- a. A revised luminaire schedule that includes all exterior lighting fixtures.
- b. A narrative noting any changes that have been made.

Light Trespass: Option 1, BUG Rating Method

1. The documentation indicates that the project is demonstrating compliance through Option 1, BUG Rating Compliance; however, the photometric plan indicates foot-candle measurements which greatly exceed the lighting levels. Therefore, it is not clear if all exterior fixtures have been included in the luminaire schedule.

Provide the following:

- a. A revised luminaire schedule that includes all exterior lighting fixtures.
- b. A narrative noting any changes that have been made.



## Water Efficiency

### Outdoor Water Use Reduction

**Awarded**

#### DESIGN FINAL REVIEW

Option 1: No Irrigation Required

Awarded.

#### DESIGN PRELIMINARY REVIEW

Option 1: No Irrigation Required

1. It is not clear that the automatic drip system providing irrigation to the green roof is temporary.

Provide a revised narrative describing the temporary irrigation strategy during the establishment period, including the length of time that plantings will be watered and how the installed irrigation systems will be removed or permanently disabled.

### Outdoor Water Use Reduction

**Awarded : 2**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

#### DESIGN FINAL REVIEW

Option 1: No Irrigation Required

Awarded.

#### DESIGN PRELIMINARY REVIEW

Option 1: No Irrigation Required

1. WEp Outdoor Water Use is pending clarification.

Refer to the comments in the prerequisite and resubmit this credit.

### Indoor Water Use Reduction

**Awarded**

#### DESIGN FINAL REVIEW

Usage-based Calculation, 38.29%

Awarded.

#### DESIGN PRELIMINARY REVIEW

Usage-based Calculation, 40.04%

1. The architectural drawings indicate that the project includes a dishwasher and commercial clothes washer but documentation has not been provided.

Provide the following:

a. A clarification narrative and revised LEED Form if the project scope includes these appliances.

b. Manufacturer documentation/cut sheets to confirm that the appliances comply with the requirements.

2. The percent of males expected to use restrooms with urinals in the Indoor Water Use Calculator is listed as 100% and has not been adjusted to reflect the male occupants' use of the barrier free restrooms without urinals that are shown on the floor plans in PI Project Information.

Provide the following:

a. A revised Indoor Water Use Calculator with the percent of males expected to use restrooms with urinals adjusted to account for the male occupants' use of the restrooms without urinals.

b. A narrative to explain any special circumstances.

### Indoor Water Use Reduction

**Awarded : 3**

POSSIBLE POINTS: 6

ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

**DESIGN FINAL REVIEW**

Usage-based Calculation, 38.29%

Awarded.

**DESIGN PRELIMINARY REVIEW**

Usage-based Calculation, 40.04%

1. WEp Indoor Water Use is pending clarification.

Refer to the comments in the prerequisite and resubmit this credit.

**Building-Level Water Metering**

**Awarded**

**DESIGN PRELIMINARY REVIEW**

Awarded.

**Cooling Tower Water Use**

**Withdrawn**

POSSIBLE POINTS: 2

**Water Metering**

**Awarded : 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**DESIGN PRELIMINARY REVIEW**

Awarded.



## Energy And Atmosphere

### Fundamental Commissioning and Verification

**Awarded**

#### CONSTRUCTION PRELIMINARY REVIEW

Awarded.

### Minimum Energy Performance

**Awarded**

#### DESIGN APPEAL REVIEW

The Minimum Energy Performance Calculator has been revised and states that the project has achieved an energy cost savings of 30.1%. The project team has provided a supplemental narrative indicating that ASHRAE 90.1-2013 as well as LEED Interpretation 10481 have been utilized. When utilizing LEED Interpretation 10481, the project team receives an additional 5% energy cost savings, for a final savings of 35.1%. The total predicted annual energy consumption for the project is 345,112 kWh/year of electricity and 198 therms/year of natural gas.

Items that do not require a response for this project, but should be considered for future projects:

1. The Lighting tab of the Minimum Energy Performance Calculator indicates that the mechanical/electrical rooms have been modeled with a lighting power density of 10.20 Watts per square meter in the Baseline building. ASHRAE 90.1-2013 requires that these spaces be modeled with a lighting power density of 4.52 Watts per square meter. For future projects, ensure that the correct lighting power densities from ASHRAE 90.1-2013 are incorporated into the Baseline building.

#### DESIGN FINAL REVIEW

The Minimum Energy Performance Calculator has been revised to address the issues outlined in the Preliminary Review and states that the project has achieved an energy cost savings of 22.8%. The total predicted annual energy consumption for the project is 350,914 kWh/year of electricity.

#### DESIGN PRELIMINARY REVIEW

Modeled energy cost savings of 23.8% have been claimed with Option 1: Whole Building Energy Simulation. However, to demonstrate compliance, the following comments requiring a project response (marked as Mandatory) must be addressed for the Final Review.

##### REVIEW COMMENTS REQUIRING A PROJECT RESPONSE (Mandatory)

1. Provide the following:

a. A narrative response to each Preliminary Review comment below.

b. A narrative describing any additional changes made to the energy models between the Preliminary and Final Review phases not addressed by the responses to the review comments. The mandatory comments are perceived to reduce the projected savings for the Proposed design. If the projected savings increase substantially in the Final submission, without implementing any optional comments that may improve performance, a narrative explanation for these results must be provided.

2. It is unclear if the Baseline system type modeled is consistent with the system mapping from Table G.3.1.1.A. The file "100010245 McLoughlin Point WWTP - Greenbuild Workzone.pdf" indicates that the Baseline System Type is #4 because the boilers are only used in emergencies. However, the controls sequence on the mechanical plans provided in PI Project Information indicate that these are "auxiliary" boilers. Additionally, the control sequence also states that the boilers engage when the heat pump plant fails to maintain the correct temperature setpoint. This language appears to indicate that the boilers may not be emergency, but may there to provide additional capacity. Per LEED Interpretation 10285, the system type for this building would need to be #3 packaged rooftop air conditioner with fossil fuel furnace.

Update the Baseline model to utilize System Type #3. Alternatively, provide sufficient documentation to verify that the boilers are emergency only.

3. It is unclear if the packaged rooftop heat pumps in the Baseline model were modeled according to Section G3.1.3.1, which requires that the electric air-source heat pumps are modeled with electric auxiliary heat that only energizes on the last thermostat stage and when the outdoor air temperature is less than 40 degrees F. Although the General HVAC tab on the Minimum Energy Performance Calculator (MEPC) indicates that this requirement does not apply to the Baseline when district heating/cooling has been selected, it appears that this only applies when the project team utilizes Path 1 for the district energy modeling method. Per ASHRAE Interpretation 90.1-2007-09, this means that the heat pump and auxiliary heat should operate together at low temperature conditions, with the compressor as the lead machine. The outside air cutoff temperature for the compressor must be no greater than the temperature associated with the low-temperature heating efficiency requirements of Table 6.8.1B (17 degrees F). For packaged heat pump units smaller than 65,000 Btuh and packaged terminal heat pumps, the HSPF rating accounts for electric auxiliary operation and includes test conditions at 17 degrees F.

Indicate the modeled characteristics of the electric auxiliary heat in the Minimum Energy Performance Calculator including the temperature at which the auxiliary heat engages and the outside air temperature cutoff for the compressor. If the compressor

low temperature cutoff is modeled as greater than 17 degrees F for packaged heat pump units smaller than 65,000 Btuh or packaged terminal heat pumps, describe how the Baseline efficiency of the heat pump was modeled to reflect the HSPF rating including auxiliary heating energy. Provide screenshots from the modeling program to verify that this requirement has been correctly modeled.

4. The Baseline model fan equivalent full load hours (determined by dividing the total annual fan consumption by the input total fan power) are 4,579 hours/year, which is unexpectedly high given the anticipated schedule of operation for the project. This is significantly higher than the Proposed fan equivalent full load hours of 1,606 hours/year. It is unclear why the Baseline fans are operating significantly longer than the Proposed fans, even when considering maintaining of setpoints during unoccupied periods.

Update the MEPC to include all required information on the Schedules tab. Confirm that the HVAC system models reflect all mandatory controls from Section 6, and reflect the anticipated schedule of operation for the building. Provide screenshots from the modeling program to verify the operation of both the Proposed and Baseline fans and verify that the schedules are identical between both models. After making any necessary changes to the model, provide a narrative justifying the high equivalent full load hours of operation for fans.

5. The General Information tab of the MEPC indicates that the district energy system average efficiencies were determined from mechanical schedules and product information sheets. However, the file "WWTP\_District Energy Supporting Calcs.xlsx" appears to indicate that only the capacity of the district energy system was broken out between the two buildings. It is unclear how the average efficiencies were determined. Per the LEED BD+C v4 Reference Guide District Energy Systems section, "efficiencies and losses may be determined and modeled at any level of time resolution, from hourly to annual. However, the time resolution must be sufficiently granular to capture and reasonably represent any significant time- or load-dependent interactions between systems."

Provide additional documentation and calculations to verify how the average (i.e. inclusive of part-load performance) plant efficiencies were determined.

6. It appears that a user-generated spreadsheet was provided with information regarding the outputs.

Provide output reports directly from the simulation program, such as the BPRM report. The outputs from the simulation program must show both consumptions and demand values for all end-uses.

7. The Minimum Energy Performance Calculator indicates that outside airflow rates have been modeled identically in the Baseline and Proposed Case buildings (as designed). However, Section G3.1.2.6 exception c requires that, when the minimum outdoor air intake flow in the Proposed Case is greater than the amount required by the rating authority or building official (see EQp: Minimum Indoor Air Quality Performance for ASHRAE 62.1-2010 calculations for the outdoor airflow rate required by the rating authority - GBCI), the Baseline Case must be modeled as the greater of the outdoor airflow rate required by the rating authority or the building official and will be less than the Proposed Case. In the case of this building, it appears that Proposed ventilation systems provide outdoor airflow rates that significantly exceed ASHRAE 62.1-2010 minimums (3,671 cfm or 1,732 l/s).

Provide additional documentation to confirm that the Baseline Case has been modeled as the greater of the outdoor airflow rate required by the rating authority or the building official.

REVIEW COMMENTS THAT DO NOT REQUIRE A PROJECT RESPONSE FOR THIS PROJECT, BUT SHOULD BE CONSIDERED AS EDUCATIONAL NOTES FOR FUTURE PROJECTS (Optional)

8. It is unclear whether thermal zoning has been modeled the same in the Baseline and Proposed Cases as required by Table G3.1.7 because per the Air-Side HVAC tab of the MEPC, the Proposed includes approximately 35 systems whereas the Baseline includes approximately 60 systems. For this building, it seems that the number of systems should be identical between both buildings.

9. It appears that responses were not provided to all Quality Assurance checks on the Performance\_Outputs\_1 tab of the MEPC. Please ensure that responses are provided for all applicable Quality Assurance checks, even if the check appears to be in error.

## Optimize Energy Performance

POSSIBLE POINTS: 18  
ATTEMPTED: 14, DENIED: 0, PENDING: 0, AWARDED: 14

**Awarded : 14**

### REVISED REVIEW COMMENT

Option 1: Whole-Building Energy Simulation indicates an energy cost savings of 35.1%.

Awarded.

### DESIGN FINAL REVIEW

Option 1: Whole-Building Energy Simulation indicates an energy cost savings of 22.8%.

Awarded.

### DESIGN PRELIMINARY REVIEW

Modeled energy cost savings of 23.8% have been claimed with Option 1: Whole Building Energy Simulation.

1. Refer to the comments within EAp Minimum Energy Performance and resubmit this credit.

**Building-Level Energy Metering**

**Awarded**

**DESIGN PRELIMINARY REVIEW**

Awarded.

**Fundamental Refrigerant Management**

**Awarded**

**DESIGN PRELIMINARY REVIEW**

Awarded.

**Enhanced Commissioning**

**Attempted**

POSSIBLE POINTS: 6

**Advanced Energy Metering**

**Awarded : 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**DESIGN PRELIMINARY REVIEW**

Awarded.

**Demand Response**

**Not Attempted**

POSSIBLE POINTS: 2

**Renewable Energy Production**

**Not Attempted**

POSSIBLE POINTS: 3

**Enhanced Refrigerant Management**

**Awarded : 1**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**DESIGN PRELIMINARY REVIEW**

Option 2: Calculation of refrigerant impact

Awarded.

Please note the project is served by a district energy system (DES), and the full capacity of the upstream system has been included within the calculations for this credit. For future projects, provide two separate LEED Form calculations; one for the district cooling plant and one for the project building to demonstrate that each separately complies with the credit requirements. If either of the calculations are in non-compliance, then the project team may demonstrate compliance using the weighted average refrigerant impact for the project building as described in the Further Explanations, Calculations section of the LEEDv4 BD+C Reference Guide. In this case, credit compliance is not affected.

**Green Power and Carbon Offsets**

**Not Attempted**

POSSIBLE POINTS: 2



## Materials And Resources

### Storage and Collection of Recyclables

**Awarded**

#### DESIGN PRELIMINARY REVIEW

Awarded.

### Construction and Demolition Waste Management Planning

**Awarded**

#### CONSTRUCTION PRELIMINARY REVIEW

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. The construction waste management plan (CWMP) is not complete. For future projects, provide a CWMP that includes the anticipated percentage of total waste that the material streams represent, where the materials will be taken and how the recycling facility will process the material.

### Building Life-Cycle Impact Reduction

POSSIBLE POINTS: 5

**Not Attempted**

#### DESIGN PRELIMINARY REVIEW

Option 4: Whole-building Life-cycle Assessment

1. The required documentation has not been provided. It is not clear how the credit requirements have been met through the use of a Sustainable Return on Investment Analysis Framework.

Provide a revised LCA Report that demonstrates that the proposed and baseline building wall, roof, and floor assemblies follow the performance requirements of the building envelope as defined in ASHRAE 90.1-2010, Appendix G, Opaque Assemblies, Vertical Fenestration, Skylights, and Roof Solar Reflectance and Thermal Emittance sections, for the project's climate zone. Refer to the Step-by-Step Guidance section of the LEED BD+C v4 Reference Guide for a list of acceptable tools and methodology to conduct a Whole-Building Life-Cycle Assessment.

Note that Pilot Credit: Informing Design Using Triple Bottom Line Analysis is available in the Pilot Credit Library, which may assist in documenting compliance for the Sustainable Return on Investment Analysis strategy. Note also that Informing Design Using Triple Bottom Line Analysis cannot be used as an Alternative Compliance Path to this credit.

### Building Product Disclosure and Optimization - Environmental Product Declarations

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**Awarded : 2**

#### CONSTRUCTION PRELIMINARY REVIEW

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Option 1, Environmental Product Declaration, 45.5 weighted products.

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. The documentation provided for the following products is not provided or does not comply with requirements:

- row 18 Soprema Soprema Sopravap'R (not submitted)
- row 21 Owens Corning EcoTouch QUIETZONE PINK FIBERGLAS Acoustic Insulation (not submitted)
- row 22 Hamilton Hamilton Red Line- Load & Finish (not submitted)
- row 23 CGC Sheetrock Brand Glass-Mat Mold Tough Firecode X (not submitted)
- row 42 and 43 Basalite 140mm and 190mm concrete CMU blocks (duplicates and not submitted)

For future projects, provide manufacturer documentation, with relevant sections highlighted, that meet one of the disclosure criteria below:

- i. A Product-specific declaration that includes a publicly available, critically reviewed life-cycle assessment conforming to ISO 14044 that has at least a cradle-to-gate scope.
- ii. An industry-wide or product-specific Type III Environmental Product Declaration that conforms to ISO 14025, 14040, 14044,

and EN 15804 or ISO 21930 and has at least a cradle-to-gate scope.

2. The Basalite 140mm and 190mm concrete CMU blocks (rows 42 and 43) appear to be variations of the same product, and therefore it is unclear if they can be considered separate products. For future projects, refer to the following resource for more information regarding how to classify a product: <http://www.usgbc.org/resources/does-item-count-product>. Adjust the BPDO Calculator as necessary, so this product type is counted once.

3. The Ocean Concrete Flowcrete HRWR 110Max Slump (row 10) has been entered into the BPDO Calculator as Product-specific Type III External EPD; however, the provided documentation does not appear to support this claim; the documentation is an Industry-Wide EPD (removed 0.5). For future projects, ensure the products are classified appropriately within the calculator.

When recalculated, the weighted number of products with EPDs is 20.5.

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Option 2. Embodied Carbon/LCA Optimization, 9.5 weighted products.

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. The supporting documentation for the Ocean Concrete Flowcrete HRWR 110Max Slump (row 10) does not demonstrate that the flyash is sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site. For future projects, only products sourced (extracted, manufactured, purchased) within 100 miles (160 km) of the project site are valued at twice their base contributing cost (or number of products), up to a maximum of 200% of cost or 2 products.

When recalculated, the weighted number of products with multi-attribute optimization is 8.5.

Note that LEED v4.1 credit substitutions should be indicated through LEED Online by selecting the "I am pursuing a LEED v4.1 credit substitution on this credit" checkbox. For future projects, if submitting following the v4.1 compliance path, complete the v4.1 LEED Form, applicable LEED v4.1 Calculators and provide all required documentation as described in the LEED v4.1 Beta Guide for those credits. Note that the v4.1 LEED Forms can be found in LEED Online under Sample Forms, see: <http://leedonline-api.usgbc.org/Credit/sampleForm>. For further guidance for substituting a LEED v4.1 credit, see: [http://www.usgbc.org/resources/leed-v41-credit-substitutions-v4-projects?utm\\_source=website&utm\\_medium=article&utm\\_campaign=leed-v4-1](http://www.usgbc.org/resources/leed-v41-credit-substitutions-v4-projects?utm_source=website&utm_medium=article&utm_campaign=leed-v4-1)

## Building Product Disclosure and Optimization - Sourcing of Raw Materials

POSSIBLE POINTS: 2

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

Awarded : 1 

### CONSTRUCTION FINAL REVIEW

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Responsible Sourcing of Raw Materials, 19%

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. The following products used the CaGBC's LEED Canada v2009 Portland Cement Reduction Calculator to determine recycled content for Ready-Mix Concrete, which is not appropriate under LEED v4 BD+C:

- row 10 Ocean Concrete Flowcrete HRWR 110Max Slump, 25 MPA 5% 20mm, Product Code 320PF0 - Mix #6
- row 48 Ocean Concrete Flowcrete HRWR 110Max Slump, 20@48<4% 20mm Product Code 335PF6 - Mix #42
- row 49 Ocean Concrete Flowcrete HRWR 110Max Slump, 40MPA SF S/C Product Code 340PF0 - Mix #63
- row 50 Ocean Concrete Flowcrete HRWR 110Max Slump, 30 Mpa <4% 20mm Product Code SHOT40SF - Mix #59
- row 51 Ocean Concrete Flowcrete HRWR 110Max Slump, 20@48<4%20mm Product Code V320PF0 - Mix #2
- row 52 Ocean Concrete Flowcrete HRWR 110Max Slump, 40MPA SF S/C Product Code GWG335X6 - Mix #42

For future projects, calculate the recycled content of cement by either using the mass of the recycled supplementary cementitious materials (SCMs) as a proportion of the mass of the total cementitious materials only, or by using the mass of the recycled SCMs as a proportion of the entire concrete mix (including aggregates and sand). Note also that each individual concrete mix that arrives to the site as a mixed product, ready to pour, is considered a separate product according to the MR Overview section of the LEED v4 BD+C Reference Guide. Therefore, the recycled content of each mix must be documented separately by the manufacturer and each mix must be listed separately in the Building Products calculator.

2. The supporting documentation for the following product(s) consultant's summary sheets, not manufacturer documentation:

-rows 42-47 Next Level Stormwater Management green roof products

For future projects, provide manufacturer documentation demonstrating that products meet at least one of the sustainable extraction criteria listed in the credit requirements.

3. The provided documentation for the Steelcase Base-90 degree (row 33) and Linea Linear Wood Ceilings and Wall Panels (row



39) does not include invoices demonstrating FSC.

For future projects, provide invoices for the products that:

- Include the vendor's CoC certificate code,
- Itemize FSC-certified products and specific FSC claims (the invoice may aggregate the value of products, provided the cost of FSC products is isolated from other wood products and the vendor's CoC certificate code is on the invoice),
- Show the entity being invoiced and indicate that the delivery is intended for the LEED project.

4. The form indicates that several products (Steelcase Base-90 degree (row 33) and Linea Linear Wood Ceilings and Wall Panels (row 39)) meet the FSC sustainability criterion as well as the post-consumer recycled content criterion. Note that FSC certified recycled content may not be counted as both FSC certified and recycled content. FSC 100% products must be listed as meeting the FSC criterion only, while FSC Recycled products must be listed as meeting only the post-consumer recycled content criterion. Additionally, FSC Mix products must be listed as either compliant with the FSC criterion OR one of the recycled content criterion, but not both (unless manufacturer documentation is provided confirming the minimum thresholds for both the FSC criterion and one of the recycled content criteria are met). For recycled content claims, the material must meet the definition of ISO 14021.

For future projects, provide manufacturer documentation for the above products to confirm the type of FSC certification and to clarify any recycled content claims. Provide revised calculations that list recycled content and FSC certified percentages as outlined above and ensure no double-counting. For more information regarding FSC labeling, refer to the following website: <http://ic.fsc.org/en/our-impact/realities-from-the-forest/do-you-know-the-difference-between-the-fsc-labels>.

5. Extended Producer Responsibility documentation for Steelcase Base-90 degree (row 33) has been provided, however, it is unclear from the supporting documentation which Steelcase products are covered within the program. It is also unclear if the other Steelcase products listed in the calculator (rows 29-32, 34 and 37) may be eligible for this program.

For future projects, provide the following:

a. additional manufacturer documentation for each contributing product describing the EPR program and including contact information and proof that the product purchased for the project is included in the program, or describing the recycling process and stating the average rate of return for the material.

b. Revised calculations, as needed.

6. The revised BPDO Calculator includes several revisions such as combining multiple products into one line (e.g. Steelcase Leap Chair previously rows 29 and 31, Basalite CMU, previously rows 42 and 43, and Coalesse-Steelcase Akira tables, previously rows 36 and 37), with revised material costs.

For future projects, when revisions are made, provide a narrative clarifying the revisions, and provide manufacturer documentation demonstrating that products meet at least one of the sustainable extraction criteria listed in the credit requirements.

7. The supporting documentation for the Linea Linear Wood Ceilings and Wall Panels (row 39), and Soprema Sopralene Flam 250, 4.0mm thick, SBS 250 g/square metre non-woven polyester (row 14) does not include all the information required to confirm the entire product meets the local criteria.

For future projects, provide detailed documentation demonstrating that, for products marked in the calculator as meeting the local criteria, all extraction, manufacturing, purchasing, and distribution of the product and its materials occurred within 100 miles (160 km) of the project site.

Adjusting for the above discrepancies results in 15.9%.

## **CONSTRUCTION PRELIMINARY REVIEW**

The project is pursuing the LEED v4.1 substitution path for this credit.

Responsible Sourcing of Raw Materials, 20%

1. The supporting documentation for Ocean Flowcrete HRWR 110Max Slump (row 10) does not include all the information required to confirm the entire product meets the local criteria. The Flyash does not appear to meet local criteria.

Provide detailed documentation demonstrating that, for products marked in the calculator as meeting the local criteria, all extraction, manufacturing, purchasing, and distribution of the product and its materials occurred within 100 miles (160 km) of the project site.

2. The supporting documentation for the following product(s) consultant's summary sheets, not manufacturer documentation:

-rows 45-50 Next Level Stormwater Management green roof products (LEED form)

Provide manufacturer documentation demonstrating that products meet at least one of the sustainable extraction criteria listed in the credit requirements.

3. It is not clear how the recycled content was determined for Ocean Flowcrete HRWR 110Max Slump (row 10).

Calculate the recycled content of cement by either using the mass of the recycled supplementary cementitious materials (SCMs) as a proportion of the mass of the total cementitious materials only, or by using the mass of the recycled SCMs as a proportion of the entire concrete mix (including aggregates and sand). Note also that each individual concrete mix that arrives to the site as a

mixed product, ready to pour, is considered a separate product according to the MR Overview section of the LEED v4 BD+C Reference Guide. Therefore, the recycled content of each mix must be documented separately by the manufacturer and each mix must be listed separately in the Building Products calculator.

4. The provided documentation for the Steelcase Base-90 degree (row 34) and Linea Linear Wood Ceilings and Wall Panels (row 41) does not include invoices demonstrating FSC.

Provide invoices for the products that:

- Include the vendor's CoC certificate code,

- Itemize FSC-certified products and specific FSC claims (the invoice may aggregate the value of products, provided the cost of FSC products is isolated from other wood products and the vendor's CoC certificate code is on the invoice),

- Show the entity being invoiced and indicate that the delivery is intended for the LEED project.

5. The form indicates that several products (Steelcase Base-90 degree (row 34) and Linea Linear Wood Ceilings and Wall Panels (row 41)) meet the FSC sustainability criterion as well as the post-consumer recycled content criterion. Note that FSC certified recycled content may not be counted as both FSC certified and recycled content. FSC 100% products must be listed as meeting the FSC criterion only, while FSC Recycled products must be listed as meeting only the post-consumer recycled content criterion. Additionally, FSC Mix products must be listed as either compliant with the FSC criterion OR one of the recycled content criterion, but not both (unless manufacturer documentation is provided confirming the minimum thresholds for both the FSC criterion and one of the recycled content criteria are met). For recycled content claims, the material must meet the definition of ISO 14021.

Provide manufacturer documentation for the above products to confirm the type of FSC certification and to clarify any recycled content claims. Provide revised calculations that list recycled content and FSC certified percentages as outlined above and ensure no double-counting. For more information regarding FSC labeling, refer to the following website: <http://ic.fsc.org/en/our-impact/realities-from-the-forest/do-you-know-the-difference-between-the-fsc-labels>.

6. Extended Producer Responsibility documentation for Steelcase furniture (row 34) has been provided, however, it is unclear from the supporting documentation which Steelcase products are covered within the program. It is also unclear if the other Steelcase products listed in the calculator (rows 29-33, 35 and 39) may be eligible for this program.

Provide the following:

a. additional manufacturer documentation for each contributing product describing the EPR program and including contact information and proof that the product purchased for the project is included in the program, or describing the recycling process and stating the average rate of return for the material.

b. Revised calculations, as needed.

Adjusting for the above discrepancies results in 16.2%.

Note that LEED v4.1 credit substitutions should be indicated through LEED Online by selecting the "I am pursuing a LEED v4.1 credit substitution on this credit" checkbox. For future projects, if submitting following the v4.1 compliance path, complete the v4.1 LEED Form, applicable LEED v4.1 Calculators and provide all required documentation as described in the LEED v4.1 Beta Guide for those credits. Note that the v4.1 LEED Forms can be found in LEED Online under Sample Forms, see: <http://leedonline-api.usgbc.org/Credit/sampleForm>. For further guidance for substituting a LEED v4.1 credit, see: [http://www.usgbc.org/resources/leed-v41-credit-substitutions-v4-projects?utm\\_source=website&utm\\_medium=article&utm\\_campaign=leed-v4-1](http://www.usgbc.org/resources/leed-v41-credit-substitutions-v4-projects?utm_source=website&utm_medium=article&utm_campaign=leed-v4-1)

## Building Product Disclosure and Optimization - Material Ingredients

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

Awarded : 2 

### CONSTRUCTION FINAL REVIEW

The project meets the requirements using the LEED v4.1 substitution path for this credit.

Option 1: Material Ingredient Reporting, 25.5 weighted products

Awarded.

Option 2: Material Ingredient Optimization, 5 weighted products

Awarded.

### CONSTRUCTION PRELIMINARY REVIEW

The project is pursuing the LEED v4.1 substitution path for this credit.

Option 1: Material Ingredient Reporting, 27 weighted products

1. The ingredients on the Nested HPD for Soprema Sopraboard (row 12) have a range of over 20%, there is no reason for the large amount included in the substance notes or other material notes. Therefore, this ingredient cannot be considered

"Characterized". Provide an updated HPD with this issue clarified, or document the product with another of the allowed programs. See section 2.2.1.2 in the HPD Open Standard for more information: [http://www.hpd-collaborative.org/wp-content/uploads/2018/07/HPDC\\_Standard\\_Version2.1.1\\_LOCKED.pdf](http://www.hpd-collaborative.org/wp-content/uploads/2018/07/HPDC_Standard_Version2.1.1_LOCKED.pdf)

2. Supporting documentation has not been provided or does not align with the product description the following products:

- row 14 Soprema Sopralene Flam 250 (document description does not align)
- row 15 Soprema Sopraflash Flam Stick (not provided)
- row 20 Rockwool Comfortbatt (not provided)
- row 30 Steelcase Player Chair (not provided)
- row 36 Coalesse Akira Table (not provided)
- rows 45-47 Next level Stormwater Management green roof products, (unclear which product the certificate covers)

Provide compliant documentation for the product(s) based on the programs listed in the Credit Requirements.

3. The Declare label provided for the CGC 7/8" MARS High-NRC(80/35) Acoustic Panels (row 28) is listed as LBC Compliant, and there are proprietary ingredients for more than 0.1% of the total. This does not disclose the ingredients to 1,000 ppm as required.

Provide compliant documentation for the product(s) based on the programs listed in the Credit Requirements.

4. The following products appear to be variations of the same product, and therefore it is unclear if they can be considered separate products because they have the same material, formulation, manufacturer, and function:

- row 29 and 31 Steelcase Leap Chair
- row 36 and 37 Coalesse Akira Table

Refer to the following resource for more information regarding how to classify a product: <http://www.usgbc.org/resources/does-item-count-product>. Adjust the BPDO Calculator as necessary, so this product type is counted once.

5. The CGC 7/8" MARS High-NRC(80/35) Acoustic Panels (row 28) Declare labels is not third party verified. Similarly, document for Rockwool Comfortbatt (row 20) is a manufacturer inventory which is not third party verified.

Provide compliant documentation for the product(s) based on the programs listed in the Credit Requirements. Note that third party verification is noted on the Declare label where applicable.

Adjusting for the above discrepancies results in 18 weighted products.

-----

Option 2: Material Ingredient Optimization, 8 weighted products

1. Documentation has not been provided or does not meet the requirements for the following products:

- row 23 CGC Sheetrock Brand Glass-Mat Mold Tough Firecode X
- row 24 CGC Sheetrock Brand Panels Firecode X
- row 28 CGC 7/8" MARS High-NRC(80/35) Acoustic Panels
- rows 45-47 Next level Stormwater Management green roof products

Provide documentation which meets the any of the following criteria:

- i. Manufacturer Inventory or Health Product Declaration: The product has demonstrated a chemical inventory to at least 0.01% by weight (100 ppm) with no GreenScreen LT-1 hazards or GHS Category 1 hazards. The HPD or Manufacturer Inventory must be third party verified.
- ii. Manufacturer Inventory or HPD: The product has demonstrated a chemical inventory to at least 0.01% by weight (100ppm) and at least 75% by weight of product is assessed using GreenScreen Benchmark assessment. The remaining 25% by weight of product has been inventoried. The GreenScreen assessment must be publicly available. The HPD or Manufacturer Inventory must be third-party verified, or Living Product Challenge certified products that include a Red List Free Declare label.
- iii. Declare labels designated as Red List Free that are third-party verified.
- iv. Cradle to Cradle. Product has Material Health Certificate or is Cradle to Cradle Certified™ under standard version 3 or later with a Material Health achievement level at the Bronze level or higher.

Adjusting for the above discrepancies results in 2 weighted products.

Note that LEED v4.1 credit substitutions should be indicated through LEED Online by selecting the "I am pursuing a LEED v4.1 credit substitution on this credit" checkbox. For future projects, If submitting following the v4.1 compliance path, complete the v4.1 LEED Form, applicable LEED v4.1 Calculators and provide all required documentation as described in the LEED v4.1 Beta Guide for those credits. Note that the v4.1 LEED Forms can be found in LEED Online under Sample Forms, see: <http://leedonline-api.usgbc.org/Credit/sampleForm>. For further guidance for substituting a LEED v4.1 credit, see: [http://www.usgbc.org/resources/leed-v41-credit-substitutions-v4-projects?utm\\_source=website&utm\\_medium=article&utm\\_campaign=leed-v4-1](http://www.usgbc.org/resources/leed-v41-credit-substitutions-v4-projects?utm_source=website&utm_medium=article&utm_campaign=leed-v4-1)

## Construction and Demolition Waste Management

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

Awarded : 2

### CONSTRUCTION FINAL REVIEW

Option 1: Diversion, Path 2, 82%

Awarded.

---

### CONSTRUCTION PRELIMINARY REVIEW

Option 1: Diversion, Path 2, 93%

1. MRp Construction and Demolition Waste Management Planning is pending clarifications.

Refer to the comments within the prerequisite and resubmit this credit.

2. The waste tracking document indicates that plastic materials have been sent to a waste to energy facility, but it is not clear if the facility meets the relevant EN standards and there were no other diversion methods available.

Provide documentation to confirm that the waste to energy facility meets the relevant EN Standards and there were no other diversion methods available.



## Indoor Environmental Quality

### Minimum Indoor Air Quality Performance

**Awarded**

#### DESIGN FINAL REVIEW

Mechanically Ventilated Spaces

Awarded.

#### DESIGN PRELIMINARY REVIEW

1. The Ventilation Rate Procedure (VRP) calculations provided indicate that some of the ventilation system(s) are single zone; however, it appears that FCU 71-001, FCU 71-003, FCU 71-009, and FCU 71-011 are more appropriately classified as multiple zone recirculating because these systems serve more than one type of ventilation zone. Please refer to the definition of ventilation zone in ASHRAE 62.1-2010 and note that this definition is distinctly different from a thermal zone.

Provide the updated VRP calculations for the FCUs indicated above using the multiple zone recirculating calculation methodology.

2. It appears that the calculations for FCU 71-001, FCU 71-002, and FCU 71-003 may not have been performed for the worst-case conditions. Generally, worst-case conditions are during heating mode (zone air distribution effectiveness, Ez, of 0.8 for an overhead distribution system in heating mode). Based on the mechanical schedules/drawings provided in PI Project Information, these FCUs have heating coils and an Ez of 0.8 is expected to be the worst-case condition.

Provide revised Ventilation Rate Procedure calculations with an Ez of 0.8 or provide information to justify the parameters used.

### Environmental Tobacco Smoke Control

**Awarded**

#### DESIGN PRELIMINARY REVIEW

The project meets the requirements using the LEED v4.1 substitution path for this credit.

### Enhanced Indoor Air Quality Strategies

**Awarded : 2**

POSSIBLE POINTS: 2

ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

#### DESIGN FINAL REVIEW

Option 1: Enhanced IAQ Strategies

Awarded.

-----

Option 2: Additional Enhanced IAQ Strategies - Carbon Dioxide Monitoring

Awarded.

#### DESIGN PRELIMINARY REVIEW

Option 1: Enhanced IAQ Strategies

1. No information appears to have been provided to verify that all regularly used exterior entrances have entryway systems installed, as required.

Provide uploads demonstrating that qualifying entryway systems are installed at all regularly used entrances which are not exit-only locations.

2. No information appears to have been provided regarding hazardous gas or chemical storage spaces.

Provide a list of all spaces which contain hazardous gas or chemical storage spaces. The documentation must include a list of spaces, exhaust rates, and separation strategy.

-----

Option 2: Additional Enhanced IAQ Strategies

Awarded.

### Low-Emitting Materials

**Awarded : 3**

POSSIBLE POINTS: 3

ATTEMPTED: 3, DENIED: 0, PENDING: 0, AWARDED: 3

## CONSTRUCTION FINAL REVIEW

The project is pursuing the LEED v4.1 substitution path for this credit.

Product categories attempted: Flooring (92%), Ceilings (96%), Insulation (81%), Furniture (113%)

Awarded.

Items that do not require a response for this project, but should be considered for future projects:

1. The provided narrative response indicates that Furniture row 19 Verge Stool, and Furniture row 20 Emu Chair have been removed from the Low-Emitting Materials Calculator; however, they have not been removed. Compliance is not impacted, for future projects, ensure the Low-Emitting Materials Calculator is completed accurately.

### CEILINGS

2. The test date stated on the VOC emissions evaluation for row 11 CGC USG Radar Acoustical Ceiling Panels, falls outside of the (after) construction period reported for this project in the project details (LEED Online 2017-2020); therefore, it is unclear that the evaluation covers the installed product. The certificate will be accepted for this project only.

For future projects, provide the following:

- a. A narrative confirming that the provided documentation aligns with the products purchased as applicable to the project timeline, or,
- b. An updated certificate for the VOC emissions evaluation for the above noted product in which the certification period falls within the construction period for the project;
- c. A revised calculator, as necessary.

## CONSTRUCTION PRELIMINARY REVIEW

The project is pursuing the LEED v4.1 substitution path for this credit.

Product categories attempted: Flooring (92%), Ceilings (96%), Insulation (87%), Furniture (113%)

Compliance has been demonstrated for one product category (Furniture (112.63%)).

1. VOC emissions evaluations have not been provided for the following products:

- Flooring rows 10, 11, 12 Eternal Step by Forbo
- Flooring row 14 Colorex SD
- Furniture row 19 Verge Stool
- Furniture row 20 Emu Chair (provided certificate is for tables)

Provide the following.

- a. VOC emissions evaluations for the above noted products,
- b. A revised calculation, as necessary.

2. The test date stated on the VOC emissions evaluation for the following products, falls outside of the construction period reported for this project in the project details (LEED Online 2017-2020); therefore, it is unclear that the evaluation covers the installed product:

- Ceilings rows 10, 11, 12 Clean Room, Radar and Mars by CGC
- Insulation row 13 Spray-on Insulation by Monoglass

Provide the following:

- a. A narrative confirming that the provided documentations aligns with the products purchased as applicable to the project timeline, or,
- b. An updated certificate for the VOC emissions evaluation for the above noted product in which the certification period falls within the construction period for the project;
- c. A revised calculator, as necessary.

3. Linea Linear Wood Ceilings and Wall Panels has been inappropriately identified in the calculation as being inherently nonemitting (the supporting documentation on pages 57 and 68 indicate that there may be clear satin sheer finish and black fire retardent treated material included). Note that the full product, including paints/coatings, binders/resins, etc. must be considered. Examples of products that are inherently nonemitting sources of VOCs are stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood flooring if they do not include organic surface coatings, binders, or sealants.

Provide the following:

- a. A revised calculation that appropriately identifies the above noted product as not inherently nonemitting.
- b. The VOC emissions evaluations for this product.

**Construction Indoor Air Quality Management Plan**

POSSIBLE POINTS: 1  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

**CONSTRUCTION PRELIMINARY REVIEW**

Awarded.

**Indoor Air Quality Assessment**

POSSIBLE POINTS: 2  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 0

Attempted

**Thermal Comfort**

POSSIBLE POINTS: 1

Withdrawn

**Interior Lighting**

POSSIBLE POINTS: 2  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

**CONSTRUCTION PRELIMINARY REVIEW**

The project meets the requirements using the LEED v4.1 substitution path for this credit.

C. Controllable Lighting

Awarded.

**Daylight**

POSSIBLE POINTS: 3  
ATTEMPTED: 2, DENIED: 0, PENDING: 0, AWARDED: 2

**Awarded : 2**

**DESIGN FINAL REVIEW**

Option 2: Simulation - Illuminance Calculations, 79.4%

The project meets the LEED v4.1 substitution path for this credit.

Awarded.

**DESIGN PRELIMINARY REVIEW**

Option 2: Simulation - Illuminance Calculations, 79.4%

The project is pursuing the LEED v4.1 substitution path for this credit.

1. The LEED Form narrative indicates that fixed shading devices are provided on the building's exterior for all east-facing first floor spaces.

Provide the following:

- a. glare control devices that meet credit requirements.
- b. information that demonstrates glare-control devices for all transparent glazing in regularly occupied spaces, regardless of whether the glazing receives direct sunlight or whether the space meets the illuminance requirements of this credit.

**Quality Views**

POSSIBLE POINTS: 1

Withdrawn

**Acoustic Performance**

POSSIBLE POINTS: 1  
ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

**DESIGN FINAL REVIEW**

The project meets the requirements using the LEED v4.1 substitution path for this credit.

HVAC Background Noise

Awarded.

Reverberation Time (RT)

Awarded.

### **DESIGN PRELIMINARY REVIEW**

The project meets the requirements using the LEED v4.1 substitution path for this credit.

HVAC Background Noise

1. The Acoustic Performance Calculator has not been provided.

Upload the completed Acoustic Performance Calculator (found under the credit's "Resources" tab in the Credit Library) or equivalent documentation.

Reverberation Time (RT)

1. The Acoustic Performance Calculator has not been provided.

Upload the completed Acoustic Performance Calculator (found under the credit's "Resources" tab in the Credit Library) or equivalent documentation.





## Innovation

### Innovation

POSSIBLE POINTS: 5

ATTEMPTED: 5, DENIED: 0, PENDING: 0, AWARDED: 5

**Awarded : 5**

#### CONSTRUCTION FINAL REVIEW

Exemplary Performance: Reduced Parking Footprint

LEED v4.1 substitution, Option 1. No Parking or Reduce Parking

The requirement for exemplary performance is 60% and the project has documented 64.29%.

Awarded.

#### DESIGN FINAL REVIEW

Innovation: Green Education

The additional documentation demonstrates compliance.

It is noted that the case study includes a project title that does not clearly reflect the portion of the building/space seeking LEED BD+C: NC certification. It must be clear to visitors where the LEED BD+C NC project begins and ends. Update the project name to delineate the LEED BD+C space within the Case study before release.

One point awarded.

-----

Pilot: Water Restoration Certificates

The additional documentation demonstrates compliance.

One point awarded.

-----

Exemplary Performance: Reduced Parking Footprint

The documentation does not demonstrate compliance.

The provided Mid Review Clarification response indicates that additional documentation will be provided during the construction phase.

This credit will receive the second round of review during the Construction Review phase. Re-attempt the credit so it is open for review. For future projects, withdraw credits after the Design Preliminary if re-attempting at Construction Review phase to avoid an appeal.

One point denied.

#### DESIGN PRELIMINARY REVIEW

Innovation: LEED O+M Starter Kit

The project team has developed and implemented operational policies. The project building has implemented an Integrated Pest Management Policy and a Green Cleaning Policy. Copies of the policies have been provided.

One point awarded.

-----

Innovation: Green Education

The project team has developed and implemented a Green Education program. The project building has developed educational tours and green signage. Project Updates and examples of signage have been provided.

1. The documentation provided indicates that guided tours will be provided upon completion of the building, however sufficient information about the tour content has not been provided. Provide documentation demonstrating the development of the guided tours (a script and tour stop description drawing). Alternatively, the project may pursue a different Innovation in Design strategy for the Final Review.

One point pending.

-----

Innovation: Purchasing Policy Lamps

The project team has developed and implemented a strategy to purchase low-mercury lamps. A Reduced Mercury in Lamps calculator and a letter from the owner confirming that only LED lighting will be installed have been provided.

One point awarded.

-----  
**Pilot: Water Restoration Certificates**

The project team has registered for Pilot Credit Water Restoration Certificates. The project team has purchased Water Restoration Certificates® (WRCs) to match the building's annual water budget based on WE credit calculations from outside the project's watershed. The following have been provided: 1) Certificate or proof of purchase and/or a signed contract with the supplier of the water credits and 2) Detail summary of water calculations. Additionally, the registration and survey information have been provided.

1. The annual water budget does not appear to include process water as well as water from washing machines and dishwasher use.

Provide revised documentation to demonstrate that the WRCs purchased match the building's annual water budget based on WE credit calculations (indoor, outdoor, and process water use annual projections).

One point pending.

-----  
**Exemplary Performance: Reduced Parking Footprint**

The project is pursuing exemplary performance for L<sub>T</sub>C: Reduced Parking Footprint. The requirement for exemplary performance is 40% and the project has documented 81.88%. However, the base credit has not been achieved.

1. Refer to the comments within L<sub>T</sub>C: Reduced Parking Footprint. Ensure that any issues noted there are addressed within the exemplary performance documentation when resubmitting this credit.

Alternatively, the project may pursue a different Innovation strategy for the Final Review.

Two points are awarded. Note that due to technical limitations the awarded IN points must be marked pending at this stage of the review process, even though some have been earned. This will be corrected in the Final Review phase.

**LEED Accredited Professional**

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

**Awarded : 1**

**CONSTRUCTION PRELIMINARY REVIEW**

Awarded.



## Regional priority credits

### Rainwater Management

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

### Outdoor Water Use Reduction

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

### Indoor Water Use Reduction

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 0

### Optimize Energy Performance

POSSIBLE POINTS: 1

ATTEMPTED: 1, DENIED: 0, PENDING: 0, AWARDED: 1

### Enhanced Commissioning

POSSIBLE POINTS: 1

### Building Life-Cycle Impact Reduction

POSSIBLE POINTS: 1

TOTAL

110

64

1


0

61

REVIEW SUMMARY

Review

	SUBMITTED	RETURNED	POINTS: SUBMITTED	DENIED	PENDING	AWARDED
<b>Design Preliminary</b>	<b>05/23/2019</b>	<b>06/26/2019</b>	<b>49</b>	<b>0</b>	<b>40</b>	<b>9</b>

Credit	STATUS	TYPE	POINTS: ATTEMPTED	DENIED	PENDING	AWARDED
Project Information	Pending		0	0	0	0
Sensitive Land Protection	Anticipated	Design	1	0	0	1
High Priority Site	Pending	Design	2	0	2	0
Bicycle Facilities	Anticipated	Design	1	0	0	1
Reduced Parking Footprint	Pending	Design	1	0	1	0
Green Vehicles	Pending	Design	1	0	1	0
Site Assessment	Anticipated	Design	1	0	0	1
Open Space	Pending	Design	1	0	1	0
Rainwater Management	Pending	Design	4	0	4	0 
Heat Island Reduction	Anticipated	Design	2	0	0	2
Light Pollution Reduction	Pending	Design	1	0	1	0
Outdoor Water Use Reduction	Pending	Design	0	0	0	0
Outdoor Water Use Reduction	Pending	Design	3	0	3	0
Indoor Water Use Reduction	Pending	Design	0	0	0	0
Indoor Water Use Reduction	Pending	Design	5	0	5	0
Building-Level Water Metering	Anticipated	Design	0	0	0	0
Water Metering	Anticipated	Design	1	0	0	1
Minimum Energy Performance	Pending	Design	0	0	0	0
Optimize Energy Performance	Pending	Design	9	0	9	0
Building-Level Energy Metering	Anticipated	Design	0	0	0	0
Fundamental Refrigerant Management	Anticipated	Design	0	0	0	0
Advanced Energy Metering	Anticipated	Design	1	0	0	1
Enhanced Refrigerant Management	Anticipated	Design	1	0	0	1
Storage and Collection of Recyclables	Anticipated	Design	0	0	0	0
Minimum Indoor Air Quality Performance	Pending	Design	0	0	0	0
Environmental Tobacco Smoke Control	Anticipated	Design	0	0	0	0 
Enhanced Indoor Air Quality Strategies	Pending	Design	2	0	1	1
Daylight	Pending	Design	2	0	2	0 
Acoustic Performance	Pending	Design	1	0	1	0 
Innovation	Pending	Design	5	0	5	0
	Pending		4	0	4	0

**Design Final**

01/16/2020

02/28/2020




36

6

0

29

**Credit**

	STATUS	TYPE	POINTS: ATTEMPTED	DENIED	PENDING	AWARDED
Project Information	Anticipated		0	0	0	0
High Priority Site	Denied	Design	2	2	0	0
Reduced Parking Footprint	Denied	Design	1	1	0	0
Green Vehicles	Denied	Design	1	1	0	0
Open Space	Denied	Design	1	1	0	0
Rainwater Management	Anticipated	Design	4	0	0	4 
Light Pollution Reduction	Anticipated	Design	1	0	0	1
Outdoor Water Use Reduction	Anticipated	Design	0	0	0	0
Outdoor Water Use Reduction	Anticipated	Design	3	0	0	3
Indoor Water Use Reduction	Anticipated	Design	0	0	0	0
Indoor Water Use Reduction	Anticipated	Design	4	0	0	3
Minimum Energy Performance	Anticipated	Design	0	0	0	0
Optimize Energy Performance	Anticipated	Design	9	0	0	9
Minimum Indoor Air Quality Performance	Anticipated	Design	0	0	0	0
Enhanced Indoor Air Quality Strategies	Anticipated	Design	2	0	0	2
Daylight	Anticipated	Design	2	0	0	2 
Acoustic Performance	Anticipated	Design	1	0	0	1 
Innovation	Anticipated	Design	5	1	0	4

**Design Appeal****11/30/2020 12/22/2020****0****0****0****0****Credit****STATUS****TYPE****POINTS:  
ATTEMPTED****DENIED****PENDING****AWARDED**

Minimum Energy Performance

**Anticipated**

Design

**0****0****0****0**

**Construction Preliminary**

06/04/2021

07/19/2021

16

1

7

8




**Credit**

	<b>STATUS</b>	<b>TYPE</b>	<b>POINTS: ATTEMPTED</b>	<b>DENIED</b>	<b>PENDING</b>	<b>AWARDED</b>
High Priority Site	<b>Awarded</b>	Design	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Reduced Parking Footprint	<b>Awarded</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Green Vehicles	<b>Denied</b>	Design	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>
Construction Activity Pollution Prevention	<b>Awarded</b>	Construction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Fundamental Commissioning and Verification	<b>Awarded</b>	Construction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Storage and Collection of Recyclables	<b>Awarded</b>	Design	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Construction and Demolition Waste Management Planning	<b>Awarded</b>	Construction	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Building Product Disclosure and Optimization - Environmental Product Declarations	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Building Product Disclosure and Optimization - Sourcing of Raw Materials	<b>Pending</b>	Construction	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>
Building Product Disclosure and Optimization - Material Ingredients	<b>Pending</b>	Construction	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
Construction and Demolition Waste Management	<b>Pending</b>	Construction	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
Low-Emitting Materials	<b>Pending</b>	Construction	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>
Construction Indoor Air Quality Management Plan	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Interior Lighting	<b>Awarded</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
LEED Accredited Professional	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>



<b>Construction Final</b>	<b>08/19/2021</b>	<b>09/18/2021</b>	<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>
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**Credit**

	<b>STATUS</b>	<b>TYPE</b>	<b>POINTS: ATTEMPTED</b>	<b>DENIED</b>	<b>PENDING</b>	<b>AWARDED</b>
Green Vehicles	<b>Awarded</b>	Design	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
Building Product Disclosure and Optimization - Sourcing of Raw Materials	<b>Awarded</b>	Construction	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b> 
Building Product Disclosure and Optimization - Material Ingredients	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b> 
Construction and Demolition Waste Management	<b>Awarded</b>	Construction	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>
Low-Emitting Materials	<b>Awarded</b>	Construction	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b> 
Innovation	<b>Awarded</b>	Design	<b>5</b>	<b>0</b>	<b>0</b>	<b>5</b>

# REPORT



## SUMMARY REPORT AIR QUALITY MONITORING ESQUIMALT, BC

### CAWTP PROJECT

RWDI #1702958  
March 2, 2020

#### SUBMITTED TO

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<b>Appendix A</b>	<b>Background Monitoring Report</b>
<b>Appendix B</b>	<b>Construction Monitoring Report #1</b>
<b>Appendix C</b>	<b>Construction Monitoring Report #2</b>
<b>Appendix D</b>	<b>Construction Monitoring Report #3</b>
<b>Appendix E</b>	<b>Construction Monitoring Report #4</b>
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<b>Appendix G</b>	<b>Construction Monitoring Report #6</b>



# 1. INTRODUCTION

## **General Summary**

This document is a summary of the air quality monitoring that was completed as part of the Capital Region District's (CRD) Core Area Wastewater Treatment Project (CAWTP). Concerns arose about air quality due to construction activity and specifically whether air quality in Esquimalt schools would be adversely impacted. The initial investigation looked at some background measurements at the schools in question and made an evaluation of the ventilation. There were some initial recommendations made with regard to the ventilation systems.

Subsequent to the initial monitoring a series of six monitoring campaigns were undertaken throughout the course of the project. The conclusion of the monitoring was that there was little or no impact on air quality at the schools related to construction activities.

This document contains a summary of results, discussions and recommendations. The original reports for the monitoring are attached to this document in Appendix A to Appendix G.

## **Background Monitoring**

As part of the construction project for the CAWTP located at McLoughlin Point, there were concerns regarding local air quality. RWDI was retained to provide background ambient air quality measurements at several schools in the Esquimalt area prior to and during the construction project. The monitoring was completed at four local schools: Ecole Brodeur (Brodeur), Macaulay Public School (Macaulay), Rock Heights Middle School (Rock Heights) and Esquimalt Secondary School (Esquimalt). At the time of the project start-up it was decided that some additional monitoring should be done at Ecole Lampson (Lampson).

The dominant air pollutant with all construction projects is particulate matter. In this case there will also be a concern, at least in the post construction phase, with odorous compounds such as reduced sulfur compounds, most notably hydrogen sulfide.

Suspended particulate (TSP) monitoring was completed on three separate days for 24-hour intervals (nominal), at the first four schools total. The particulate sampling was not completed at Lampson because it is located less than 300 metres from Brodeur and is directly between Brodeur and Rock Heights. With no significant local sources of TSP it was felt that there was not likely to be any meaningful difference between background levels of TSP at Lampson and Brodeur.

Surveys for hydrogen sulfide (H<sub>2</sub>S) were made at all five schools. These surveys consisted of a series of spot measurements around the perimeters of the school properties. The surveys were completed at least three times per day on three separate days.



A general assessment of the ventilation systems at all five schools was completed as part of the background assessment. The assessment s included a cursory visual inspection of the ventilation systems. The also included a survey of carbon dioxide (CO2) levels at least six locations in each school taken at three times over the course of a school day. Monitoring of CO2 in the supply air going to the school was also completed continuously for a 24-hour period. It should be noted that CO2 levels are not in themselves a concern to health but the excessive buildup of CO2 is an indicator of poor ventilation.

The program was conducted between June 8 and June 14, 2017.

### **Monitoring During Construction**

After the pre- construction monitoring was completed, six rounds of monitoring were completed during the following periods which encompassed all seasons:

Aug-Sept	2017
Nov-Dec	2017
Jan-Mar	2018
May-Jun	2018
Jul-Aug	2018
Jul-Aug	2019

The location for the monitoring was at four local schools: Ecole Brodeur (Brodeur), Macaulay Public School (Macaulay), Rock Heights Middle School (Rock Heights). In the background monitoring a fifth school was also examined. Since this fifth school (Lampson) is very close to two of the other sites and is between them, there was very little to be gained from monitoring at this school. The dominant air pollutant with all construction projects is particulate matter. In order to focus more on health impact, the particulate monitoring was shifted to inhalable particulate as opposed to total suspended particulate measured in the background monitoring. In this case there will also be a concern, at least in the post construction phase, with odorous compounds such as reduced sulfur compounds, most notably hydrogen sulfide. Additionally, it was decided to look at concentrations of Nitrogen dioxide, Volatile Organic Compounds (VOC's) and Sulfur dioxide. These additional pollutants are associated with diesel emissions and there was some concern around construction related diesel activities.



## 2. MONITORING RESULTS

### 2.1 Background Monitoring Results

Detailed results of the monitoring program are included in Appendix A. A summary of the background results is below:

#### Ambient Measurements

	Average	Maximum	BC Air Quality Objective
Total Suspended Particulate ( $\mu\text{g}/\text{m}^3$ )	15.8	35.6	120
Hydrogen Sulfide ( $\mu\text{g}/\text{m}^3$ )	0	0	7 (total reduced sulfur)

#### Indoor Air Quality

School	Maximum Value of CO <sub>2</sub> in Room to Room Survey (ppm)	Measured Range of CO <sub>2</sub> in Return Air Ducts (ppm)
Lampson	1040	436 to 519
Brodeur	1230	399 to 457
Esquimalt	1140	394 to 521
Macaulay	1090	461 to 537
Rock Heights	1080	413 to 758

### 2.2 Ambient Air Quality Measurements

The detailed results for each of the ambient air quality monitoring are included in Appendix B to Appendix G. A brief summary of the results is included in the tables below.

#### Summary Table of Inhalable Particulate (PM<sub>10</sub>) Results

School	Average PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	Max 1-hr PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	Max 24-hr PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	Exceedances of BCAQO
Brodeur	10.3	91	54	1
Esquimalt	12.0	108	55	1
Macaulay	10.5	210	54	1
Rock Heights	9.8	228	54	1



The British Columbia Ambient Air Quality Objective (BCAQO) for PM<sub>10</sub> is 50 µg/m<sup>3</sup> based on a 24-hour averaging period. There was only one exceedance of the BCAQO which occurred at all sites on August 14, 2018. The incident was not related to construction activities but rather a region wide occurrence caused by forest fires.

The tables below show average concentration of gaseous parameters. The averages shown are averages of the readings that are above the detection limits.

**Summary Table for Hydrogen Sulfide, Nitrogen Dioxide and Sulfur Dioxide**

Station	Hydrogen Sulfide	Nitrogen Dioxide	Sulfur Dioxide
	Average Concentration (ppb)		
Brodeur	0.11	5.62	0.33
Esquimalt	0.12	5.10	0.24
Macaulay	0.07	3.68	0.38
Rock	0.08	3.80	0.30
BCAQO*	2 <sup>1</sup>	32 <sup>2</sup>	5 <sup>2</sup>
Exceedances of BCAQO	0	0	0

**Notes:** \*BCAQO denotes British Columbia Air Quality Objective. <sup>1</sup> 24-Hour guideline. <sup>2</sup> Annual guideline.

Station	Benzene	Toluene	Ethyl benzene	m/p-Xylene	o-Xylene	Total VOCs
	Concentration (µg/m <sup>3</sup> )					
Brodeur	<.5	1.20	<0.50	<2.5	<0.60	54
Esquimalt	1	1.14	<0.50	<2.5	<0.60	226
Macaulay	0.75	2.65	<0.50	<2.5	<0.60	327
Rock Heights	0.66	2.14	<0.50	<2.5	<0.60	120
Criteria*	2.3	2000	1000	730	730	<11
Below Criteria	Y	Y	Y	Y	Y	na

**Notes:** British Columbia does not have Air Quality Objective guideline values for VOC's, so Ontario 24-hour guidelines were used.

None of the measured concentrations were in excess of guideline values.



## 3. DISCUSSION

### 3.1 Discussion of Particulate Monitoring

The results of the background monitoring showed very low levels of particulate at all locations throughout the monitoring program. The only time that elevated particulate was measured was on August 14, 2018, during a forest fire episode. The elevated level was measured at all locations on that day indicating that the issue was region wide and not related to any localized construction activity. There was absolutely no discernable impact on particulate levels as a result of construction activity

#### Discussion of the Gaseous Pollutant Sampling

All of the samples taken showed very low concentrations and all were well below any applicable guidelines

#### Discussion of the School Ventilation Systems and Carbon Dioxide Measurements

All of the HVAC components examined were in good operating condition. The filters were not overly soiled and there was no indication of mold or moisture present in the systems.

The recommended level for carbon dioxide in an indoor area such as a classroom is generally 700 ppm above the background level which in the case of the study schools is 1100 ppm. This is based on *the American Society of Heating Refrigeration and Air-Conditioning Engineers (ASHRAE) 62.1 Standard -2016.*

The levels of carbon dioxide measured at Lampson were all quite low, both in the class rooms and in the HVAC system. The levels indicate that the amount of fresh air supplied to the class rooms is likely to be sufficient to mitigate any indoor air quality issues due to sources inside the school at Lampson.

The carbon dioxide measurements at Brodeur and Esquimalt did both include measurements that were over 1100 ppm. The carbon dioxide measurements at Rock Heights and Macaulay included measurements that were very close to 1100 ppm.

All the elevated levels may have been related to short-lived anomalies but we would suggest that the school boards may want to commission a mechanical contractor to complete an air balance at the schools.





The recommended ventilation rate for class rooms as suggested in ASHRAE 62.1-2016 is ten cubic feet per minute (CFM) for each of the inhabitants in the room. This rate of ventilation is for fresh air. So for instance, if the HVAC is recirculating 50% of the air, the room will require 20 CFM per inhabitant. The school boards may also wish a more detailed study before initiating any changes. The higher levels as found do not represent any health risk but are an indication that more fresh air should be supplied to the room. Indoor air quality problems are more likely where higher carbon dioxide concentrations occur.

## 4. RECOMMENDATIONS

### 4.1 Recommendations for Monitoring

The measurement program was completed to assess air quality impacts on Esquimalt schools. The sampling incorporated six campaigns during the construction and another campaign was completed before the construction. The results of the sampling have constantly shown very low levels of air contaminants. With the exception of a few elevated PM10 readings during the 2018 summer campaign, which were caused by forest fire impacts, the levels have been nearly pristine. There have clearly been no notable impacts on air quality at the schools related to construction activity associated with the waste water upgrades.

Based on the very low levels of pollutant encountered, we would recommend that the monitoring be halted. If another campaign after the construction project completion is requested, this can be discussed with the CRD but there is no need for one.

### 4.2 Recommendations for School Ventilation Systems

RWDI compiled a list of prices for standard filters, HEPA Filters and for carbon impregnated filters for use in the ventilation systems of the 5 schools that were examined in the air quality study. The relative costs of the filters are shown below as well as a budget price for replacing all the filters – the differences between the schools was not significant. In addition to the filter costs there may be additional fan power required for any of these options and we would definitely recommend a full air balance after installation. The filters will also need to be replaced more frequently than standard filters.



<b>Cost per Filter</b>	<b>Cost per School</b>	<b>Type</b>
KP 1620-2 @ \$ 3.89	\$250	Standard Filter
HIE40CB 1620-2 @ \$ 27.10	\$1500	Carbon Impregnated
PRM98 1620-2 @ \$ 60.40	\$3000	MERV 16/14 high removal efficiency
<u>HEPA @ individual</u> quote	More than MERV	New filter frames req'd

The budget price for performing an air balance is \$10,000 at each school. HEPA and Carbon impregnated filters are typically used where the indoor air quality must be pristine, clean rooms, operating theatres etc. The carbon filters would remove some incoming VOCs and H2S, but their removal efficiency drops quickly with use. In terms on VOCs there will be far more generated inside the buildings than will be present in the outside air. This is substantiated through the measured values of ambient VOC's which were all very low.

The HEPA and MERV 16/14 filters will remove some additional particulate but the standard filters are more than adequate to provide a clean air supply suitable for general indoor air quality. Based on the facts listed above and the readings of the recent air quality testing, which were very low, we would suggest that changing the filter types is not likely to be beneficial, but a more definitive study could be made if you would like.

#### ***Ventilation Summary***

Based on the monitoring that has been completed we would not recommend that the filtration systems in the schools be altered. There were only a few elevated readings throughout the monitoring and most of those were related to forest fire activity. The standard filters would easily remove sufficient material for the indoor levels to be below Air Quality guideline even when these rare events occurred. The additional operating cost and effort is not warranted based on the levels monitored.



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**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

---

**SUBJECT**     **Alternative Approval Process for Bylaw 4522 – Regional Goose Management**

**ISSUE SUMMARY**

Establish the process for conducting an Alternative Approval Process for Bylaw No. 4522 by confirming the deadline to receive elector responses, establishing the total number of electors, and approving a synopsis of the bylaw, Notice of Alternative Approval Process and the Elector Response Form.

**BACKGROUND**

At its meeting held October 12, 2022, the CRD Board gave three readings to the following bylaw, attached as Appendix A:

- **Bylaw No. 4522**, “*Canada Goose Management Service Establishment Bylaw No. 1, 2022*” to authorize the establishment of a service for the purpose of regional Canada Goose management and coordination within the CRD.

The bylaw obtained Inspector of Municipalities approval on December 8, 2022. The next step prior to adopting the bylaw is to obtain elector assent. The CRD Board directed elector approval be obtained by way of a regional Alternative Approval Process (AAP) for all electors in the local service area.

To conduct the AAP, the attached Synopsis of Bylaw No. 4522 (Appendix B), Notice (Appendix C), and Elector Response Form (Appendix D) have been prepared in accordance with the applicable sections of the *Local Government Act* and the *Community Charter*. With an AAP, the Board may proceed with adopting the bylaw unless more than 10% of electors indicate that the Board must obtain the assent of the electors by way of assent voting (referendum). The proposed deadline to receive elector responses is January 23, 2023.

The total number of electors in the regional Canada Goose Management Service (i.e. Capital Regional District) is determined to be 332,080 of which 10% is 33,208 electors.

For additional information, please refer to the two previous staff reports dated October 12, 2022 (Appendix E) and May 18, 2022 (Appendix F).

**ALTERNATIVES**

*Alternative 1*

1. That in accordance with section 86(3) of the *Community Charter*, the date of January 23, 2023 be confirmed as the deadline by which electoral response, under the regional Alternative Approval Process for CRD Bylaw No. 4522, must be submitted to the Capital Regional District by qualified electors within the Capital Regional District;
2. That the attached Synopsis of Bylaw No. 4522 (Appendix B), Notice of Alternative Approval Process (Appendix C), and the Elector Response Form (Appendix D) be approved; and

3. That the total number of registered electors within the service area is 332,080 and that 10% of that number is 33,208 electors.

*Alternative 2*

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

**CONCLUSION**

The CRD Board has previously approved obtaining elector approval by regional alternative approval process for Bylaw No. 4522 to authorize the establishment of a service for the purpose of regional Canada Goose management and coordination within the CRD. To conduct the regional Alternative Approval Process, the Board must confirm the deadline to receive elector responses, establish the number of electors, and approve the Notice of Alternative Approval Process and the Elector Response Form.

**RECOMMENDATION**

1. That in accordance with section 86(3) of the *Community Charter*, the date of January 23, 2023 be confirmed as the deadline by which electoral response, under the regional Alternative Approval Process for CRD Bylaw No. 4522, must be submitted to the Capital Regional District by qualified electors within the Capital Regional District;
2. That the attached Synopsis of Bylaw No. 4522 (Appendix B), Notice of Alternative Approval Process (Appendix C), and the Elector Response Form (Appendix D) be approved; and
3. That the total number of registered electors within the service area is 332,080 and that 10% of that number is 33,208 electors.

Submitted by:	Marlene Lagoa, Manager, Legislative Services & Deputy Corporate Officer
Concurrence:	Stephen Henderson, Acting General Manager, Corporate Services
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENT(S)**

- Appendix A: Bylaw 4522 at Third Reading
- Appendix B: Synopsis of Bylaw 4522
- Appendix C: Notice of Alternative Approval Process for Bylaw 4522
- Appendix D: Elector Response Form for Bylaw 4522
- Appendix E: Previous Staff Report – October 12, 2022
- Appendix F: Previous Staff Report – May 18, 2022

**CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4522**

\*\*\*\*\*

**A BYLAW TO ESTABLISH A SERVICE FOR THE PURPOSE OF  
CANADA GOOSE MANAGEMENT**

\*\*\*\*\*

**WHEREAS:**

- A. The Board of the Capital Regional District wishes to establish a regional Canada Goose monitoring and coordination service (the "Service") to address increasing populations of non-migratory, resident Canada geese populations, reduce their environmental impacts and to coordinate management of Canada geese with public authorities and groups across the capital region under s.263(1)(a) of the *Local Government Act*,
- B. Participating area approval is required and assent of the electors has been obtained by regional alternative approval process, pursuant to s. 342(4) of the *Local Government Act*; and,
- C. The approval of the Inspector of Municipalities has been obtained under s. 343(1)(a) of the *Local Government Act*.

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

**Service**

- 1. The Service being established and to be operated is a service for the purpose of regional Canada Goose management and coordination, including, without limiting the foregoing:
  - a) monitoring, mapping, reporting on Canada Goose populations and their impacts;
  - b) coordinating and establishing collaborative partnerships with municipalities, First Nations, large landowners, Peninsula and Area Agricultural Commission, government agencies, and stewardship groups to implement the Regional Canada Goose Management Strategy and manage Canada Goose populations in the region;
  - c) facilitating the development and implementation of a communications strategy and public education program to support the management of Canada Goose populations; and
  - d) collaboration with other Vancouver Island regional districts, local governments and First Nations to reduce Canada Goose populations through the Vancouver Island Canada Goose Management Working Group.

**Boundaries**

- 2. The boundaries of the service area are coterminous with the boundaries of the Capital Regional District.

### **Participating Areas**

3. All municipalities and electoral areas within the Capital Regional District are the participating areas for this service.

### **Cost Recovery**

4. As provided in Section 378 of the *Local Government Act*, the annual cost of providing the Service shall be recovered by one or more of the following:
  - (a) property value taxes imposed in accordance with Division 2 of 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 by the *Local Government Act* or another Act;
  - (d) revenues received by way of agreement, enterprises, gift, grant or otherwise.

### **Cost Apportionment**

5. (a) The annual costs for the service, net of grants and other revenues, shall be apportioned among the participating areas, as follows:
  - i. Fifty (50) per cent of the costs shall be recovered on the basis of the population of the participating areas; and
  - ii. Fifty (50) per cent on the converted value of land and improvements in the participating areas.
- (b) Population, for the purpose of this section, is the population estimate as determined annually by the Regional Planning department of the Capital Regional District.

### **Maximum Requisition**

6. In accordance with Section 339 (1)(e) of the *Local Government Act*, the maximum amount that may be requisitioned annually for the cost of the Service is the greater of:
  - (a) Two hundred and fifty-one thousand nine hundred (\$251,900); or
  - (b) An amount equal to the amount that could be raised by a property value tax rate of \$0.0016 per ONE THOUSAND DOLLARS (\$1,000.00) that, when applied to the net taxable value of the land and improvements within the Service Area, will yield the maximum amount that may be requisitioned for the Service.

### **Citation**

7. This Bylaw may be cited as the "Canada Goose Management Service Establishment Bylaw No. 1, 2022".

READ A FIRST TIME THIS	12 <sup>th</sup>	day of	October, 2022
READ A SECOND TIME THIS	12 <sup>th</sup>	day of	October, 2022
READ A THIRD TIME THIS	12 <sup>th</sup>	day of	October, 2022
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	8 <sup>th</sup>	day of	December, 2022
RECEIVED PARTICIPATING AREA APPROVAL UNDER SECTION 342(4) OF THE <i>LOCAL GOVERNMENT ACT</i> THIS		day of	
ADOPTED THIS		day of	

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

FILED WITH THE INSPECTOR OF MUNICIPALITIES THIS \_\_\_\_\_ day of \_\_\_\_\_



**Synopsis of Bylaw No. 4522, “Canada Goose Management Service Establishment Bylaw No. 1, 2022”**

Bylaw No. 4522 would establish a new service for the purpose of regional Canada Goose management and coordination including, but not limited to, monitoring populations and their impacts, establishing collaborative partnerships with stakeholder groups to manage populations in the region, and implementation of public education program. The proposed service area applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

Please note that this synopsis of Bylaw No. 4522 is not intended to be or understood as an interpretation of the bylaw. A copy of the complete bylaw and this notice may be viewed at Capital Regional District offices located at 625 Fisgard Street, Victoria, BC from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays). The bylaw may also be viewed at [www.crd.bc.ca/GooseAAP](http://www.crd.bc.ca/GooseAAP).



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## **NOTICE TO ELECTORS WITHIN THE CAPITAL REGIONAL DISTRICT**

### **Alternative Approval Process for Bylaw No. 4522 – to authorize the establishment of a regional Canada Goose Management Service**

**Notice is hereby given** that the Board of Directors of the Capital Regional District ("CRD") proposes to adopt Bylaw No. 4522, "*Canada Goose Management Service Establishment Bylaw No. 1, 2022*" to authorize the establishment of a service for the purpose of regional Canada Goose management and coordination within the CRD.

Bylaw No. 4522 would establish a new service for the purpose of regional Canada Goose management and coordination including, but not limited to, monitoring populations and their impacts, establishing collaborative partnerships with stakeholder groups to manage populations in the region, and implementation of public education program. The proposed service area applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

Please note that this synopsis of Bylaw No. 4522 is not intended to be or understood as an interpretation of the bylaw. A copy of the complete bylaw and this notice may be viewed at Capital Regional District offices located at 625 Fisgard Street, Victoria, BC from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays). The bylaw may also be viewed at [www.crd.bc.ca/GooseAAP](http://www.crd.bc.ca/GooseAAP).

**Take further notice** that the CRD may proceed with Bylaw No. 4522 unless at least 33,208 electors within the Capital Regional District indicate, by signing the elector response form, that the Board must obtain the assent of the electors by way of an assent vote (referendum) before proceeding to adopt Bylaw No. 4522.

The elector response must be in the form as established by the CRD and is available from the CRD on request or from the CRD website at [www.crd.bc.ca/GooseAAP](http://www.crd.bc.ca/GooseAAP). The only persons entitled to sign elector response forms are electors of the area to which the alternative approval process opportunity applies. The alternative approval process opportunity applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

The deadline for submitting signed elector response forms, in relation to Bylaw No. 4522, to the CRD is **12:00 pm (noon) on Monday, January 23, 2023**. Forms must be received by the deadline to be counted.

The CRD has determined that the total number of electors within the service area is 332,080 and that 10% of that number or 33,208 electors must submit elector response forms to prevent the CRD from enacting Bylaw No. 4522 without the assent of the electors by assent voting (referendum).

Questions regarding Bylaw No. 4522 may be directed to Glenn Harris, Senior Manager, Environmental Protection, 625 Fisgard Street, Victoria, BC, 250.360.3090, [gharris@crd.bc.ca](mailto:gharris@crd.bc.ca), from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays) from the date of this notice until January 23, 2023.

## Qualifications for Resident and Non-Resident Property Electors

**Resident Elector:** You are entitled to submit an elector response form as a Resident Elector if you are 18 years or older on the date of submission of the elector response form, are a Canadian citizen, have resided in British Columbia for at least 6 months and currently reside in the CRD prior to signing the elector response form.

**Non-Resident Property Elector:** You may submit an elector response form as a Non-Resident Property Elector if you are 18 years or older on the date of submission of the elector response form, are a Canadian citizen, have resided in British Columbia for 6 months, have owned and held registered title to property in the CRD for 30 days and do NOT qualify as a Resident Elector. If there is more than one registered owner of the property (either as joint tenants or tenants in common) only one individual may, with the written consent of the majority, submit an elector response form.

To obtain an elector response form, or for questions about the alternative approval process, contact Legislative Services, 625 Fisgard Street, Victoria, BC, V8W 1R7, email [legserv@crd.bc.ca](mailto:legserv@crd.bc.ca), telephone 250.360.3024 or toll free 1.800.663.4425 from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays).

A copy of the elector response form may be downloaded from: [www.crd.bc.ca/GooseAAP](http://www.crd.bc.ca/GooseAAP)

Elector response forms, a copy of Bylaw No. 4522, and a copy of this Notice may be inspected during regular office hours, 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays) from the date of this notice until **Monday, January 23, 2023** at the following CRD locations:

- CRD headquarters, 625 Fisgard Street, Victoria
- on the CRD website: [www.crd.bc.ca/GooseAAP](http://www.crd.bc.ca/GooseAAP)

Given under my hand at Victoria, BC this xx<sup>th</sup> day of December 2022

Kristen Morley  
Corporate Officer



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Alternative Approval Process for Bylaw No. 4522 – to authorize the establishment of a regional Canada Goose Management Service

By completing this elector response form I, the undersigned elector, residing or owning real property within the Capital Regional District ("CRD"), as defined below, do hereby present my name on this elector response form for purposes of OPPOSING the CRD adopting Bylaw No. 4522, "Canada Goose Management Service Establishment Bylaw No. 1, 2022" to authorize the establishment of a service for the purpose of regional Canada Goose management and coordination, unless a vote is held.

I acknowledge that I am a person who would otherwise be entitled to register and vote in respect of this matter, had the assent of the electors by voting been required. I hereby certify that:

- 1. I am 18 years of age or older;
2. I am a Canadian citizen;
3. I have lived in British Columbia for at least 6 months immediately before signing this elector response form;
4. In the case of a Non-Resident Property Elector:
a) I am not entitled to vote as a Resident Elector in the CRD for purposes of this matter;
b) I have been a registered owner of real property in the Regional District as defined below for at least 30 days before signing this elector response form;
c) I acknowledge that I may sign this elector response form on behalf of only one property that I own in the Regional District;
d) If there is more than one individual who is the registered owner of the property, only one of those individuals may sign this elector response form in relation to the property, assuming the Non-Resident Property Elector has the written consent of the number of individuals who, together with the person signing this elector response form constitutes a majority of the registered owners.
e) The only persons who are registered owners of the real property are individuals who do not hold the property in trust for a corporation or another trust.
5. I am not disqualified from voting under the Local Government Act or any other enactment or otherwise disqualified by law from voting.

This alternative approval process applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

I understand and acknowledge that I may not sign an elector response form against Bylaw No. 4522 more than once and may not withdraw my name from an elector response form after January 23, 2023. I understand and acknowledge that this elector response form must be received by the CRD no later than 12:00 pm (noon) on January 23, 2023. In an effort to obtain signatures with respect to this matter, I declare that I have not knowingly made any false or misleading statements to another person with respect to this elector response form, action or other matter to which this elector response form relates.

Signed elector response forms must be returned to the CRD, from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays), on or before 12:00 pm (noon) on January 23, 2023 at the following CRD office location: Legislative Services, 625 Fisgard Street, Victoria, BC, V8W 1R7, or by emailing a legible scanned copy to legserv@crd.bc.ca.

Table with 2 columns and 4 rows: FULL NAME OF ELECTOR (please print); FULL RESIDENTIAL ADDRESS OF ELECTOR (Street Address including Town/City please print); FOR NON-RESIDENT PROPERTY ELECTOR (Address of Property in CRD service area please print); SIGNATURE OF ELECTOR.

Section 86(7) of the Community Charter requires the elector's full name and residential address or the address of the property in relation to which the person is entitled to register as a Non-Resident Property Elector in order for this response form to be counted.

**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, OCTOBER 12, 2022**

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**SUBJECT**     Bylaw No. 4522 – Regional Goose Management Service

**ISSUE SUMMARY**

The Capital Regional District (CRD) Board requested the development of a regional Goose Management Service and a report outlining costs for such a service.

**BACKGROUND**

At the June 8, 2022 CRD Board meeting, staff were directed to bring back a report outlining costs for a Canada Goose Management Service. Staff provided an Initiative Business Case that included the costs for this service in the provisional budget. This report provides a draft establishing bylaw for consideration (Appendix A) and provides further details of the proposed cost-share for a goose management service (Appendix B).

**ALTERNATIVES**

*Alternative 1*

1. That Bylaw No. 4522, “Canada Goose Management Service Establishment Bylaw No. 1, 2022”, be introduced and read a first, second and third time;
2. That participating area approval be obtained by regional alternative approval process; and
3. That Bylaw No. 4522 be forwarded to the Inspector of Municipalities for review of the elector approval method.

*Alternative 2*

That Bylaw No. 4522 be deferred pending further information from staff.

**IMPLICATIONS**

*Environmental & Climate Implications*

The current Vancouver Island Canada goose population ranges from 10,000 to 15,000, with an estimated 3,500-7,000 birds over-wintering in the capital region. Data from banded birds confirms that Canada geese are moving between regions on Vancouver Island. In the capital region, the Canada goose population had an annual growth rate of 16% from 1977-1997 (Christmas bird count), while survey data from 2017-2021 indicates the population is roughly doubling every 4.3 years.

The inconsistent and uncoordinated approach to managing goose populations across the region has resulted in moving geese and their associated impacts into new areas, continued expansion of nesting and over-wintering populations, and increasing ecological, economic and social impacts to agricultural and recreational lands, estuaries and wetlands. Stewardship groups report

significant and ongoing damage to native ecosystems on nearshore islands and to important estuaries, as a result of increasing goose populations, while the farming community reports significant and ongoing agricultural and economic impacts from geese.

#### *Service Delivery and Intergovernmental Implications*

A regional Canada Goose Management Service would provide coordinated management of Canada goose populations and would include:

- a) monitoring, mapping, reporting on Canada Goose populations and their impacts
- b) coordinating and establishing collaborative partnerships with municipalities, First Nations, large landowners, Peninsula and Area Agricultural Commission, other government agencies and stewardship groups to implement the CRD's Regional Canada Goose Management Strategy and manage Canada Goose populations in the region
- c) facilitating the development and implementation of a communications strategy and public education program to support the management of Canada Goose populations; and
- d) collaboration with other Vancouver Island regional districts, local governments and First Nations to reduce Canada Goose populations through the Vancouver Island Canada Goose Management Working Group.

#### *Financial Implications*

An Initiative Business Case outlining the proposed annual budget for a Regional Goose Management Service has been submitted as part of the provisional budget package.

Staff have proposed potential costs for this regional service be cost-shared based on population (50%) and converted assessment (50%) for the participating partners. The proposed cost apportionment for the participating partners for 2023 is presented in Appendix B.

#### *Legal Implications*

A regional district may operate any service it deems desirable, provided that on establishment of the service by way of service establishing bylaw, it received participating area approval. There are three options to obtain participating area approval for Bylaw No. 4522: regional alternative approval process; municipal consent on behalf with alternative approval process (AAP) in the electoral areas; and referendum/elector assent.

As a regional goose management service is only effective if all municipalities and electoral areas participate, a regional AAP is advised. This would put the responsibility of objecting to the service on the electors, who, if 10% were not in favour, could determine not to proceed. An alternative is the municipal consent process, which would permit any municipality or electoral area, by AAP, to effectively veto the creation of the service if they were not in favour of its establishment. Given an AAP is already required in the Electoral Areas, it is recommended a regional AAP be pursued.

### **CONCLUSION**

Increasing populations of Canada geese in the capital region are causing significant impacts to estuary habitats, ecological reserves, recreational fields, beaches and lakes, and agricultural crops, resulting in increasing pressure on local governments to take coordinated action. Staff

have prepared a service establishing bylaw to monitor goose populations and to coordinate partnerships between land use agencies under various jurisdictions, including First Nations, federal and provincial wildlife agencies, parks and recreation boards, local and regional governments, airport authorities, farmers and other owners of large properties to support effective management of Canada geese in the capital region.

**RECOMMENDATION**

1. That Bylaw No. 4522, “Canada Goose Management Service Establishment Bylaw No. 1, 2022”, be introduced and read a first, second, and third time;
2. That participating area approval be obtained by regional alternative approval process; and
3. That Bylaw No. 4522 be forwarded to the Inspector of Municipalities for review of the elector approval method.

Submitted by:	Peter Kickham, M.E.T. R.P.Bio. Acting Senior Manager, Environmental Protection
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

**ATTACHMENTS**

- Appendix A: Bylaw No. 4522, “Canada Goose Management Service Establishment Bylaw No. 1, 2022”
- Appendix B: Goose Management Service – Participant Apportionment

CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4522

\*\*\*\*\*

A BYLAW TO ESTABLISH A SERVICE FOR THE PURPOSE OF  
CANADA GOOSE MANAGEMENT

\*\*\*\*\*

**WHEREAS:**

- A. The Board of the Capital Regional District wishes to establish a regional Canada Goose monitoring and coordination service (the "Service") to address increasing populations of non-migratory, resident Canada geese populations, reduce their environmental impacts and to coordinate management of Canada geese with public authorities and groups across the capital region under s.263(1)(a) of the *Local Government Act*;
- B. Participating area approval is required and assent of the electors has been obtained by regional alternative approval process, pursuant to s. 342(4) of the *Local Government Act*; and,
- C. The approval of the Inspector of Municipalities has been obtained under s. 343(1)(a) of the *Local Government Act*.

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

**Service**

- 1. The Service being established and to be operated is a service for the purpose of regional Canada Goose management and coordination, including, without limiting the foregoing:
  - a) monitoring, mapping, reporting on Canada Goose populations and their impacts;
  - b) coordinating and establishing collaborative partnerships with municipalities, First Nations, large landowners, Peninsula and Area Agricultural Commission, government agencies, and stewardship groups to implement the Regional Canada Goose Management Strategy and manage Canada Goose populations in the region;
  - c) facilitating the development and implementation of a communications strategy and public education program to support the management of Canada Goose populations; and
  - d) collaboration with other Vancouver Island regional districts, local governments and First Nations to reduce Canada Goose populations through the Vancouver Island Canada Goose Management Working Group.

**Boundaries**

- 2. The boundaries of the service area are coterminous with the boundaries of the Capital Regional District.



**Participating Areas**

3. All municipalities and electoral areas within the Capital Regional District are the participating areas for this service.

**Cost Recovery**

4. As provided in Section 378 of the *Local Government Act*, the annual cost of providing the Service shall be recovered by one or more of the following:
  - (a) property value taxes imposed in accordance with Division 2 of 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 by the *Local Government Act* or another Act;
  - (d) revenues received by way of agreement, enterprises, gift, grant or otherwise.

**Cost Apportionment**

5.
  - (a) The annual costs for the service, net of grants and other revenues, shall be apportioned among the participating areas, as follows:
    - i. Fifty (50) per cent of the costs shall be recovered on the basis of the population of the participating areas; and
    - ii. Fifty (50) per cent on the converted value of land and improvements in the participating areas.
  - (b) Population, for the purpose of this section, is the population estimate as determined annually by the Regional Planning department of the Capital Regional District.

**Maximum Requisition**

6. In accordance with Section 339 (1)(e) of the *Local Government Act*, the maximum amount that may be requisitioned annually for the cost of the Service is the greater of:
  - (a) Two hundred and fifty-one thousand nine hundred (\$251,900); or
  - (b) An amount equal to the amount that could be raised by a property value tax rate of \$0.0016 per ONE THOUSAND DOLLARS (\$1,000.00) that, when applied to the net taxable value of the land and improvements within the Service Area, will yield the maximum amount that may be requisitioned for the Service.

**Citation**

7. This Bylaw may be cited as the “Canada Goose Management Service Establishment Bylaw No. 1, 2022”.

READ A FIRST TIME THIS day of

READ A SECOND TIME THIS day of

READ A THIRD TIME THIS day of

APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS day of

RECEIVED PARTICIPATING AREA  
APPROVAL UNDER SECTION 342(4)  
OF THE *LOCAL GOVERNMENT ACT* THIS day of

ADOPTED THIS day of

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

FILED WITH THE INSPECTOR OF MUNICIPALITIES THIS day of

**GOOSE MANAGEMENT SERVICE  
PARTICIPANT APPORTIONMENT**

Service Participants	Basis of Apportionment		Percent of Total	Requisition (\$)
	50% Regional Planning Population (2021)	50% Converted Assessments (2022)		
<b>Municipalities</b>				
City of Colwood	19,693	676,387,481	4.09%	9,705
City of Victoria	94,890	4,562,581,324	23.16%	54,982
District of Central Saanich	18,522	821,112,902	4.34%	10,294
Township of Esquimalt	18,764	592,077,215	3.76%	8,916
City of Langford	47,313	1,807,943,089	10.31%	24,469
District of Saanich	124,639	4,885,131,652	27.48%	65,232
District of Oak Bay	18,930	1,171,428,027	5.31%	12,616
District of North Saanich	12,500	814,676,641	3.62%	8,590
District of Metchosin	5,186	203,434,625	1.14%	2,715
Town of Sidney	12,279	656,173,316	3.17%	7,530
Town of View Royal	12,034	443,000,748	2.58%	6,117
District of Highlands	2,582	120,325,439	0.62%	1,472
District of Sooke	15,539	517,468,098	3.18%	7,555
	402,871	17,271,740,557	92.76%	220,194
<b>Electoral Areas</b>				
Juan de Fuca	5,756	331,978,346	1.55%	3,683
Saltspring Island	12,276	647,554,560	3.15%	7,474
Southern Gulf Islands	5,261	490,465,703	1.92%	4,546
	23,293	1,469,998,609	6.62%	15,704
<b>First Nations</b>				
Tsawout	1,790	37,233,100	0.31%	729
Songhees	1,839	37,506,403	0.31%	744
	3,629	74,739,503	0.62%	1,474
<b>Total</b>	<b>429,793</b>	<b>18,816,478,669</b>	<b>100.00%</b>	<b>237,372</b>

*Prepared September 22, 2022. Data based on information used for 2022 Final Budget.*

**REPORT TO ENVIRONMENTAL SERVICES COMMITTEE  
MEETING OF WEDNESDAY, MAY 18, 2022**

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**SUBJECT**    **Goose Management Update**

**ISSUE SUMMARY**

To report back on a Goose Management Service and provide results of recent Canada goose population surveys in the capital region.

**BACKGROUND**

Ongoing environmental, economic, and health impacts from expanding populations of non-migratory Canada geese continue to affect municipalities, parks, farmers, businesses, health agencies and airport authorities in the capital region and across Vancouver Island.

In August 2020, the Capital Regional District (CRD) Board directed staff to provide a report on a Canada Goose Management Service.

In 2021, CRD staff established a Memorandum of Understanding with the Guardians of the Mid-Island Estuaries Society (GoMIES) to (1) provide a summary report (Appendix A) of Canada goose population estimates and trends using historical and current survey data, as well as known/suspected nesting locations and goose hotspots; and (2) develop a draft action plan that includes longer-term mitigation activities with a proposed budget (Appendix B).

The increasing population of Canada geese will continue to put significant pressure on regional and municipal resources, parks and recreational fields, beaches, estuaries and agricultural crops, if coordinated population control actions are not implemented.

**ALTERNATIVES**

*Alternative 1*

The Environmental Services Committee recommends to the Capital Regional District Board:  
That staff bring back a report outlining costs for a Canada Goose Management Service.

*Alternative 2*

The Environmental Services Committee recommends to the Capital Regional District Board:  
That staff bring a Canada Goose Management Service forward for the 2024-2028 service planning and budget cycle.

*Alternative 3*

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

## **IMPLICATIONS**

### *Environmental & Climate Implications*

The current Vancouver Island Canada goose population ranges from 10,000 to 15,000, with an estimated 3,500-7,000 birds over-wintering in the capital region (Appendix A). Data from banded birds confirms that Canada geese are moving between regions on Vancouver Island. In the capital region, the Canada goose population had an annual growth rate of 16% from 1977-1997 (Christmas bird count), while survey data from 2017-2021 indicates the population is roughly doubling every 4.3 years.

Surveys in 2020 and 2021 identified Sooke Basin, Esquimalt Lagoon, Portage Inlet and Gorge Waterway, Victoria/Oak Bay southeast shoreline and near shore islets, and the east coast of Saanich Peninsula from Sidney to Tsartlip Nation Reserve lands as key hotspots where moulting geese congregate. Nest and egg surveys conducted by GoMIES located 168 nests and added 854 eggs in 2020 and found 241 nests and added 1,282 eggs in 2021.

While there are a suite of tools for managing Canada goose populations, recent discussions indicate most local governments, farmers and large land owners rely on hazing techniques (using dogs, noise and lights) to deter Canada geese from their jurisdictions; very few of these groups conduct regular egg addling, while some farmers have obtained hunting permits.

Hazing is proving effective to manage the volume of goose droppings that accumulate where large flocks congregate; however, the 2020-2021 nest surveys indicate that reliance on this method is likely moving goose nesting activities to nearby quarries and off shore islands, many of which are part of the BC Parks Ecological Reserves. Hazing also does nothing to reduce goose populations over the long term.

To see a significant reduction in Canada goose populations, regionally coordinated population control measures, such as egg addling and regular goose harvests, need to be implemented. A humane harvesting program could include efforts to utilize all parts of the bird and ideally would provide a significant food source (i.e., City of Victoria Set the Table program, homeless shelters). Opportunities to support and provide training for First Nations Guardian programs to implement a regional egg addling program and to participate in repairing the goose impacts to important estuary and wetland habitats could also be explored.

The inconsistent and uncoordinated approach across the region has resulted in moving geese and their associated impacts into new areas, continued expansion of nesting and over-wintering Canada goose populations, and more significant ecological, economic, social impacts to agricultural and recreational facilities, estuaries and wetlands, large land owners and local governments.

Stewardship groups report significant and ongoing damage to native ecosystems on nearshore islands and to important estuaries, as a result of increasing goose populations, while the farming community reports significant and ongoing agricultural and economic impacts from geese.

### *Intergovernmental and First Nations Implications*

The Regional Canada Goose Management Strategy, endorsed by the CRD Board in 2012, is being implemented in an ad hoc fashion by some key stakeholders. Coordination of roles and responsibilities between all levels of government, First Nations, Peninsula & Area Agricultural Commission (PAAC), large land holders, and community groups is required. Preliminary conversations also indicate a need for inter-regional conversations and collaborations across Vancouver Island and perhaps the Salish Sea.

In early 2022, CRD and GoMIES staff initiated conversations with local government staff, large property owners (Recreation Centres, Department of National Defence, and School Districts), other governments (some First Nations, the Province) and PAAC to discuss a regional collaborative approach and obtain funding contributions toward an egg addling program. There was general support for a more coordinated regional approach and \$30,000 was obtained to contract GoMIES to conduct egg addling through April and May in key nesting hotspots around the region.

### *Social Implications*

Public education outlining the problems associated with too many geese would be an important component of a goose management service. Under a new service, a coordinated communications strategy with an education and awareness program would be developed and implemented to help residents understand the impacts Canada goose populations are having, the need for more aggressive and coordinated population control tactics to be implemented, and to engage the community in helping to protect and restore ecological habitats that have been negatively impacted by Canada geese.

### *Financial Implications*

The proposed Action Plan developed by GoMIES includes a regional egg addling program, regular summer and winter population surveys, development of outreach materials and establishing additional partners. The action plan does not include goose harvests. The estimated cost for a regional egg addling and population monitoring program is \$120,000 annually.

A Canada Goose Management service would require additional staff resources to: establish collaborative partnerships and build alliances with other agencies, First Nations and key stakeholders within the region (and inter-regionally as necessary); facilitate the development and implementation of a communications strategy; develop educational outreach materials, manage egg addling contracts with non-profits and First Nations partners, contract manage regular population surveys, support and facilitate regional implementation of the Regional Canada Goose Management Strategy and the action plan, including regular goose harvests.

A potential service could be partially funded through municipal requisition and supplemented with direct funding from large property owners (i.e., golf course operators, PAAC, farmers, recreation centres). The estimated cost to implement a service is approximately \$250,000.

*Legal Implications*

This service can be created by way of an “establishing bylaw”. Before an establishing bylaw can be adopted, it must receive approval of the electors and the Inspector of Municipalities. The *Local Government Act (LGA)* provides three ways to obtain approval: referendum/elector assent (s. 344 LGA); Alternative Approval Process (AAP, s. 345 LGA); and consent by municipal councils on behalf of electors, and by AAP within the Electoral Areas (s. 346 LGA) – while the choice on the method of participating area approval for a regional service is made by the Board, but subject to review of the Inspector of Municipalities at the time of Inspector approval of the bylaw.

For a new regional service where participants are in agreement that it should be created, the most cost-effective form of approval is municipal consent on behalf and alternative-approval process in the electoral areas. Such approval must be unanimous. The typical process prior to drafting a service bylaw is to solicit interest in consenting by writing in advance of drafting a formal bylaw and going forward with a formal consent process. If a potential participant council disagrees with proceeding with service creation, staff can look at alternatives to a regional service, such as a sub-regional service. This process takes three to five months and costs approximately \$15,000, depending on the level of support requested by municipalities and electoral areas.

**CONCLUSION**

Increasing populations of Canada goose in the capital region are causing significant impacts to estuary habitats, near shore islands in the ecological reserves, recreational beaches and lakes, playing fields and agricultural crops; resulting in increasing pressure on local governments to take more coordinated actions.

Effective management of Canada Geese requires regional collaboration, cooperation and coordination between land use agencies under various jurisdictions, including federal and provincial wildlife agencies, parks and recreation boards, local and regional governments, airport authorities, farmers, and owners of large properties such as golf courses.

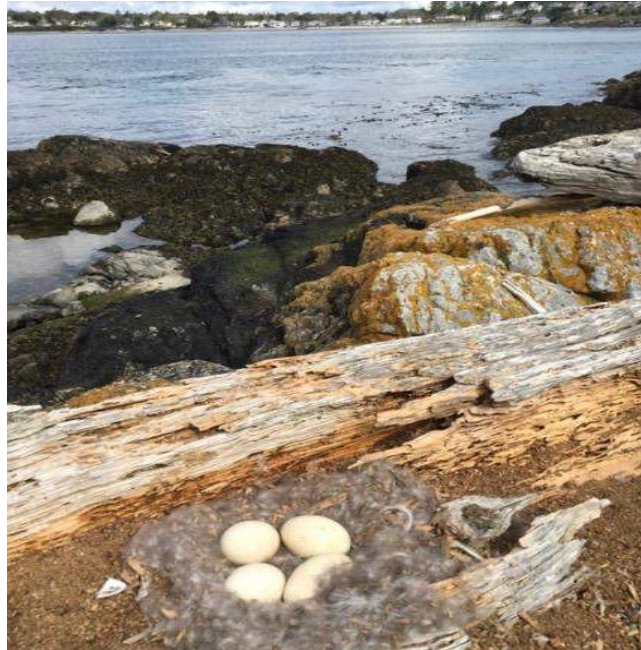
**RECOMMENDATION**

The Environmental Services Committee recommends to the Capital Regional District Board: That staff bring back a report outlining costs for a Canada Goose Management Service.

Submitted by:	Glenn Harris, Ph.D., R.P.Bio., Senior Manager, Environmental Protection
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

**ATTACHMENTS**

- Appendix A: Canada Goose Mitigation and Population Monitoring (Guardians of Mid-Island Estuaries Society) – January 27, 2022
- Appendix B: Capital Regional District 2022 Canada Goose Mitigation Draft Action Plan (Guardians of Mid-Island Estuaries Society) – February 14, 2022



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# CANADA GOOSE MITIGATION AND POPULATION MONITORING

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Guardians of Mid-Island Estuaries Society



JANUARY 27, 2022

SUBMITTED TO GLENN HARRIS, SENIOR MANAGER, ENVIRONMENTAL PROTECTION  
Capital Regional District





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**Photo Credits:** Garreth Ashley and Graeme Fowler



## Introduction

In response to requests for help from landowners and some municipalities, the Guardians of Mid-Island Estuaries Society (GoMIES) has recently initiated Canada Goose (CAGO) population mitigation within the Capital Regional District (CRD). Surveys of breeding, summer moult and winter populations have been conducted since 2017. On the ground mitigation work was begun in cooperation with the Tsawout First Nation in the form of harvests of geese in 2018 and 2019. In spring of 2020 and 2021, extensive egg addling services were provided from Sooke to the Saanich Peninsula. In 2021 alone, 241 active nests containing 1,298 eggs were treated by our addling crews in CRD municipalities. Approximately half these nests were located in previously undocumented CAGO breeding “hotspots” on local agricultural properties.

GoMIES programs have yielded valuable insight into how CAGO population mitigation measures can help reduce populations of CAGO in the CRD and elsewhere. These programs have already produced quantifiable decreases in moulting and wintering CAGO populations, which are documented in this report.

## Historical Abundance of Canada Geese (*Branta canadensis*) within the CRD

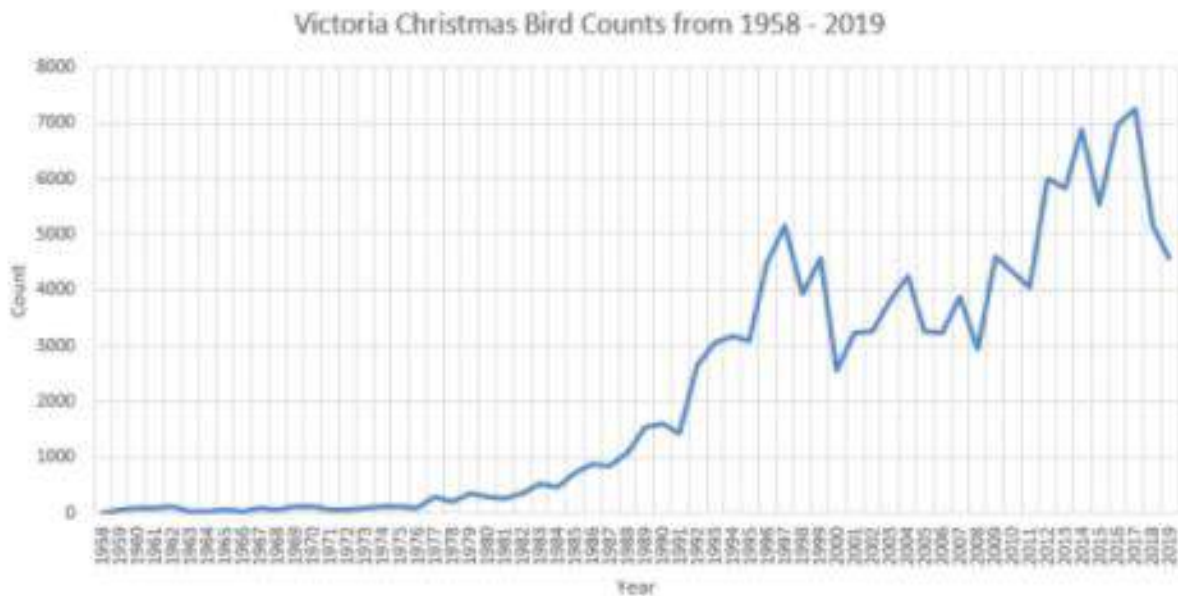
During the first half of the 20<sup>th</sup> century, the Canada Goose was mainly a migrant and summer visitant in most of British Columbia. One subspecies, the Vancouver Canada Goose (*Branta canadensis fulva*) was then known to breed in small numbers on northern Vancouver Island, but breeding was absent on southern Vancouver Island (Campbell et al. 1990). Beginning in the 1950s and then more intensively through the 1970s and early 1980s, Canada Geese were captured elsewhere and released in south coastal BC, including southern Vancouver Island, by government agencies attempting to establish populations of breeding geese.

On southern Vancouver Island, there is some evidence that private game farms may have released geese on southern Vancouver Island in the 1930s and 1940s and a small population was established at Quamichan Lake in the 1940s (Dawe and Stewart 2010). The first breeding record in the CRD was in 1954 from a few nesting geese at Elk Lake. Canada Geese remained very scarce in the CRD through the early 1960s (Dawe and Stewart 2010). In 1963 a number of winter waterfowl surveys found zero Canada Geese overwintering in the CRD (Hancock 1963). Populations began expanding by the late 1960s from breeding areas in Victoria, Duncan and Nanaimo. By the 1980s Canada Geese were already becoming nuisance birds at some locations (Campbell et al. 1990). By the 1990s, Canada Geese were nesting in most of southeastern Vancouver Island.

Only two species of waterbirds have shown significant increases within the Salish Sea area of BC since 1999, one of which is the Canada Goose. Population growth rates have been remarkable on southern Vancouver Island. Dawe and Stewart (2010) report a 16% annual growth rate (or a doubling of numbers every 4.3 years) in wintering populations from 1977 to 1997, then a levelling off from 1998 to 2010, with an estimated winter population of 15,000 geese. GoMIES has also estimated the wintering population to be from 12,000-15,000 in recent years. That estimate is similar to the 2010 estimate (Dawe and Stewart 2010) and is thought to have been maintained by the addling and harvest efforts of GoMIES



from 2010 to 2021. Overwintering goose populations there are estimated to have increased at an annual rate of 4.9% from 1999-2019 (Ethier et al. 2020). That rate translates to a doubling of the population every 14.3 years. Whether or not that current estimated rate of increase is true for the CRD, it supports the widely held view that Canada Goose populations on southern Vancouver Island have increased substantially in the past. The increasing trend is well shown by winter counts done on the annual Christmas Bird Count (Figure 1).



**Figure 1:** Historical CRD CAGO data, provided by Ann Nightingale, Rocky Point Bird Observatory.

A large percentage of the Canada Goose population on Vancouver Island remains year-round, although considerable movements of geese within the region occur. GoMIES (2015) documented the phenomena of moult migration whereby some geese that breed elsewhere on the island and the northwest USA fly to the east coast of Vancouver Island to moult in late June and early July. From their study sites at the Englishman, Little Qualicum and Campbell rivers, other seasonal movements within the region were documented. Pearce and Demers (2019) documented similar movements with birds that were captured and banded in summer in Nanaimo.

In summary Canada Goose breeding, moulting and wintering populations in the CRD have increased from zero in the 1940s to hundreds of nesting pairs and several thousands of moult and wintering geese. In 2012 the CRD commissioned a Regional Canada Goose Management Strategy which provided guiding principles for managing Canada Goose populations to reduce impacts on farmlands, parks and recreational areas. Suggested initiatives in that document remain to be implemented by the CRD.



## **Summer CAGO Population Surveys CRD (2017-2021)**

On the 7th of July 2017, an aerial moult count survey of Canada Geese (*Branta canadensis*) was conducted along the south-eastern Vancouver Island coast and included the larger nearby lakes. During the survey 4,002 CAGO were observed from Sooke to Sidney. The highest concentrations were found in the Sooke Basin, Esquimalt Lagoon and the eastern coastline of the Saanich Peninsula (Sidney, south to Tsawout FN Reserve).

A Jet Ranger Helicopter (West Coast Helicopters) was used to perform the aerial survey. Altitude for observation was held at 100ft (30.48m) when conditions allowed and 300-500ft (90-150m) over urbanized areas. Restricted urban areas were excluded by our pilot, therefore sections such as the Gorge were bypassed. GoMIES estimates an additional 500 CAGO may have been present in these zones.

A drone survey of the CRD (Sooke to Sidney) was carried out by contractors hired by GoMIES during June of 2019. Videos taken by the drone showed 3,498 CAGO present. It is estimated that 35-40% of these were young of the year. This observation highlighted the need for an intensified adding effort within the CRD.

In late June 2020 a moult count was carried out by GoMIES staff via kayak, over three days, from Sooke, moving east to the Victoria area, and north to the Saanich Peninsula. 2,774 CAGO were counted during the survey.

In July 2021 GoMIES conducted a Canada Goose moult survey within the CRD. The purpose of this survey was to identify local “hotspots” of non-migratory populations within the CRD during the annual moulting season, which lasts approximately from mid-June to mid-July. The surveyed area included Sooke Basin and progressed east, then north-east up into the Saanich Peninsula. The count was conducted over a three-day period (see Figure 2, page 7 and table 6 in the appendix I).

GoMIES’ surveyors accessed more remote areas, that were not accessible by public road, via sea kayaks. This method was primarily deployed to survey the Sooke Basin. In areas that had public road access to shorelines, optical equipment was utilized in CAGO observation.





**Photo 1:** Canada Geese congregate on the shores of Sooke Basin, 2021.



**Photo 2:** Disrupting traffic in Victoria, 2021.



**Photo 3:** Graeme Fowler, GoMIES' wildlife mitigation specialist, scans for CAGO in Sooke Basin.





**Photo 4:** A small gaggle of Canada Geese gather on a sandy shore, Sooke Basin.



**Photo 5:** Gareth Ashley is approached by extremely habituated Canada Geese, Esquimalt Lagoon.



**Table 1:** Guardians of Mid-Island Estuaries Society, Canada Goose moult count, Capital Regional District, CAGO distribution by municipality. July 2021.

Municipality	#CAGO	Notes
Sooke	540	Primarily observed within the basin and estuary
Metchosin	27	
Colwood	615	Large groups sheltering on northern shore of the lagoon
Langford		
View Royal	25	
Esquimalt		
Victoria	127	
Oak Bay	369	These individuals likely using ecological reserves as nesting grounds.
Saanich	29	
Central Saanich	46	
Sidney	71	
North Saanich	53	
<b>Total</b>	<b>1,902</b>	

Survey results showed the largest concentrations of moulting CAGO located in the Esquimalt Lagoon and the Sooke Basin. The moulting group of 104 CAGO found on McNeil Bay would be those individuals who use the Trial Islands as their nesting grounds. Whereas Willows Park and Oak Bay Marina groups would most likely be nesting on Great Chain Island. The 49 individuals recorded on Victoria Golf Course would also be utilizing Great Chain Island as a breeding territory.









## Winter Counts

On 9 February 2019 an aerial survey via helicopter of the CRD was conducted by GoMIES; 2,977 individual CAGO were tallied. On 8 February 2020, 3,431 CAGO were observed by surveyors from the Rocky Point Bird Observatory. As is the case with GoMIES' CRD CAGO surveys, the counts were conducted from Sooke to Sidney (Nightingale, Ann. 2020). Before mitigation was initiated by GoMIES in 2018, we see that CAGO winter populations peaked at approximately 7,000 individuals around 2017. This is illustrated by Anne Nightingale's historical CBC graph below (Figure 2). The decline in winter numbers can possibly be attributed to harvests done in cooperation with Tsawout First Nations (2018-2019) and an increased addling effort within the CRD by GoMIES.

**Table 2:** Results of 2019 GoMIES aerial CAGO survey.

Location	CAGO	Comments
North Saanich	1897	Feb. 10, ground count, snowing
Central Saanich	473	Feb. 10, ground count, snowing
Esquimalt Lagoon Royal Roads	127	Feb. 19th, aerial count
Sooke	101	Feb. 19th, aerial count
Victoria Golf Club	245	Feb. 19th, aerial count
Victoria Gorge waterway	66	Feb 21, ground count
Victoria Islands (James, Piers, Coal, unnamed)	68	Feb 19 <sup>th</sup> , aerial count
<b>CRD Total</b>	<b>2,977</b>	

## Effects of Resident Canada Goose Herbivory on Local Agricultural Production

Within the CRD, the overabundant resident Canada Goose population has significant impacts on thousands of acres of vegetables, berries, grain, grass and corn crops. Impacts to the local farm crops include cash crop consumption, fouling, and plant damage and removal. Farmers have been complaining for many years and their complaints and estimated financial losses are well documented through the Peninsula & Area Agricultural Commission as well as numerous media releases. Many of the on-farm mitigation tools and strategies are unpalatable to the general public. The use of propane cannons, lasers, pyrotechnics, and animal distress calls are a cause of concern for neighbouring residents. Provincial and Federal wildlife mitigation permits have been utilized by individual farms where farm characteristics are deemed appropriate, and the lethal activities can be carried out in a safe manner. For many of the farms within the CRD these permits are not appropriate due to farm size and proximity of other residences.

Nest searches and egg addling through an organized addling program provides an immediate benefit to farmers, and others, when recruitment of young birds can be dramatically reduced. Addling programs are a widely acceptable form of population control, approved by the BCSPCA. Egg addling by trained personnel can be done quietly, with limited disturbance to the public even in densely populated areas where other mitigation measures such as hunting are not allowed.



**Photo 6:** A Central Saanich farm field being used as a CAGO breeding ground.

### **Guardians of Mid-Island Estuaries Society Egg Addling in the CRD**

During the past two years, GoMIES has addled Canada Goose eggs and conducted breeding population surveys in the CRD. Results from 2020 and 2021 were astounding including hundreds of nests at many locations within the CRD (Table 3, 4). Canada Geese have expanded from traditional nesting habitats in wetlands and farmlands to offshore islets and quarries. There were 126 (2020) and 123 (2021) goose nests found on offshore islets in Oak Bay; many of which are Ecological Reserves (GoMIES 2021). No geese nested on these islands in the early 1980s. The high number of geese nesting on these islands are threatening the ecological integrity of the rare Garry Oak ecosystems there as native vegetation and rare plants are being consumed or destroyed and replaced by weedy plant species.

171 Canada Goose nests were found in quarries and farmlands in the CRD in 2021. One farm near Elk Lake held 45 nests alone (GoMIES 2021). Data from the Royal Bay development in Colwood showed 88 Canada Goose nests in 2020; we believe no addling occurred on these private lands in 2021.

### **Conclusions**

Canada Geese continue to breed, summer and overwinter in large numbers in the CRD. These populations foul beaches, parks, playgrounds and school yards, cause extensive damage to estuary and island ecosystems, and reduce productivity of farmlands. Management actions taken by GoMIES since 2018 appear to have stabilized or reduced Canada Goose numbers in the CRD. Although some progress has been made with management of goose populations, mitigation measures will need to be continued in order to maintain populations at current levels or to reduce them.



**Table 3:** Total number of nests located, and eggs added at each location by the GoMIES Field Crew in the Capital Regional District of Vancouver Island, Spring 2020.

<b>Location</b>	<b>Land Management</b>	<b>Nests located</b>	<b>Total eggs added</b>
Farmland	Private	13	60
Jemmy Jones Island	Oak Bay Ecological Reserve	19	92
Flower Island	Oak Bay Ecological Reserve	7	25
Great Chain Island	Oak Bay Ecological Reserve	46	240
Mary Tod Island	Oak Bay Ecological Reserve	1	8
Staines Island	Oak Bay Ecological Reserve	3	13
Uplands Islets	Oak Bay Ecological Reserve	2	8
<i>Trial Islands</i>	<i>Oak Bay Ecological Reserve</i>	<i>46</i>	<i>280</i>
<i>Griffin Island</i>	<i>Oak Bay Ecological Reserve</i>	<i>1</i>	<i>4</i>
<i>Alpha Island</i>	<i>Oak Bay Ecological Reserve</i>	<i>1</i>	<i>1</i>
Quarries	Private	8	32
	<b>Total</b>	<b>147</b>	<b>763</b>

**Table 4:** results from addling season 2021, CRD islands.

<b>Location</b>	<b>2021 nests</b>	<b>2021 eggs</b>
Jemmy Jones	13	66
Flower Island	8	42
Great Chain	37	216
Mary Tod	0	0
Staines Island	3	20
Uplands Islets	3	15
Lesser Trail	38	222
Greater Trial	19	96
Alpha	1	6
Oak Institute	1	5
<b>Total</b>	<b>123</b>	<b>688</b>



**Table 5:** 2021 Farm and Quarry addling results from the CRD.

General Location (private lands)	2021 Nests	2021 eggs
Saanich	7	35
Saanich	13	64
Central Saanich	2	9
Central Saanich	14	81
Central Saanich	45	239
Sooke	4	25
Sooke	7	43
Sooke	3	15
Sooke	1	4
Metchosin	1	6
Central Saanich	21	89
<b>Total</b>	<b>118</b>	<b>610</b>



**Photo 7:** GoMIES addling crew is escorted out to Great Chain Island by Matt Fairbarns, spring 2021.



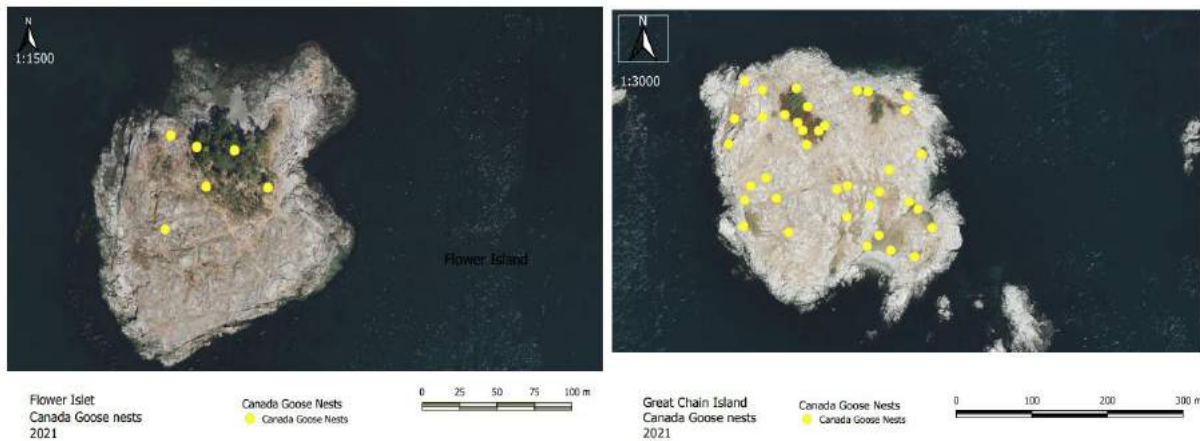


**Photo 8:** The rare Bear's-foot Sanicle (*Sanicula arctopoides*) on Greater Trial Island.

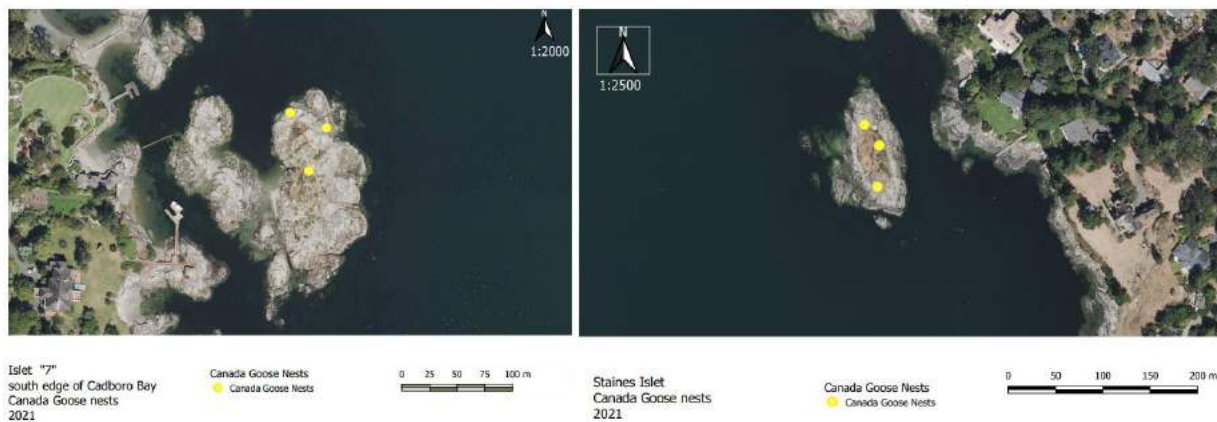


**Photos 9 & 10:** Invasive Canada Goose nests on the ecologically sensitive Greater Trial Island.

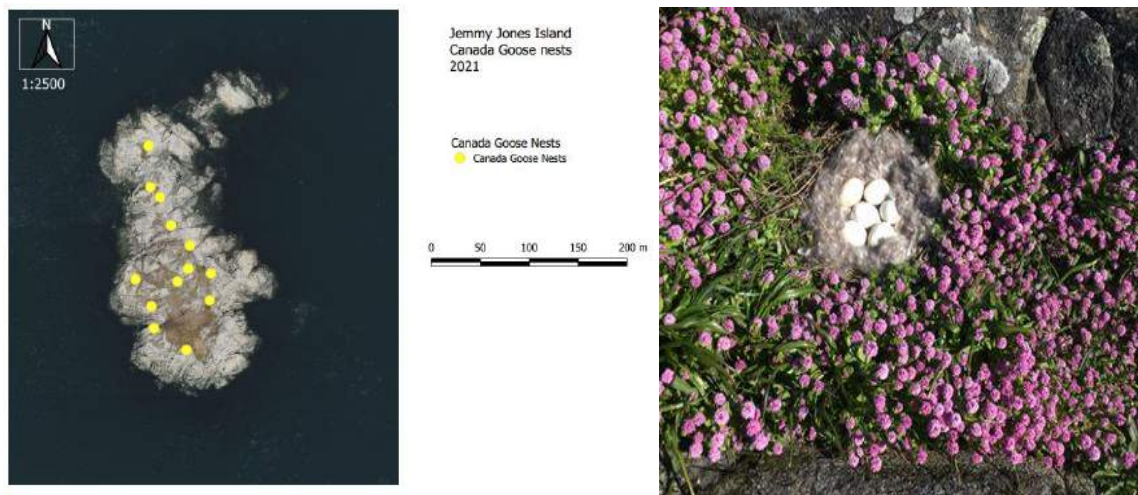




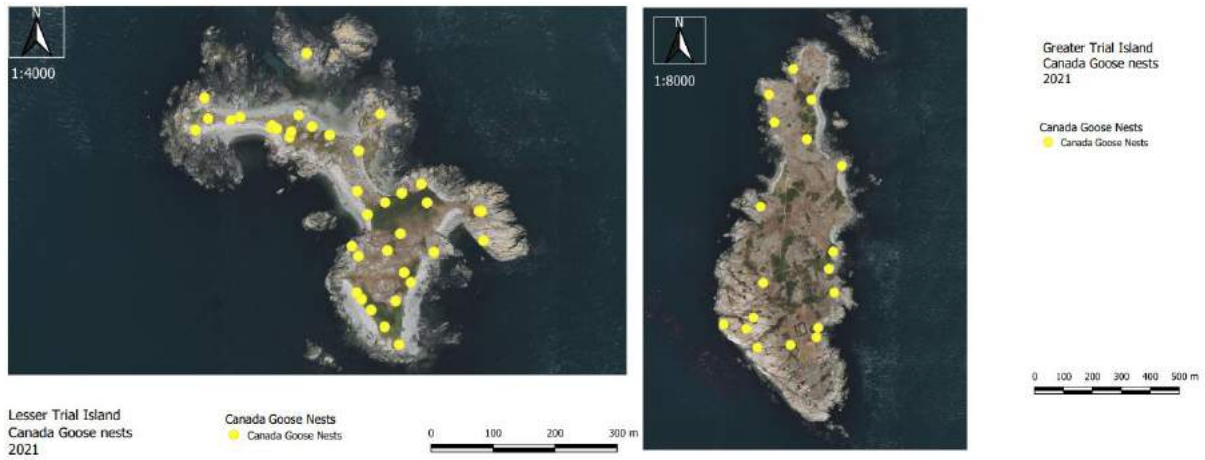
**Figure 3 & 4:** CAGO Nest locations on Flower Island and Great Chain Island 2021.



**Figure 5 & 6:** CAGO nest locations for "Islet 7" and Staines Islet, 2021



**Figure 7:** Jemmy Jones Island, CAGO nesting locations. Right: typical nest on Jemmy Jones Is.



**Figure 8 & 9:** CAGO nest locations on Lesser and Greater Trial Island, 2021.



**Figures 10 & 11:** Extremely dense nesting populations discovered in farmlands in 2021, Saanich Peninsula. Specific address not given for land owner privacy.





**Figure 12:** Both agricultural properties and quarries are used as nesting habitat by CAGO in the CRD.



**Photos 11 & 12:** Left: Approximately 450 CAGO swim along the east coast of the Saanich Peninsula. Right: Hatched-out CAGO nest in a farm field, Central Saanich.





**Photo 13:** Hundreds of Canada Geese loafing on a Saanich Peninsula agricultural field.



**Photos 14 & 15:** CAGO at Royal Roads and Esquimalt Lagoon



**Photos 16 & 17:** Large numbers of CAGO disrupting play at Victoria Golf Club.

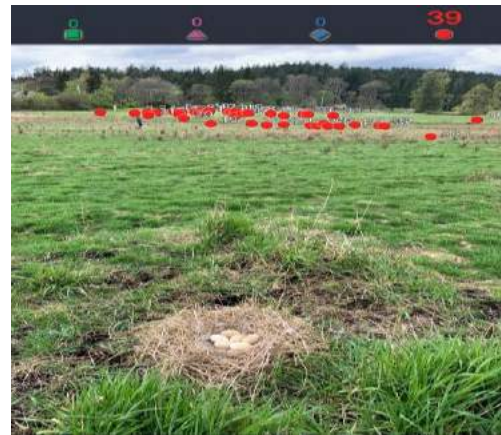




**Photo 18 & 19:** Even active quarries and construction sites are being utilized as nesting habitat by invasive CAGO in the CRD.



**Photos 20 & 21:** small ponds on farmlands within the CRD are favoured nesting sites.



**Photos 22 & 23:** Abandoned farm property near Elk Lake with high density of CAGO nesting. Forty-six nests were located and added on this single property. Right: red dots represent adult CAGO nesting and grazing in field.



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## Appendix I

Please visit:

[Aerial Moulting Count Survey of Canada Geese \(parksville.ca\)](http://parksville.ca)

[www.estuaryguardians.org](http://www.estuaryguardians.org)

**Table 6:** Location and distribution of CRD CAGO moulting population, July 2021.

Location of Observation	#CAGO	Latitude°	Longitude°	Notes
Sooke Basin West	156	48.36312	°-123.72606°	Accessed via kayak, 6 YOY sighted
Sooke Basin East	213	48.38863°	-123.66302°	Kayaked, 2 YOY sighted
Sooke River Estuary	171	48.38439°	-123.69970°	
Witty's Lagoon	0	48.38498°	-123.51226°	
Albert Lagoon	27	48.39545°	-123.49049°	
Royal Bay Construction	9	48.40827°	-123.48274°	
Royal Beach Park	96	48.41113°	-123.47727°	
Esquimalt Lagoon	510	48.42718°	-123.47003°	
Six Mile Bridge	6	48.45616°	-123.45839°	
The Gorge	19	48.44767°	-123.40511°	
City of Victoria (Delta Waterfront)	67	48.42605°	-123.37521°	
Gonzales Bay	60	48.41105°	-123.32650°	
McNeil Bay	104	48.41294°	-123.30939°	
Victoria Golf Course	49	48.41341°	-123.29590°	
Oak Bay Marina	33	48.42654°	-123.30547°	
Oak Bay	41			
Willows Park Beach	142	48.43759°	-123.29970°	
Cadboro Bay	14	48.45850°	-123.29319°	2 YOY
Telegraph Beach	15	48.46383°	-123.27980°	
Island View Beach	0			
Tsawout Spit	0	48.592553°	-123.375336°	
Tsawout Estuary	4	48.594169°	-123.391983°	
Cascade Ave.	38	48.605737°	-123.394746°	
Amity Drive	48	48.615531°	-123.400751°	
Sidney Waterfront/Pier	0			
Sidney Marina	30			
3 <sup>rd</sup> St, Sydney	16	48.660159°	-123.397552°	
Resthaven	25	48.666521°	-123.410354°	
Patricia Bay	5	48.65862°	-123.45129°	
Brentwood Bay	4	48.57668°	-123.46768°	
Beaver Lake	0			
Elk Lake	0			
<b>Total</b>	<b>1902</b>			



## **Appendix II:**

### **History of the Guardians of Mid-Island Estuaries Society's CAGO Mitigation**

The Guardians of Mid-Island Estuaries Society (GoMIES) started adding programs on Vancouver Island in the Cowichan Valley in 1999 in response to farmer complaints of excessive Canada Goose (CAGO) damage to local crops. These efforts expanded to the Parksville-Qualicum Beach area in 2002 when the City of Parksville and conservation organizations began to fund egg adding at three local estuaries. Their concerns were two-fold as rising breeding and summer moult CAGO populations were discovered to be destroying sedge marsh habitat critical to juvenile salmon and wildlife at an alarming rate, and tourists' complaints to local governments were constant. In 2010, GoMIES formed as a registered Society with a mandate to protect estuaries and bring more awareness to the many negative effects of locally over-abundant CAGO through science-based actions. Our 2015 "Canada Goose Management Strategy for the Mount Arrowsmith Biosphere Region" was a catalyst towards more active management throughout the Regional District of Nanaimo and remains as the most comprehensive document regarding Canada Goose management in North America. <http://www.parksville.ca/cms.asp?wpID=507>



# Capital Regional District 2022 Canada Goose Mitigation Draft Action Plan



**Prepared by:**

**Guardians of Mid-Island Estuaries Society**

**Prepared for:**

**Glenn Harris, Senior Manager, Environmental Protection**

**Capital Regional District**

**MOU No. EPRO2021-027**

**February 14, 2022**

1. Purpose:

The Capital Regional District (CRD) and the Guardians of Mid Island Estuaries Society (GoMIES) are working together through a Memorandum of Understanding (MOU) to develop an action plan to address and mitigate regional Canada Goose (CAGO) population growth. GoMIES deliverables through the MOU were to conduct a Canada Goose moult survey in July 2021 to identify high population density “hot spots” for moulting geese. In addition, GoMIES were to analyze their previous population surveys from 2017 to 2021, the Victoria volunteer-based Christmas bird counts, and their 2020 and 2021 addling work in the CRD to identify known and likely nesting locations. This information was synthesized into a summary report titled “Canada Goose Mitigation and Population Monitoring within the Capital Regional District” and has been previously submitted to the CRD separately from this action plan (Appendix 1.). The data from the report was used to inform a draft CRD Canada Goose Action Plan that would identify near-term and long-term mitigation activities, key partners, and stakeholders, and include a detailed budget.

2. Issue:

Regionally over-abundant Canada Geese are an ongoing concern in the CRD as they degrade coastal ecosystems, water quality, and public health and have a negative economic effect on local businesses, farms, parks, health agencies, and airport authorities.



**Figure 1:** Examples of habitat types utilized by resident Canada Geese as nesting grounds.

## **Acknowledgements**

The Guardians of Mid-Island Estuaries Society would like to thank the following Capital Regional District and municipal employees for their guidance and support in the ecological protection of southern Vancouver Island. Norm Doerksen, Superintendent of Public Works, Central Saanich, kept a small working group of community participants meeting annually to implement mitigation activities and population monitoring post 2012 Regional Canada Goose Management Strategy. Norm provided us with local intel regarding high populations and local insight into which locations would most benefit from resident Canada Goose mitigation efforts, including agricultural properties, watersheds, and private land. Jeff Weightman who graciously checked in with our crews to make sure they had the resources to successfully carry out their work. Jeff also shared valuable local knowledge leading us to nesting hotspots near Oak Bay and Esquimalt.

Mr. Mike Hicks, who has been championing the need for to control resident Canada Geese impacting sports fields, farms, and public green space in the Capital Regional District. His years of experience of working in the natural landscapes of the CRD have given him firsthand knowledge of the need for efforts in protecting its unique eco-systems. Mike 's involvement in Canada Goose fouling mitigation on sports and recreation fields within municipal parks has greatly contributed to addressing the public health and safety concerns of CRD citizens.

Finally, Dr. Glenn Harris for supporting GoMIES' Canada Goose population monitoring, which is critical in providing a foundation for making future mitigation decisions. Dr. Harris has been able to tie together and coordinate the various individuals and organizations that contribute to an efficient resident Canada Goose mitigation strategy within the CRD.





## **Introduction**

Members of the Guardians of Mid Island Estuaries Society (GoMIES) have worked to protect and restore estuaries for over 30 years and have led community-based Canada Goose mitigation activities on Vancouver Island from Saanich to Campbell River since 1998. Our science-based research approach has evolved to protect tidal sedge marsh habitats by applying eco-cultural techniques to prevent goose herbivory and degradation to critical salmon and wildlife habitat, paired with effective Canada Goose population monitoring surveys and population control measures. This work has been conducted in partnership with 6 First Nation Bands including K'omoks (Comox), Tsawout (Saanich), Snaw-naw-as (Nanoose), Snuneymuxw (Nanaimo), We Wai Kum (Campbell River), and Tla'amin (Powell River).

We have learned that when communities take part in a comprehensive spring addling program, in combination with adult population reductions through natural mortality, hunting, and First Nations harvests, then impacts associated with locally over-abundant CAGO can be significantly reduced. Recently, within the CRD our addling program expanded to cover Crown Ecological Reserves, Federal and Provincial administered conservation lands, and private lands including but not limited to farms, quarries & golf courses. GoMIES has built a high level of proficiency towards finding goose nests in a variety of habitat types and has begun training First Nation Guardians and conservation stewards in best practices to help curb juvenile recruitment. In 2021 we prevented 2188 eggs from hatching in 4 regional districts on Vancouver Island with 60% of these eggs occurring in 5 municipalities of the CRD.

The City of Parksville and the Regional District of Nanaimo have provided significant financial resources and efforts to reduce CAGO populations in their region since 2002 and after 20 years they have lowered nesting and moult populations by over 75%. In 2017, Parksville proposed a resolution at the AVICC where all municipalities signed a declaration to work together to share CAGO management responsibilities and this was formally passed at the UBCM. A MOU agreement has been endorsed by many municipalities on Vancouver Island and a key recommendation of this document will be for the municipalities of the CRD to also become active in "shared mitigation" to reduce impacts of over-abundant CAGO in most communities (Appendix 2.).

### **Longer Term Mitigation Activities to Manage Locally Over-Abundant Canada Geese within the CRD:**

The implementation of a methodical and comprehensive egg addling program is a widely recognized tool to effectively reduce population growth. By incorporating annual CAGO population surveys within the CRD, the location of densely populated nesting sites can be determined. As a result of these surveys, strategic selection of sites with the highest nesting densities, favorable access, and or critical public or environmental safety concerns, can be addressed while achieving the greatest returns for the effort in a fiscally responsible manner.

The delivery of the addling program must be intra-jurisdictional and implemented across the landscape addressing nesting activity in diverse habitats and for the benefit of varied stakeholders. Canada geese are a very adaptable species and have a wide range of suitable and productive nesting habitats. The most favorable nesting habitats include nearshore islands, parks, grasslands, freshwater lakes and waterways,

wetlands, farmland, forest edge, and rock quarries. Within the CRD these habitats can be found on lands owned or managed by First Nations, Federal or Provincial Governments, Municipal Governments, Parks, Ecological Reserves, Bird Sanctuaries, Department of National Defence, airports, marinas, and private golf courses, farms, quarries, and other commercial developments.

GoMIES has many years of experience managing and implementing addling programs on Vancouver Island. Past experiences have revealed that the most successful addling programs are carried out by dedicated staff from municipalities, conservation organizations, First Nations, and other invested stakeholders. The aggression of nesting geese, challenging characteristics of varied habitats, and the difficulty in locating camouflaged nests discourage most participants. Volunteers can be helpful but must be supported by dedicated experienced professionals, highly skilled in nest search and addling techniques and aggressive wildlife evasion skills. Equally important and a condition of Federal permit authorization is to carry out addling techniques that maintain the highest regard for animal welfare. The turnover rate for volunteers is usually quite high and the effectiveness of the addling program depends on the familiarity of the addling crew with the specific site and landscape they are working in. Geese prefer to nest in the same location year after year so by having wildlife biologists, technicians, and land managers familiar with local hotspots with strict safety protocols in place helps improve effectiveness and reduce costs.

Municipal bylaws restricting the discharge of firearms should be reviewed and where appropriate, exemptions allowed where Canada Goose mitigation through lethal means can be safely implemented i.e., farms and quarries. Provincial Conservation Officers and the RCMP can be requested to verify the property meets the requirements for safe use of firearms for this purpose. Environment Canada Wildlife Permits are required to carry out this activity “outside of the hunting season.” At least one Central Saanich farm is implementing this strategy and is successfully reducing the impacts of summer resident Canada Geese on his crops.

## **Strategic Partners and Stakeholders in Canada Goose Mitigation**

### **Local First Nations:**

GoMIES has a strong working relationship with the Tsawout First Nation. In 2018 and 2019 Tsawout FN graciously hosted GoMIES and several other First Nations during initial CAGO mitigation work. This work has had measurable benefits on stabilizing local invasive CAGO moulting populations. GoMIES believes that training First Nations Guardians and Stewardship Technicians to become skilled at CAGO nest searches and egg addling techniques is a key step towards sustained and efficient expansion of addling capacity on Vancouver Island. First Nations could provide addling on their traditional territories as they are already familiar with the land and the demands of its terrain. Tsartlip and Tsou-ke First Nations would also be contacted by GoMIES to gauge interest in developing an addling training program in their traditional territories. Tsawout Fisheries staff have already committed to learn and assist in 2022. These First Nations have an abundance of nesting geese within their territories as identified through the data collected through 2020 and 2021 surveys. GoMIES addling training programs were very successful with K’omoks Guardians who now have 6 members skilled to lead addling in their territory. In addition, GoMIES has recently been approved for funding by the City of Campbell River to train 6 Wei Wai Kum Guardians in 2022. All First Nation Bands within the boundaries of the CRD would be considered a valued source of

knowledge regarding local CAGO populations and preferred nesting and moulting locations and should be encouraged to contribute to and participate in the CAGO population surveys within the CRD.

#### **Municipal Staff:**

Staff from the individual municipalities within the CRD would be valuable partners to the CRD CAGO mitigation program. Their working knowledge of the landscape would be a valued asset. Staff members working in Parks would be prime candidates as they likely have prior knowledge of CAGO nesting locations in their specific jurisdictions. Addling training could be provided and renewed by a GoMIES staff member annually to account for turnover in staff experienced by municipalities.

#### **Federal Government of Canada:**

Canada Geese are protected under the Migratory Birds Convention Act (1994); therefore, federal approval permits are required prior to the initiation of CAGO mitigation operations. Guardians of Mid-Island Estuaries Society has a productive working relationship with Canadian Wildlife Service (CWS). This federal entity is responsible for issuing all appropriate permits for CAGO addling and First Nation harvests. CWS is branch of the Department of Environment and Climate Change Canada.

CWS also manages three Migratory Bird Sanctuaries within the CRD (Shoal Harbour MBS 144 ha, Victoria Harbour MBS 1840 ha, and Esquimalt Lagoon MBS 134 ha). Originally established to control hunting, these three regional Migratory Bird Sanctuaries provide important habitat for migrating, nesting, and moulting birds. However, CAGO have become year-round resident birds that have displaced many native nesting birds and caused severe habitat degradation (removal of eel grass and tidal marshes) within these "Sanctuaries". A 2020 CAGO survey of the Esquimalt Lagoon revealed extensive shoreline habitat degradation and loss of estuary Carex sedge marsh habitats and similar concerns have been raised by members of the Rocky Point Bird Observatory along Gorge Harbour.

#### **Department of National Defence:**

GoMIES has worked in co-operation with the Department of National Defence and have helped them fill the gaps in their addling program in and around the Winchelsea Islands Canadian Forces Maritime and Experimental Test Range, in Nanoose Bay. Sharing data and terrain approach information with the DND has increased the efficiency of the CAGO addling program in the Mid-Island Region. Continuing this equally beneficial relationship with the DND in areas around the Maritime Forces Headquarters/Joint Task Force Pacific Headquarters will increase scope on the broader picture of CAGO mitigation within the CRD. DND did have representation on the CRD CAGO Working Group.

#### **BC Parks:**

In 2021 GoMIES were grateful to establish a working relationship with the BC Parks volunteer Ecological Wardens. This partnership has proved invaluable in monitoring and now preventing the degradation of the ecological health of the protected islands on the southern coast of Vancouver Island. These volunteers alerted us to the need for professional addling services required on the Ecological Reserves of Great Chain Island, Trial Islands, Jemmy Jones, and several others.

BC Parks, Habitat Ecologist (Erica McLaren) should be approached to participate in the CAGO Working Group along with a representative of the Garry Oak Ecosystem Recovery Team (GOERT).

**Private Development Sector:**

Local large scale urban developers are eager to form coalitions in Canada Goose mitigation. Royal Bay developers have shown interest in working cooperatively with other stakeholders to increase CAGO mitigation opportunities on their development lands within the CRD. Royal Roads University may also be interested in participating in CAGO mitigation as their lands border the Esquimalt Lagoon Bird Sanctuary and their grounds are fouled by CAGO year-round. Nesting has been reported on active construction sites in the CRD which can interfere with daily operations and is a cause for concern to public safety.

**Golf Courses:**

Local businesses that utilize grass based and aquatic landscapes in the CRD, most specifically golf courses, are also negatively affected by resident CAGO. One prominent golf course has exhausted the majority of legal CAGO mitigation options and is eager to work cooperatively with other stakeholders on a much broader scale to reduce CAGO impacts to their course and surrounding environment, on behalf of their members. Other golf courses within the CRD in areas of high CAGO nesting concentrations should be encouraged to participate and support CAGO mitigation activities.

**Natural Resource Sector:**

Active gravel quarries in the CRD have also been found to support high concentrations of nesting CAGO pairs. CAGO utilize the small, vegetated ponds found in quarries to provide protection for goslings from terrestrial predators. These CAGO populations cause disruptions to daily operations, create water quality concerns, and impose employee health and safety concerns. Having worked effectively and safely in a busy quarry in Central Saanich for the past several years, GoMIES has formed a valuable partnership that has resulted in the management group having much interest in working cooperatively at the other two pits located in Sooke and Duncan. Their cooperation is appreciated as 2 of the three pits are situated adjacent to prime agricultural lands where the geese move to forage on summer cash crops.

**Agricultural Sector:**

Resident Canada Goose populations are threatening the economic viability of farming on Vancouver Island. Within the CRD, the overabundant resident Canada Goose population has significant impacts on 1000's of acres of vegetables, berries, grain, grass and corn crops. Impacts to the local farm crops include cash crop consumption, fouling, and plant damage. Farmers have been complaining for many years and their complaints and estimated financial losses are well documented through the Peninsula & Area Agricultural Commission. Through our recent work in the Saanich area, we were introduced to a farmer who had abandoned his farming opportunities many years ago due to the constant presence and foraging pressure of resident geese. His 25-acre property has become a Canada Geese nesting and rearing area for the last 10+ years. He has lost his farm status and his very productive land remains unfarmed. Observations in the area reveal similar situations on surrounding properties. Agricultural producer associations and individual farmers are increasingly willing to advocate, support and participate in a large scale, region wide CAGO mitigation program.

**Community Stewardship Organizations:**

There are many groups dedicated to the preservation of sensitive ecosystems, land, habitat, and wildlife conservation values. GOERT, Rocky Point Bird Observatory, The Victoria Naturalists just to name a few. These organizations and many others are recognizing the importance of minimizing the impacts to the

natural flora and fauna because of the constant foraging pressure of the introduced over-abundant CAGO within the CRD. Many of these organizations have come forward to provide valuable historical knowledge of the increasing population accounts and increased impacts to the ecosystem. Many groups have provided staff and other resources to implement and support important CAGO surveillance and mitigation activities. A comprehensive list of the many conservation organizations active within the CRD should be generated as part of the in-depth action plan process and sharing knowledge and information with these groups will build strong community support for a well-structured CAGO mitigation program.

## **Establish and Maintain Processes and Protocols for Information Sharing and Decision Making**

### **Issues and Recommendations:**

The CRD developed a Canada Goose Management Strategy in 2012 but has not actively worked to implement key mitigation activities in recent years. A web site is hosted by the CRD as part of the Regional Goose Management Strategy and provides a good place for more information to be uploaded to this site to better inform the public of recent and on-going initiatives. GoMIES has a proven track record in working with communications and parks staff in Parksville and Powell River. We have learned what is most effective in terms of one point of contact. GoMIES would play an important role in ensuring public access to general and scientific information regarding the impacts the locally over-abundant CAGO population has on the natural environment and share the story of their origin and the distinct difference between this population and the native migratory population. This information could be posted onto the CRD website. Such information could include key partnerships and progress made in other Island communities and touch on the widespread economic impacts these introduced geese have across the landscape. While each individual municipality may have differing impacts from the year-round presence of Canada Geese the CRD as a whole has suffered public health and safety risks, water quality issues, fish and wildlife habitat destruction, crop depredation losses to farms, and municipal sports and recreation impacts. This awareness will help to inform the public and provide the background information in support of the proposed comprehensive CAGO Mitigation Action Plan.

The CAGO impacts to rare, threatened, or red-listed flora and fauna within nearshore Oak Bay Islands is urgent and needs to be addressed as these Garry Oak Ecosystems are converting to invasive plant and CAGO nesting hotspots which could affect their Ecological Reserve protection status.

The CRD should participate in the Vancouver Island CAGO Working Group (VICAGOWG) to share information, techniques, program successes and lessons learned (Appendix 2 – MOU). The City of Parksville has led this group since 2015 with other members being representatives of Campbell River, Comox Valley Regional District, Regional District of Nanaimo, Qualicum Beach, Powell River (including the Tla'min First Nation), and Nanaimo. Members of the CRD CAGO Working Group have attended several meetings but have not formally signed the MOU. These municipalities have actively supported or implemented addling programs, CAGO banding and re-sight studies, population surveys, management and mitigation plans, and First Nations harvests at a cost of over \$400,000 since 2015. GoMIES has conducted the most complete CAGO population surveys of any region in BC for the entire east coast of Vancouver Island (including Gulf Islands, Central Coast, and Powell River) funded mostly by the Ministry of Agriculture and Fisheries. The CRD has greatly benefited by these CAGO mitigation and population assessments but as the region of Vancouver Island with the highest year-round populations with no formal

comprehensive addling program; unabated juvenile recruitment has detrimentally affected all CRD municipalities and communities in the mid and upper Vancouver Island.

Annual public information sessions along with more frequent stakeholder engagement sessions would help to educate interested parties as to “why” these mitigation activities are necessary and how important it is they show support for these efforts. The CRD or Municipal offices can provide the venue to reduce the cost of hosting such events.

Development of a CRD CAGO Mitigation Steering Committee to ensure the program is operating within the mandate of the CRD and to provide frequent updates to the CRD regarding the activities and progress of the mitigation program.

This mitigation plan should be thought of as a long-term plan with costs expected to lessen as sustained activities lower CAGO populations (as realized by the RDN, City of Parksville, and Powell River).

Annual Monitoring of the CAGO population is important and can be achieved effectively by empowering First Nation, Community Stakeholders and Naturalist groups to work cooperatively with the CAGO Mitigation Program Team. Ground counts are recommended but periodically (every few years) a more intensive aerial count will help to reveal the thorough effectiveness of the actions taken by the CRD towards CAGO mitigation and may be funded in combination with other Vancouver Island communities.

Table 1: 2022-23 CRD Canada Goose Action Plan

Activities	Descriptions	Expected Results	Start Date	End Date
<i>Addling permits from ECCC: Canadian Wildlife Service and BC Crown Lands Officer accompanied with Management Plans</i>	<ul style="list-style-type: none"> <li>Prepare addling permit to CWS with all landowner forms signed and list all individuals participating in addling including Tsawout First Nation representatives</li> </ul>	<ul style="list-style-type: none"> <li>30 + private farms and large commercial landowners throughout the CRD and Provincial approval for all Crown Islands in Oak Bay/Victoria</li> <li>Obtain landowner permissions from all private and public landowners or managers</li> </ul>	February 2022	March 15, 2022
<i>Implement a comprehensive addling program throughout known and expected hotspots within all municipalities in the CRD</i>	<ul style="list-style-type: none"> <li>Focus on private farms, golf courses, large land developments, quarry, Crown islands and estuaries. CRD and municipal parks could be included if nests reported, and we have Parks Manager permission letter.</li> </ul>	<ul style="list-style-type: none"> <li>Locate approximately 300 Canada Goose nests and addle all eggs found.</li> <li>Map all locations and record data during at least 2 site visits to each nest</li> <li>Identify new sites for future years and count all adult birds and juveniles observed</li> </ul>	March 28, 2022	May 20, 2022

<p><i>Conduct a summer moult count at all known hotspots along marine waterways and larger lake and wetlands both on public and private lands but predominately waterfront Crown or urban parks.</i></p>	<ul style="list-style-type: none"> <li>• Ground counts and kayaks will be used over a two-week period.</li> <li>• Volunteer naturalists could assist along with local First Nations during their marine based activities.</li> </ul>	<ul style="list-style-type: none"> <li>• All Canada Geese observed will be counted and recorded on a GPS system for future mapping. Most groups will be photographed. Populations will be recorded and reported out as within each municipality and as a total for the CRD. Surveys started in early June will be able to determine adult populations and juvenile young of the year to measure success of addling and help determine location gaps in our addling efforts.</li> </ul>	<p>June 1, 2022</p>	<p>June 17, 2022</p>
<p><i>Partnership Building and Community Outreach</i></p>	<ul style="list-style-type: none"> <li>• Golf courses, PAAC, Royal Bay Development, First Nations, Ministry of Agriculture, BC Parks, GOERT, CWS, DND, Victoria Airport, Parks Canada, Rocky Point Bird Observatory, Naturalists, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• More organizations, First Nations, all CRD municipalities, and volunteer groups sharing the responsibilities of CAGO mitigation to protect ecological, social, recreational, health, commercial and agricultural values.</li> <li>• Outreach presentations both in-person and through Zoom if necessary</li> </ul>	<p>On-going</p>	<p>On-going</p>
<p><i>Addling Summary</i></p>	<ul style="list-style-type: none"> <li>• Data compiled and mapped within each municipality.</li> </ul>	<ul style="list-style-type: none"> <li>• Summary Table submitted</li> </ul>	<p>June</p>	<p>August 31, 2022</p>
<p><i>Moult Count Summary</i></p>	<ul style="list-style-type: none"> <li>• Data compiled and mapped within each municipality.</li> </ul>	<ul style="list-style-type: none"> <li>• Summary Table submitted along with GPS locations to CRD GIS department for mapping</li> </ul>	<p>August</p>	<p>September 29, 2022</p>
<p><i>Year End Reporting</i></p>	<ul style="list-style-type: none"> <li>• Overview of all activities above with recommendations and budget revisions</li> </ul>	<ul style="list-style-type: none"> <li>• Draft Report for CRD Review</li> </ul>		<p>November 30, 2022</p>

Table 2: 2022-23 CRD Canada Goose Population Management and Mitigation Program Budget

ACTIVITY	DESCRIPTION	LABOUR DESCRIPTION	TIMELINE	BUDGET
<i>Applications for Addling permits from ECCC &amp; Writing Supporting Management Plans</i>	<ul style="list-style-type: none"> <li>Writing specific regional management plans based on population surveys, ecological &amp; economic impacts, landowner, and stakeholder partnerships, proposed mitigation activities, and submit wildlife permit application(s)</li> </ul>	<ul style="list-style-type: none"> <li>Generating maps, population survey accounts, historic impact accounts and mitigation activities, proposed mitigation activities and rationale, obtaining landowner authorizations</li> <li>First time Landowner Authorizations usually done in person &amp; onsite and usually incur travel expenses</li> </ul>	Jan to Mid-March	\$15,000.00
<i>Addling Plan &amp; Implementation</i>	<ul style="list-style-type: none"> <li>Strategically implement a comprehensive addling program within municipalities encompassed by the CRD</li> <li>Target Municipal Parks and Recreation Lands, Oak Bay Islands, Private Quarries, Golf Courses, Farms</li> <li>Nest Search, Geo-reference site, addle &amp; document # eggs, visit up to 3 times per season in prime habitats</li> </ul>	<ul style="list-style-type: none"> <li>Three crews of 2 people minimum</li> <li>Vehicle Expenses, Boat Expenses</li> <li>Meals &amp; Accommodation Expenses</li> <li>Municipal Staff &amp; First Nation Training &amp; Involvement</li> <li>Approximately 300 nests per season</li> </ul>	Mar 28 to May 20, 2022	\$45,000.00
<i>Summer Moults Population Survey</i>	<ul style="list-style-type: none"> <li>Comprehensive survey of adult &amp; young geese throughout the CRD</li> <li>Reveals nesting success and identifies future priority areas</li> <li>Data compiled and mapped within each municipality.</li> <li>Include community groups where possible i.e., Naturalists</li> </ul>	<ul style="list-style-type: none"> <li>Two crews of 2 people</li> <li>Focus on freshwater lakes and coastal marine habitats</li> <li>Vehicle Expenses, Boat Expenses</li> <li>Meals &amp; Accommodation Expenses</li> <li>Honorarium for Community Group participation (km or lunch)</li> </ul>	June 1 - 17, 2022	\$12,000.00
<i>Partnership Building</i>	<ul style="list-style-type: none"> <li>Educate stakeholders and potential partners about all aspects of CAGO environmental and economic impacts that pertain to their</li> </ul>	<ul style="list-style-type: none"> <li>In person and onsite discussions</li> <li>Encourage participation and or financial support for CAGO mitigation activities within the CRD</li> </ul>	Ongoing	\$12,500.00



	<p>organization – estuaries, farms, sensitive ecosystems, recreational lands, and lakes etc.</p> <ul style="list-style-type: none"> <li>Golf courses, PAAC, Royal Bay Development, First Nations, Ministry of Agriculture, BC Parks, GOERT, CWS, DND, Victoria Airport, Parks Canada, Rocky Point Bird Observatory, Naturalists, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Attend potential partner organization meetings or activities</li> <li>Engage approximately 20 potential partnership organizations per year</li> <li>Develop a PowerPoint presentation that can be used for community outreach</li> </ul>		
<i>Addling Summary</i>	<ul style="list-style-type: none"> <li>Data compiled and mapped within each municipality.</li> </ul>	<ul style="list-style-type: none"> <li>Reporting information includes nesting habitat types, landownership, location/municipality, # of adult geese on site, photos, comparisons to previous years data if a revisited site</li> <li>Work with CRD GIS department to build maps showing nests within all municipalities</li> </ul>	June - August	\$5,000.00
<i>Moult Count Summary</i>	<ul style="list-style-type: none"> <li>Data compiled and mapped within each municipality.</li> </ul>	<ul style="list-style-type: none"> <li>Reporting information includes moult location habitat types, landownership, municipality, # of adult and YOY geese on site, photos, comparisons to previous years data if a revisited site</li> <li>Work with CRD GIS department to build maps showing moulting populations within all municipalities</li> </ul>	August - Sept	\$5,000.00
<i>Year End Reporting &amp; CRD Municipal Committee Presentation</i>	<ul style="list-style-type: none"> <li>Overview of all activities above with recommendations and budget revisions</li> </ul>	<ul style="list-style-type: none"> <li>Draft Report and circulate for CRD Review and revise for Final Submission</li> <li>Outline success/pitfalls, and strategy for next year's program</li> </ul>	November 30	\$5,000.00
<i>Administration</i>	<ul style="list-style-type: none"> <li>Office Incidentals</li> <li>Bookkeeper</li> </ul>	<ul style="list-style-type: none"> <li>5%</li> </ul>		\$5000.00
<i>VICAGOWG Report &amp; Presentation</i>	<ul style="list-style-type: none"> <li>Report CRD Involvement &amp; Program Success</li> </ul>	<ul style="list-style-type: none"> <li>Outline expansive and intensive approach CRD has taken</li> </ul>	Annual	In Kind
			<b>TOTAL</b>	<b>\$104,500.00</b>

APPENDIX 1 – Summary Report

APPENDIX 2 – VICAGOWG MOU



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**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**     **Alternative Approval Process for Bylaw 4515 – Solid Waste Disposal Loan Authorization**

**ISSUE SUMMARY**

Establish the process for conducting an Alternative Approval Process for Bylaw No. 4515 by confirming the deadline to receive elector responses, establishing the total number of electors, and approving a synopsis of the bylaw, Notice of Alternative Approval Process and the Elector Response Form.

**BACKGROUND**

At its meeting held October 12, 2022, the CRD Board gave three readings to the following bylaw, attached as Appendix A:

- **Bylaw No. 4515**, “*Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022*” to authorize the borrowing of thirty six million dollars (\$36,000,000) for the purpose of acquiring, designing and constructing solid waste facilities and site improvements at the Hartland Landfill site, construction of remote transfer stations and all related ancillary works and equipment.

The bylaw obtained Inspector of Municipalities approval on December 8, 2022. The next step prior to adopting the bylaw is to obtain elector assent. The CRD Board directed elector approval be obtained by way of a regional Alternative Approval Process (AAP) for all electors in the local service area.

To conduct the AAP, the attached Synopsis of Bylaw No. 4515 (Appendix B), Notice (Appendix C) and Elector Response Form (Appendix D) have been prepared in accordance with the applicable sections of the *Local Government Act* and the *Community Charter*. With an AAP, the Board may proceed with adopting the bylaw unless more than 10% of electors indicate that the Board must obtain the assent of the electors by way of assent voting (referendum). The proposed deadline to receive elector responses is January 23, 2023.

The total number of electors in the regional Solid Waste Service (i.e. Capital Regional District) is determined to be 332,080 of which 10% is 33,208 electors.

For additional information, please refer to the previous staff reports dated October 12, 2022 (Appendix E).

**ALTERNATIVES**

*Alternative 1*

1. That in accordance with section 86(3) of the *Community Charter*, the date of January 23, 2023 be confirmed as the deadline by which electoral response, under the regional Alternative Approval Process for CRD Bylaw No. 4515, must be submitted to the Capital Regional District

**Capital Regional District Board – December 14, 2022**  
**Alternative Approval Process for Bylaw 4515 – Solid Waste Disposal Loan Authorization 2**

- by qualified electors within the Capital Regional District;
2. That the attached Synopsis of Bylaw No. 4515 (Appendix B), Notice of Alternative Approval Process (Appendix C), and the Elector Response Form (Appendix D) be approved; and
  3. That the total number of registered electors within the service area is 332,080 and that 10% of that number is 33,208 electors.

*Alternative 2*

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

**CONCLUSION**

The CRD Board has previously approved obtaining elector approval by regional alternative approval process for Bylaw No. 4515 to borrowing of \$36,000,000 for the purpose of acquiring, designing and constructing solid waste facilities and site improvements at the Hartland Landfill site, construction of remote transfer stations and all related ancillary works and equipment. To conduct the regional Alternative Approval Process, the Board must confirm the deadline to receive elector responses, establish the number of electors, and approve the Notice of Alternative Approval Process and the Elector Response Form.

**RECOMMENDATION**

1. That in accordance with section 86(3) of the *Community Charter*, the date of January 23, 2023 be confirmed as the deadline by which electoral response, under the regional Alternative Approval Process for CRD Bylaw No. 4515, must be submitted to the Capital Regional District by qualified electors within the Capital Regional District;
2. That the attached Synopsis of Bylaw No. 4515 (Appendix B), Notice of Alternative Approval Process (Appendix C), and the Elector Response Form (Appendix D) be approved; and
3. That the total number of registered electors within the service area is 332,080 and that 10% of that number is 33,208 electors.

Submitted by:	Marlene Lagoa, Manager, Legislative Services & Deputy Corporate Officer
Concurrence:	Stephen Henderson, Acting General Manager, Corporate Services
Concurrence:	Larisa Hutcheson, P. Eng., General Manager, Parks & Environmental Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENT(S)**

- Appendix A: Bylaw 4515 at Third Reading
- Appendix B: Synopsis of Bylaw 4515
- Appendix C: Notice of Alternative Approval Process for Bylaw 4515
- Appendix D: Elector Response Form for Bylaw 4515
- Appendix E: Previous Staff Report October 12, 2022

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4515

\*\*\*\*\*
A BYLAW TO AUTHORIZE THE BORROWING OF THIRTY SIX MILLION DOLLARS
(\$36,000,000) FOR THE PURPOSE OF ACQUIRING, DESIGNING AND CONSTRUCTING
SOLID WASTE FACILITIES AND SITE IMPROVEMENTS
\*\*\*\*\*

WHEREAS:

- A. By Bylaw 1903, "Solid Waste Disposal Local Service Establishment Bylaw No. 1, 1991", the Regional Board continued a service for solid waste disposal;
B. It is deemed desirable to provide solid waste management, waste reduction, recycling and waste disposal facilities hereunder described in accordance with the local service of Solid Waste Disposal;
C. The works shall include landfill facilities, roads and improvements at the Hartland Landfill site, construction of remote transfer stations, water supply facilities, composting facilities, watershed management, and all related ancillary works and equipment deemed necessary by the Board for landfill and operations, including but not limited to those works in the Solid Waste Management Plan and its amendments;
D. The estimated cost of the refuse disposal facilities and improvements including expenses incidental thereto to be funded from debt servicing, is the sum of Thirty Six Million (\$36,000,000) dollars, which is the amount of debt intended to be created by this bylaw;
E. Pursuant to section 407 of the Local Government Act, participating area approval is required for this borrowing and shall be obtained by alternative approval process for the entire service area under section 345 of the Local Government Act.
F. 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 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 solid waste facilities and equipment therein 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 Thirty-Six Million Dollars (\$36,000,000); and

**Appendix A**

- 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 the design and construction of the landfill facilities, roads and improvements at the Hartland Landfill facilities and all related ancillary works and equipment deemed necessary by the Board for landfill and operations, including but not limited to those work in the Solid Waste Management Plan and its amendments.
- 2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is fifteen (15) years.
- 3. This Bylaw may be cited as "Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022".

READ A FIRST TIME THIS	12 <sup>th</sup>	day of	October, 2022
READ A SECOND TIME THIS	12 <sup>th</sup>	day of	October, 2022
READ A THIRD TIME THIS	12 <sup>th</sup>	day of	October, 2022
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	8 <sup>th</sup>	day of	December, 2022
APPROVED BY ALTERNATIVE APPROVAL PROCESS PER S. 345 OF THE LOCAL GOVERNMENT ACT THIS		day of	202_
ADOPTED THIS		day of	202_

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

FILED WITH THE INSPECTOR OF MUNICIPALITIES THIS      <sup>th</sup>      day of      20\_\_

**Synopsis of Bylaw No. 4515, “*Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022*”**

Bylaw No. 4515 would authorize the borrowing of thirty-six million dollars (\$36,000,000) for the purpose of acquiring, designing and constructing solid waste facilities and site improvements at the Hartland Landfill site, construction of remote transfer stations and all related ancillary works and equipment. The debt servicing costs will be recovered through the tipping fees at Hartland Landfill site over a period of 15 years. The solid waste disposal local service area applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

Please note that this synopsis of Bylaw No. 4515 is not intended to be or understood as an interpretation of the bylaw. A copy of the complete bylaw and this notice may be viewed at Capital Regional District offices located at 625 Fisgard Street, Victoria, BC from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays). The bylaw may also be viewed at [www.crd.bc.ca/SolidWasteAAP](http://www.crd.bc.ca/SolidWasteAAP).



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**NOTICE TO ELECTORS  
WITHIN THE CAPITAL REGIONAL DISTRICT**

**Alternative Approval Process for Bylaw No. 4515 – authorize the borrowing of \$36,000,000 for the purpose of acquiring, designing and constructing solid waste facilities and site improvements**

**Notice is hereby given** that the Board of Directors of the Capital Regional District ("CRD") proposes to adopt Bylaw No. 4515, "*Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022*" to authorize borrowing of \$36,000,000 for the purpose of acquiring, designing and constructing solid waste facilities and site improvements.

Bylaw No. 4515 would authorize the borrowing of thirty-six million dollars (\$36,000,000) for the purpose of acquiring, designing and constructing solid waste facilities and site improvements at the Hartland Landfill site, construction of remote transfer stations and all related ancillary works and equipment. The debt servicing costs will be recovered through the tipping fees at Hartland Landfill site over a period of 15 years. The solid waste disposal local service area applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

Please note that this synopsis of Bylaw No. 4515 is not intended to be or understood as an interpretation of the bylaw. A copy of the complete bylaw and this notice may be viewed at Capital Regional District offices located at 625 Fisgard Street, Victoria, BC from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays). The bylaw may also be viewed at [www.crd.bc.ca/SolidWasteAAP](http://www.crd.bc.ca/SolidWasteAAP).

**Take further notice** that the CRD may proceed with Bylaw No. 4515 unless at least 33,208 electors within the Capital Regional District indicate, by signing the elector response form, that the Board must obtain the assent of the electors by way of an assent vote (referendum) before proceeding to adopt Bylaw No. 4515.

The elector response must be in the form as established by the CRD and is available from the CRD on request or from the CRD website at [www.crd.bc.ca/SolidWasteAAP](http://www.crd.bc.ca/SolidWasteAAP). The only persons entitled to sign elector response forms are electors of the area to which the alternative approval process opportunity applies. The alternative approval process opportunity applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

The deadline for submitting signed elector response forms, in relation to Bylaw No. 4515, to the CRD is **12:00 pm (noon) on Monday, January 23, 2023**. Forms must be received by the deadline to be counted.

The CRD has determined that the total number of electors within the service area is 332,080 and that 10% of that number or 33,208 electors must submit elector response forms to prevent the CRD from enacting Bylaw No. 4515 without the assent of the electors by assent voting (referendum).

Questions regarding Bylaw No. 4515 may be directed to Russ Smith, Senior Manager, Environmental Resource Management, 625 Fisgard Street, Victoria, BC, 250.360.3080, [rsmith@crd.bc.ca](mailto:rsmith@crd.bc.ca), from 8:30



am to 4:30 pm, Monday to Friday (excluding statutory holidays) from the date of this notice until January 23, 2023.

### **Qualifications for Resident and Non-Resident Property Electors**

**Resident Elector:** You are entitled to submit an elector response form as a Resident Elector if you are 18 years or older on the date of submission of the elector response form, are a Canadian citizen, have resided in British Columbia for at least 6 months and currently reside in the CRD prior to signing the elector response form.

**Non-Resident Property Elector:** You may submit an elector response form as a Non-Resident Property Elector if you are 18 years or older on the date of submission of the elector response form, are a Canadian citizen, have resided in British Columbia for 6 months, have owned and held registered title to property in the CRD for 30 days and do NOT qualify as a Resident Elector. If there is more than one registered owner of the property (either as joint tenants or tenants in common) only one individual may, with the written consent of the majority, submit an elector response form.

To obtain an elector response form, or for questions about the alternative approval process, contact Legislative Services, 625 Fisgard Street, Victoria, BC, V8W 1R7, email [legserv@crd.bc.ca](mailto:legserv@crd.bc.ca), telephone 250.360.3024 or toll free 1.800.663.4425 from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays).

A copy of the elector response form may be downloaded from: [www.crd.bc.ca/SolidWasteAAP](http://www.crd.bc.ca/SolidWasteAAP)

Elector response forms, a copy of Bylaw No. 4515, and a copy of this Notice may be inspected during regular office hours, 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays) from the date of this notice until **Monday, January 23, 2023** at the following CRD locations:

- CRD headquarters, 625 Fisgard Street, Victoria
- on the CRD website: [www.crd.bc.ca/SolidWasteAAP](http://www.crd.bc.ca/SolidWasteAAP)

Given under my hand at Victoria, BC this 17<sup>th</sup> day of December 2022

Kristen Morley  
Corporate Officer



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**Alternative Approval Process for Bylaw No. 4515 – authorize the borrowing of \$36,000,000 for the purpose of acquiring, designing and constructing solid waste facilities and site improvements**

By completing this elector response form I, the undersigned elector, residing or owning real property within the Capital Regional District (“CRD”), as defined below, do hereby present my name on this elector response form for purposes of **OPPOSING** the CRD adopting Bylaw No. 4515, “Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022” to authorize borrowing of \$36,000,000 for the purpose of acquiring, designing and constructing solid waste facilities and site improvements, unless a vote is held.

**I acknowledge that I am a person who would otherwise be entitled to register and vote in respect of this matter, had the assent of the electors by voting been required. I hereby certify that:**

1. I am 18 years of age or older;
2. I am a Canadian citizen;
3. I have lived in British Columbia for at least 6 months immediately before signing this elector response form;
4. In the case of a Non-Resident Property Elector:
  - a) I am not entitled to vote as a Resident Elector in the CRD for purposes of this matter;
  - b) I have been a registered owner of real property in the Regional District as defined below for at least 30 days before signing this elector response form;
  - c) I acknowledge that I may sign this elector response form on behalf of only one property that I own in the Regional District;
  - d) If there is more than one individual who is the registered owner of the property, only one of those individuals may sign this elector response form in relation to the property, assuming the Non-Resident Property Elector has the written consent of the number of individuals who, together with the person signing this elector response form constitutes a majority of the registered owners.
  - e) The only persons who are registered owners of the real property are individuals who do not hold the property in trust for a corporation or another trust.
5. I am not disqualified from voting under the *Local Government Act* or any other enactment or otherwise disqualified by law from voting.

This alternative approval process applies to all municipalities and electoral areas of the CRD, including Central Saanich, Colwood, Esquimalt, Highlands, Langford, Metchosin, North Saanich, Oak Bay, Saanich, Sidney, Sooke, Victoria, View Royal, and the Electoral Areas of Juan de Fuca, Salt Spring Island, and Southern Gulf Islands.

I understand and acknowledge that I may not sign an elector response form against Bylaw No. 4515 more than once and may not withdraw my name from an elector response form after **January 23, 2023**. I understand and acknowledge that this elector response form must be received by the CRD no later than **12:00 pm (noon) on January 23, 2023**. In an effort to obtain signatures with respect to this matter, I declare that I have not knowingly made any false or misleading statements to another person with respect to this elector response form, action or other matter to which this elector response form relates.

**Signed elector response forms must be returned to the CRD, from 8:30 am to 4:30 pm, Monday to Friday (excluding statutory holidays), on or before 12:00 pm (noon) on January 23, 2023 at the following CRD office location:** Legislative Services, 625 Fisgard Street, Victoria, BC, V8W 1R7, or by emailing a legible scanned copy to [legserv@crd.bc.ca](mailto:legserv@crd.bc.ca).

<b>FULL NAME OF ELECTOR</b> (please print):	
<b>FULL RESIDENTIAL ADDRESS OF ELECTOR</b> Street Address including Town/City (please print):	
<b>FOR NON-RESIDENT PROPERTY ELECTOR</b> Address of Property in CRD service area (please print):	
<b>SIGNATURE OF ELECTOR:</b>	

*Section 86(7) of the Community Charter requires the elector’s full name and residential address or the address of the property in relation to which the person is entitled to register as a Non-Resident Property Elector in order for this response form to be counted.*



**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, OCTOBER 12, 2022**

**SUBJECT Bylaw No. 4515: Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022**

**ISSUE SUMMARY**

A Capital Regional District (CRD) Board resolution is required to approve Loan Authorization Bylaw No. 4515 for the purpose of financing specific projects in the Solid Waste Disposal Service five year (2023-2027) capital plan.

**BACKGROUND**

On September 21, 2022, the Board gave provisional approval of the CRD 2023 financial plan, inclusive of the Solid Waste Disposal Service five year (2023-2027) capital plan. As is the case each year following plan approval, staff prepare necessary loan authorization bylaws and security issuing bylaws. The Solid Waste Disposal Service capital plan includes planned infrastructure and improvements totalling \$75.6 million, which requires borrowing of \$36 million. These capital projects include a renewable natural gas plant construction, landfill cell liner renewal, and sedimentation pond relining and expansion.

By legislation, loan authorization bylaws expire after five years, and so are most commonly drafted to cover the five-year financial plan. The loan authorization bylaw sets out the purpose of the borrowing, the maximum amount to be borrowed and the maximum duration of the borrowing. Requests for funds to be drawn against the loan authorization bylaw will only be authorized upon Board approval of a subsequent security issuing bylaw. The security issuing bylaws are prepared twice annually and include only those borrowings for which there is a cash flow need as authorized by the approved financial plan.

As part of the loan authorization bylaw process, the bylaw requires Municipal Inspector approval and elector consent. The following bylaw is proposed:

<b>Service Area</b>	<b>Action</b>	<b>Purpose</b>	<b>Bylaw</b>
Environmental Resource Management	Loan Authorization Bylaw	To create a loan authorization bylaw to permit long-term borrowing related to the capital plan for this service.	4515

**ALTERNATIVES**

*Alternative 1*

1. That Bylaw No. 4515, "Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022", be introduced and read a first, second and third time; and
2. That Bylaw No. 4515 be referred to the Inspector of Municipalities for approval, and if received, that staff conduct an alternative approval process for the entire service area, as per section 345 of the *Local Government Act*, and, if successful, that Bylaw 4515 then be brought forward for adoption.

*Alternative 2*

That the proposed bylaw be referred back to staff for further information.

**IMPLICATIONS**

*Financial & Legislative Implications*

Section 24 of the *Municipal Finance Authority Act*, RSBC 1996 c 325 states that a regional district security issuing bylaw may only be enacted and financed if the long-term borrowing is arranged through the Municipal Finance Authority of British Columbia (MFABC). The loan authorization required is \$36 million and will support the planned five year capital plan expenditures commencing in January 2023. The estimated debt servicing costs for the borrowing are included in the 2023 CRD provisional financial plan. Based on MFABC's current indicative interest rate, the estimated annual debt servicing cost of approximately \$1.3 million over an amortization term of 15 years will total approximately \$19.6 million. The debt servicing costs within the plan are funded by tipping fees. Actual borrowings in each of the next five years will be based on the cash flow requirements for the year.

Long-term borrowing (i.e. loans with a term of more than five years) cannot be undertaken without the loan authorization bylaw being approved and, subsequently and separately, a security issuing bylaw being approved, in accordance with the *Local Government Act*.

As part of the loan authorization bylaw approval process the bylaw requires elector approval. Elector approval can be obtained through consent on behalf of municipal participants and electoral participating areas (by sub-regional AAP), a referendum, or by a regional alternative approval process (AAP) for the entire service area. A regional AAP is initiated when the loan authorization bylaw has received third reading by the Board and approval by the Inspector of Municipalities and is the preferred method administratively in this instance.

To ensure optimization of interest and timing of long term debt, issuance of a temporary borrowing will be proposed if Ministerial approval is obtained and the AAP proves successful. 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 debt issuance under the loan authorization will be 15 years.

**CONCLUSION**

The CRD 2023 provisional financial plan sets out the capital expenditure of each service, including planned borrowings. Borrowing for the Solid Waste Disposal Service was identified as \$36 million for planned infrastructure and improvements. Bylaw No. 4515, "Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022", is presented now in preparation for future borrowing to enable the identified projects within the Service's five year (2023-2027) capital plan.

**RECOMMENDATION**

1. That Bylaw No. 4515, “Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022”, be introduced and read a first, second and third time; and
2. That Bylaw No. 4515 be referred to the Inspector of Municipalities for approval, and if received, that staff conduct an alternative approval process for the entire service area, as per section 345 of the *Local Government Act*, and, if successful, that Bylaw 4515 then be brought forward for adoption.

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, CPA, CMA, Chief Financial Officer
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(S)**

Appendix A: Bylaw No. 4515, Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4515

\*\*\*\*\*
A BYLAW TO AUTHORIZE THE BORROWING OF THIRTY SIX MILLION DOLLARS (\$36,000,000) FOR THE PURPOSE OF ACQUIRING, DESIGNING AND CONSTRUCTING SOLID WASTE FACILITIES AND SITE IMPROVEMENTS
\*\*\*\*\*

WHEREAS:

- A. By Bylaw 1903, "Solid Waste Disposal Local Service Establishment Bylaw No. 1, 1991", the Regional Board continued a service for solid waste disposal;
B. It is deemed desirable to provide solid waste management, waste reduction, recycling and waste disposal facilities hereunder described in accordance with the local service of Solid Waste Disposal;
C. The works shall include landfill facilities, roads and improvements at the Hartland Landfill site, construction of remote transfer stations, water supply facilities, composting facilities, watershed management, and all related ancillary works and equipment deemed necessary by the Board for landfill and operations, including but not limited to those works in the Solid Waste Management Plan and its amendments;
D. The estimated cost of the refuse disposal facilities and improvements including expenses incidental thereto to be funded from debt servicing, is the sum of Thirty Six Million (\$36,000,000) dollars, which is the amount of debt intended to be created by this bylaw;
E. Pursuant to section 407 of the Local Government Act, participating area approval is required for this borrowing and shall be obtained by alternative approval process for the entire service area under section 345 of the Local Government Act.
F. 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 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 solid waste facilities and equipment therein 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 Thirty-Six Million Dollars (\$36,000,000); 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 the design and construction of the landfill facilities, roads and improvements at the Hartland Landfill facilities and all related ancillary works and equipment deemed necessary by the Board for landfill and operations, including but not limited to those work in the Solid Waste Management Plan and its amendments.
- 2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is fifteen (15) years.
- 3. This Bylaw may be cited as "Solid Waste Disposal Loan Authorization Bylaw No. 1, 2022".

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 ALTERNATIVE APPROVAL PROCESS PER S. 345 OF THE <i>LOCAL GOVERNMENT ACT</i> THIS	th	day of	202__
ADOPTED THIS	th	day of	202__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

FILED WITH THE INSPECTOR OF MUNICIPALITIES THIS      <sup>th</sup>      day of      20\_\_



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**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

---

**SUBJECT**     **Bylaw Nos. 4526, 4527, and 4528: Updates to Water Supply, Bulk Water Fees and Charges and Water Distribution Bylaws**

**ISSUE SUMMARY**

To update the Capital Regional District (CRD) water supply and water distribution and bulk water fees and charges schedules for 2023.

**BACKGROUND**

On September 21, 2022, the Board approved the 2023 Provisional Financial Plan, inclusive of the commission approved budgets for:

- Regional Water Supply Service
- Saanich Peninsula Water Service
- Juan De Fuca Water Distribution Service

Each service recovers costs through fees and charges for the delivery of water supply. Annually and for the upcoming year, fee schedules are updated based on the approved financial plan. This report transmits the following amending bylaws as described:

- 1) Regional Water Supply Service: Bylaw No. 4526 to amend Bylaw No. 2570, "Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997" by deleting Schedule "A" in its entirety and substituting the attached Schedule "A", effective January 1, 2023.
- 2) Saanich Peninsula Water Service: Bylaw No. 4527 to amend Bylaw No. 376, being "Bulk Water Rates Bylaw, 1977" by deleting Schedule "A" in its entirety and substituting the attached Schedule "A", effective January 1, 2023.
- 3) Juan De Fuca Water Distribution Service: Bylaw No. 4528 to amend Bylaw No. 3889, "Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013" by deleting Schedule "C" in its entirety and substituting the attached Schedule "C", effective January 1, 2023.

The bylaws if approved establish the 2023 Fees and Charges for each of the water services listed above.

**ALTERNATIVES**

*Alternative 1*

1. That Bylaw No. 4526, "Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997, Amendment Bylaw No. 24, 2022", be introduced and read a first, second and third time; and



2. That Bylaw No. 4526 be adopted.
3. That Bylaw No. 4527, “Bulk Water Rates Bylaw, 1977, Amendment Bylaw No. 42, 2022”, be introduced and read a first, second and third time; and
4. That Bylaw No. 4527 be adopted.
5. That Bylaw No. 4528, “Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013, Amendment Bylaw No. 12, 2022”, be introduced and read a first, second and third time; and
6. That Bylaw No. 4528 be adopted.

#### *Alternative 2*

That the one or more proposed fees and charges amending bylaws be referred back to staff for additional information.

### **IMPLICATIONS**

#### *Financial Implications and Service Delivery Implications*

This bylaw is required to provide the necessary authority for these services to charge the updated fees and charges to customers receiving water supply, bulk water and water distribution. The proposed fees and charges are included in each bylaw for approval and are attached. The adjusted fees and charges have been recommended by the respective Commissions.

### **CONCLUSION**

On September 21, 2022, the Board approved the 2023 Provisional Financial Plan, inclusive of the commission approved budgets for the Regional Water Supply Service, the Juan De Fuca Water Distribution Service and the Saanich Peninsula Water Service. Amending bylaws No. 4526, 4527 and 4528 increase rates charged for water supply, bulk water and water distribution. Approval of these bylaws updates the rate schedules consistent with the 2023 Board approved financial plan and effective January 1, 2023.

### **RECOMMENDATION**

1. That Bylaw No. 4526, “Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997, Amendment Bylaw No. 24, 2022”, be introduced and read a first, second and third time; and
2. That Bylaw No. 4526 be adopted.
3. That Bylaw No. 4527, “Bulk Water Rates Bylaw, 1977, Amendment Bylaw No. 42, 2022”, be introduced and read a first, second and third time; and
4. That Bylaw No. 4527 be adopted.
5. That Bylaw No. 4528, “Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013, Amendment Bylaw No. 12, 2022”, be introduced and read a first, second and third time; and
6. That Bylaw No. 4528 be adopted.

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Ian Jesney, P. Eng., Acting General Manager, Integrated Water Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENT(S)**

Appendix A: Bylaw No. 4526, "Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997, Amendment Bylaw No. 24, 2022"

Appendix B: Bylaw No. 4527, "Bulk Water Rates Bylaw, 1977, Amendment Bylaw No. 42, 2022"

Appendix C: Bylaw No. 4528, "Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013, Amendment Bylaw No. 12, 2022"

**CAPITAL REGIONAL DISTRICT**

**BYLAW NO. 4526**

\*\*\*\*\*  
**A BYLAW TO AMEND BYLAW 2570, WATER SUPPLY LOCAL SERVICE AREA FEE  
AND CHARGE BYLAW No. 1, 1997  
(REGIONAL WATER SUPPLY)**  
\*\*\*\*\*

The Board of the Capital Regional District in open meeting assembled enacts as follows:

1. Bylaw No. 2570, "Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997" is amended as follows:
  - a) By deleting Schedule "A" in its entirety and substituting the attached Schedule "A", effective January 1, 2023.
2. This Bylaw may be cited for all purposes as the "Water Supply Local Service Area Fee and Charge Bylaw No. 1, 1997, Amendment Bylaw No. 24, 2022".

READ A FIRST TIME THIS	day of	202__
READ A SECOND TIME THIS	day of	202__
READ A THIRD TIME THIS	day of	202__
ADOPTED THIS	day of	202__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

**SCHEDULE "A"**

For each cubic metre of water supplied to the District of Oak Bay, the District of Saanich, the City of Victoria/Town of Esquimalt, the Juan de Fuca Water Distribution service, and the Saanich Peninsula Water Service:

- |                      |           |
|----------------------|-----------|
| 1. Bulk Water        | \$ 0.7698 |
| 2. Agriculture Water | \$ 0.2105 |

**CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4527**

\*\*\*\*\*

**A BYLAW TO AMEND BYLAW NO. 376, BULK WATER RATES  
BYLAW, 1977 (SAANICH PENINSULA WATER)**

\*\*\*\*\*

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

- 1. Bylaw No. 376, being "Bulk Water Rates Bylaw, 1977" is further amended as follows:
  - a) By deleting Schedule "A" in its entirety and substituting the attached Schedule "A".
- 2. This bylaw shall take effect January 1, 2023.
- 3. This bylaw may be cited as "Bulk Water Rates Bylaw, 1977, Amendment Bylaw No. 42, 2022".

READ A FIRST TIME THIS	day of	202__
READ A SECOND TIME THIS	day of	202__
READ A THIRD TIME THIS	day of	202__
ADOPTED THIS	day of	202__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

**SCHEDULE "A"**

For each cubic metre of water supplied to the District of Central Saanich, the District of North Saanich and the Town of Sidney, the rate of \$1.1439 is effective January 1, 2023.

For each cubic metre of water supplied to the Department of Agriculture Research Station, located at 8801 East Saanich Road, Sidney, BC, the rate of \$1.1791 is effective January 1, 2023.

**CAPITAL REGIONAL DISTRICT**

**BYLAW NO. 4528**

\*\*\*\*\*  
**A BYLAW TO AMEND BYLAW 3889 TO UPDATE WATER DISTRIBUTION LOCAL SERVICE  
 CONDITIONS, FEES AND CHARGES BYLAW NO. 1, 2013  
 (JUAN DE FUCA WATER DISTRIBUTION)**  
 \*\*\*\*\*

The Board of the Capital Regional District in open meeting assembled enacts as follows:

1. Bylaw No. 3889, "Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013" is amended as follows:
  - a) By deleting Schedule C in its entirety and substituting the attached Schedule C, effective January 1, 2023.
2. This Bylaw may be cited for all purposes as the "Water Distribution Local Service Conditions, Fees and Charges Bylaw No. 1, 2013, Amendment Bylaw No. 12, 2022".

READ A FIRST TIME THIS	day of	202__
READ A SECOND TIME THIS	day of	202__
READ A THIRD TIME THIS	day of	202__
ADOPTED THIS	day of	202__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

### Schedule C - Water Rates

- 1. Effective:** The rates set out in section 3 of this Schedule are the Water Charges for invoices received from the CRD for water consumption in the applicable areas described in section 2 of this Schedule, effective 1 January 2023.
- 2. Applicable:** The rates are applicable to water supplied within the Town of View Royal, the City of Langford, the City of Colwood, the District of Metchosin, the District of Highlands, the District of Sooke, the Juan de Fuca Electoral Area, the Esquimalt First Nation, the Songhees First Nation, the Tsouke First Nation, and the Beecher Bay First Nation.
- 3. Water Rates:** The applicable Water Charges are set out below:

  - (a) Subject to sections 3(b) and (c) of this Schedule, the Water Charge for all water supplied by the CRD shall be \$2.5466 per cubic metre or part thereof.
  - (b) The Water Charge for which water has been supplied by the CRD to a Community Allotment Garden shall be \$0.2105 per cubic metre or part thereof.
  - (c) The Water Charge for which water has been supplied by the CRD to a Wild Animal Rehabilitation Facility shall be \$0.7698 per cubic metre or part thereof.





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## REPORT TO CAPITAL REGIONAL DISTRICT BOARD MEETING OF WEDNESDAY, DECEMBER 14, 2022

---

### **SUBJECT** Parcel Tax Roll Review Panel

### **ISSUE SUMMARY**

To meet requirements of the *Community Charter* in order to requisition parcel tax revenues by establishing annually a Parcel Tax Roll Review Panel, which includes:

- appointing three Directors and one Alternate to review, confirm and authenticate the Parcel Tax Roll, and
- establishing the time and place for the sitting of the panel.

### **BACKGROUND**

The Capital Regional District (CRD) requisitions revenues by parcel tax in 26 service areas located throughout the Juan de Fuca, Salt Spring Island and Southern Gulf Island electoral areas.

Before a parcel tax can be levied, the Parcel Tax Roll Review Panel must consider any complaints respecting the parcel tax roll and must authenticate the roll in accordance with Sections 204 and 205 of the *Community Charter*.

A person may make a complaint to the Parcel Tax Roll Review Panel on one or more of the following grounds:

- a) an error or omission respecting a name or address on the parcel tax roll;
- b) an error or omission respecting the inclusion of a parcel;
- c) an error or omission respecting the taxable area or the taxable frontage of a parcel; or
- d) an exemption that has been improperly allowed or disallowed.

The 2023 Parcel Tax Roll Review is scheduled for Wednesday 8 March 2023 at 12:00 pm, the same day as the regular March 2023 CRD Board meeting.

### **ALTERNATIVES**

#### *Alternative 1*

1. That the Parcel Tax Roll Review Panel meeting be held on Wednesday, 8 March 2023, at 12:00 pm in Room 652 of the Capital Regional District offices, 625 Fisgard Street, Victoria, BC; and
2. That the following individuals be appointed to the Parcel Tax Roll Review Panel for the year 2023:
  - Colin Plant, CRD Board Chair
  - Al Wickheim, Director, Juan de Fuca Electoral Area
  - Paul Brent, Director, Southern Gulf Islands Electoral Area
  - Gary Holman, Director, Salt Spring Island Electoral Area

#### *Alternative 2*

That the Board appoint alternate directors to the Parcel Tax Roll Review Panel.

**IMPLICATIONS**

*Financial Implications*

In 2022, parcel tax revenues comprised \$2.9 million of the CRD’s requisition to the Rural Property Taxation Branch. In 2023, 26 CRD service areas will requisition revenues by parcel tax. The amount of the requisition will be known when the participating service area budgets are finalized in March 2023.

**CONCLUSION**

This staff report proposing CRD Board appointments to the Parcel Tax Roll Review Panel and setting the proposed Parcel Tax meeting date is brought forward annually for consideration. The Community Charter requires the CRD to appoint a Parcel Tax Roll Review Panel to adjudicate any complaints and authenticate the Parcel Tax Roll for taxation purposes.

**RECOMMENDATION**

1. That the Parcel Tax Roll Review Panel meeting be held on Wednesday, 8 March 2023, at 12:00 pm in Room 652 of the Capital Regional District offices, 625 Fisgard Street, Victoria, BC; and
2. That the following individuals be appointed to the Parcel Tax Roll Review Panel for the year 2023:  
Colin Plant, CRD Board Chair  
Al Wickheim, Director, Juan de Fuca Electoral Area  
Paul Brent, Director, Southern Gulf Islands Electoral Area  
Gary Holman, Director, Salt Spring Island Electoral Area

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**REPORT TO CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**     **Management of Biosolids – Update**

**ISSUE SUMMARY**

To update the Capital Regional District (CRD) Board on the current status of biosolids management.

**BACKGROUND**

The construction and commissioning of the Core Area Wastewater Treatment Project adds new operational tasks for the wastewater service. Residual solids from the Mcloughlin Point Wastewater Treatment Plant are now processed at the Residuals Treatment Facility (RTF), located at Hartland landfill, into a dried pelletized Class A biosolid product that must be managed in accordance with provincial regulatory requirements. The RTF produces approximately 10 tonnes of dried product per day.

The CRD has an approved short-term (2021-2025) Biosolids Beneficial Use Strategy (Definitive Plan) that involves the transport of biosolids to LaFarge cement manufacturing facility (LaFarge) on the mainland where it is used as an alternative fuel in the plant's combustion processes. This was the only option identified in the initial request for proposals. The CRD also has an approved Contingency Plan to manage biosolids when LaFarge has planned or unplanned shutdowns and cannot receive the biosolids. That plan involves the production of Biosolids Growing Medium (BGM) by adding sand and wood chips to the biosolids, which are then beneficially used in cover materials at Hartland Landfill.

A condition of the provincial approval of the Definitive Plan is the development of a long-term biosolids management plan by June 2024. Another requirement is the broad consultation on long-term beneficial use options (inclusive of land application) with residents, local governments and Indigenous communities.

The original contract with LaFarge anticipated shutdown periods of approximately 35 days per year. For context, Lafarge has been unable to receive biosolids (through planned and unplanned shutdowns) for approximately 10 months in 2022. As a consequence, the CRD had to manage approximately 2,400 tonnes of biosolids at Hartland Landfill, 600 tonnes of which will be used as BGM under the contingency plan and the remainder to be landfilled. Eighty of the 600 tonnes have been applied with the remaining volume to be placed in mid-2023 to minimize erosion during winter months with anticipated significant wet weather. 2022 biosolids contingency management consumed two years of the five-year contingency plan for beneficial use at Hartland Landfill. The contingency plan must also be aligned with landfill operations; receiving, storing and producing future biosolids needs to consider space constraints for temporary storage and application of BGM only when the final cover areas are ready. This constrains how much material can be used for BGM production in a given year.

### **OPERATIONAL UPDATE**

Since commissioning, there have been a range of issues with the production, transport and beneficial use of the biosolids that have challenged the contingency planning for biosolids management. Without any other short-term options, the landfill has accommodated significant volumes of non-Class A and Class A biosolids. Production and placement of BGM, in accordance with the contingency plan, is significantly more expensive than other potential beneficial use options. Disposal of biosolids in the landfill, while less expensive than BGM production, requires additional materials handling, incurs tipping fees and consumes valuable landfill air space. Earlier this year, staff determined that the volume of biosolids received at the landfill had exceeded the landfill's capacity to beneficially use biosolids and, from that point, biosolids that could not be transported to Lafarge were disposed of in the landfill. This disposal method is inconsistent with provincial regulatory requirements, insofar as the biosolids are not beneficially utilized. However, there are no other options while Lafarge is unable to receive biosolids and the landfill's BGM capacity is exceeded. CRD staff continue to brief the Province on these operational and logistical challenges, as well as our efforts to develop alternative options in a long-term management plan. CRD staff also report out publicly on these operations through monthly updates on the CRD website (Appendix A).

The CRD has retained the services of a technical advisor to support the development of long-term biosolids beneficial use options. These options include evaluation of advanced thermal processing options (gasification/pyrolysis) and co-combustion options, as well as any other potential uses. Work is underway for pilot studies with several existing thermal facilities to ensure gasification and pyrolysis represent viable long-term options for biosolids management. Staff intend to bring forward a detailed staff report in early 2023 with results of the pilot studies and progress toward the long-term plan. Another task for the consultant is the investigation of any other short-term options that have arisen since the Definitive Plan was developed. That information also will be included in the upcoming staff report.

Hartland Landfill operational controls and best practices remain in place to ensure proper management of biosolids under all scenarios, and no unacceptable risks to human health or the environment are anticipated. Hartland Landfill also carries out an environmental monitoring program, in accordance with its Operational Certificate, that ensures ground and surface water meet provincial standards and guidelines around the perimeter of the site.

### **CONCLUSION**

The Core Area wastewater service now produces residual biosolids that must be managed in accordance with provincial regulatory requirements. Since Commissioning of the treatment plant, there have been operational and logistical challenges in the production, transport and beneficial use of biosolids that have resulted in over-reliance on the contingency plans, as well as actions outside of regulatory approvals. Due to extended maintenance shut-down periods at Lafarge, the CRD received much larger than expected volumes of biosolids at Hartland Landfill, and the capacity to beneficially use biosolids was exceeded in Q1 2022. For the remainder of the year, the majority of biosolids have been deposited in the landfill. Staff are evaluating options for the management of biosolids in accordance with provincial requirements and will bring forward a staff report with details on biosolids planning in early 2023.

**RECOMMENDATION**

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

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

**ATTACHMENT**

Appendix A: Wastewater Treatment – Biosolids Production Report (October 2022)

# Wastewater Treatment

## BIOSOLIDS PRODUCTION REPORT

Capital Regional District | October 2022

### Summary of Biosolids Production & End Use

#### 1. Amount of Biosolids Produced

Due to equipment failure at Lafarge, no Class A Biosolids produced at the Residuals Treatment Facility (RTF) were provided to Lafarge per the Definitive Plan. A total of 202 tonnes (t) were used as an interim landfill cover layer at Hartland landfill.

Information on the CRD's biosolids beneficial use strategy can be found [here](#). The Definitive Plan can be found [here](#) and the Contingency Plan can be found [here](#).

Biosolids production and end use data for October 2022 is as follows:

Biosolids Type	Produced		End Use			
			Definitive Plan <sup>b</sup>	Contingency Plan: BGM <sup>c</sup>	Contingency Plan: Biocover <sup>c</sup>	Hartland Landfill <sup>d</sup>
Dried <sup>a</sup> Class A	This month	202 t	0 t	0 t	0 t	202 t
	Year to date	2,600 t	470 t	595 t	0 t	1,535 t
Non-Class A	This month	0 t	X			0 t
	Year to date	0 t				0 t

<sup>a</sup> Greater than 90% solids

<sup>b</sup> Used as an alternative fuel at the Lafarge cement manufacturing facility in Richmond, BC

<sup>c</sup> Placed within the leachate containment areas of Hartland Landfill

<sup>d</sup> Class A Biosolids are placed within leachate containment areas as a layer of interim cover maximizing potential for fugitive gas mitigation, and Non-Class A Biosolids are landfilled as a controlled waste

#### 2. Compliance Monitoring

The CRD's contractor, Hartland Resource Management Group (HRMG), tests biosolids produced at the RTF to ensure the biosolids are Class A, as defined by the British Columbia Organic Matter Recycling Regulation (OMRR). Testing is performed by CARO Analytical Services. OMRR specifies that for Class A biosolids, metals concentrations must not exceed "those specified in Trade Memorandum T-4-93 (September 1997), Standards for Metals in

# Wastewater Treatment

## BIOSOLIDS PRODUCTION REPORT

Capital Regional District | October 2022

Fertilizers and Supplements, as amended from time to time.” The latest version of OMRR can be found [here](#) and the latest version of Trade Memorandum T-4-93 can be found [here](#). In June 2022, The Ministry of Environment and Climate Change Strategy announced the intention to amend OMRR, including new standards for Class A biosolids. Regulatory amendments are targeted for 2023. The proposed OMRR Standards have been included in the table for reference.

Class A biosolids compliance data for October 2022 is as follows:

Substance	OMRR Limit <sup>a</sup> (mg/kg dry weight)	Proposed OMRR Standard <sup>b</sup> (mg/kg dry weight)	Biosolids (mg/kg dry weight)		
			Average	Minimum	Maximum
<b>Metals</b>					
Arsenic (As)	666	41	1.87	1.81	1.98
Cadmium (Cd)	177	15	1.50	1.45	1.56
Chromium (Cr)	9,333	1000	34.9	33.6	36.4
Cobalt (Co)	1,333	150	2.50	2.39	2.62
Copper (Cu)	6,666	1500	661	600	696
Mercury (Hg)	44	4	0.560	0.496	0.677
Molybdenum (Mo)	177	20	8.13	7.75	8.64
Nickel (Ni)	1,600	180	16.4	15.7	17.5
Lead (Pb)	4,444	300	30.0	28.3	33.8
Selenium (Se)	124	25	4.53	4.42	4.59
Thallium (Tl)	44	ns	<0.10	<0.10	<0.10
Vanadium (V)	5,777	ns	11.5	11.0	11.9
Zinc (Zn)	16,444	1820	1003	913	1070
<b>Fecal Coliforms</b>					
MPN	1,000	1,000	<3.0	<3.0	<3.0

<sup>a</sup> For metals, the maximum allowable concentrations for Class A biosolids are calculated based on a 500 kg/ha annual application rate; for fecal coliforms, the maximum allowable concentration is a fixed value

<sup>b</sup> Proposed OMRR standards are tabled for reference - standards subject to change once final OMRR amendment is published.

ns – no standard



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**REPORT TO ELECTORAL AREAS COMMITTEE  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

---

**SUBJECT     Saturna Island Fire Protection Society (SIFPS) – Medical  
Patient Transportation**

**ISSUE SUMMARY**

Consideration of Bylaw No. 4534, “Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993, Amendment Bylaw No. 3, 2022”, to enable a contribution to Saturna Island Fire Protection Society for medical patient transportation.

**BACKGROUND**

On October 12, 2022, in response to a Notice of Motion, the Capital Regional District (CRD) Board passed the following resolution:

*That staff be directed to report back with amendments to Bylaw No. 2165, “Saturna Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No.1, 1993” to include medical patient transportation.*

On November 21, 2022, consistent with the direction, the Saturna Island Fire and Protection Society (SIFPS) Board made a similar motion (Appendix A).

In 1993, Bylaw No. 2165, “Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993”, established a local contribution service for the purpose of funding the (SIFPS) to provide fire prevention/suppression and emergency response services on Saturna Island. A bylaw amendment is required for the CRD to contribute to SIFPS providing medical patient transportation as part of its emergency response service. Amending Bylaw No. 4534 is included as Appendix B. An unofficial consolidation showing changes is attached as Appendix C.

Within the Southern Gulf Islands, Mayne, Galiano North Pender, South Pender, and Salt Spring Islands all have Provincial Ambulance stations (BCEHS) located on island. On Saturna Island, there is no Provincial ambulance station; instead, residents have relied on Saturna Island Rescue, made up of Emergency Medical Responder (EMR) licensed volunteers, to provide emergency medical transport. These volunteers operate 24 hours a day, 7 days a week.

The scope involves transporting patients from their home or elsewhere on-island, to a helicopter pad, ferry, or government dock, where they await pickup by Provincial Ambulance attendants. Volunteers receive about 50 to 60 dispatch calls each year. Call volumes are growing, with more than 70 forecasted in 2022. With a depleting volunteer pool, they are in need of additional funding to support recruitment training and retention of new volunteers.

A proposed delivery model would enable financial support from the CRD, to supplement the financial support that is provided by the SIFPS, BCEHS and Island Health for medical patient transportation. This bylaw amendment is necessary to allow SIFPS to receive the CRD funding. Without amending Bylaw No. 2165, the SIFPS cannot use its CRD funding to support medical patient transportation. This will not affect the maximum requisition of the current fire service or



the delivery of fire protection by SIFPS.

### **ALTERNATIVES**

#### *Alternative 1:*

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

1. That Bylaw No. 4534, "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993, Amendment Bylaw No. 3, 2022", be introduced and read a first, second, and third time;
2. That elector approval be obtained by the Electoral Area director consenting on behalf; and
3. That Bylaw No. 4534 be referred to the Inspector of Municipalities for approval.

#### *Alternative 2:*

That the Electoral Areas Committee request staff report back with additional information.

### **IMPLICATIONS**

#### *Social Implications*

The additional funding enabled through the proposed bylaw amendments will allow the preservation and sustainability of the medical response services on Saturna at similar levels to those provided by BCEHS on neighbouring islands. Without an amendment, the Saturna Island Rescue operating model cannot be sustained and A person in need of medical transportation on Saturna Island may not be provided timely transportation to a Provincial Ambulance attendant. This request supports previous CRD Board priorities and the corporate plan priorities for effective response to emergencies.

#### *Financial Implications*

This additional service will require the annual requisition to be increased from \$177,796 in 2022, to \$256,922 in 2023, however this change in bylaw authority will not have an impact on the maximum requisition permitted under Bylaw No. 2165. The maximum requisition is \$311,463 based on 2022 assessment data.

#### *Service Delivery and Risk Implications*

The SIFPS is an independent non-profit that operates the fire suppression and emergency response service on-island. CRD does not directly provide this fire service, but contributes towards its costs under Bylaw No. 2165, as regulated by a contribution agreement which may be amended to reflect the medical patient transportation service level change.

As such, CRD will not be a party to the BCEHS patient transportation contract. The contract will be between SIFPS, BCEHS and Island Health. SIFPS will be required to carry appropriate insurance for this work and to ensure it complies not only with its obligations under the fire

contribution agreement with CRD, but also the agreements for transportation with BCEHS and Island Health.

### *Governance Implications*

In order to amend an establishing bylaw, participating area approval and approval from the Inspector of Municipalities is required. The Electoral Area Director can consent on behalf of electors to this change.

For Inspector approval, the Province reviews the bylaw for compliance with applicable local government laws, and looks at any tax implications that may impact the electors. Approval takes at least eight weeks, with most requests being processed within 12 weeks.

### **CONCLUSION**

The proposed Bylaw No. 4534 will amend the existing Bylaw No. 2165 and enable the Saturna Island Fire Protection Society to receive CRD funding to provide medical patient transportation. This amendment will allow the preservation and sustainability of the medical response services on Saturna Island at levels that are similar to those provided by BCEHS on neighbouring islands.

### **RECOMMENDATION**

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

1. That Bylaw No. 4534, “Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993, Amendment Bylaw No. 3, 2022”, be introduced and read a first, second, and third time;
2. That elector approval be obtained by the Electoral Area director consenting on behalf; and
3. That Bylaw No. 4534 be referred to the Inspector of Municipalities for approval.

Submitted by:	Stephen Henderson, Senior Manager, Real Estate and Southern Gulf Islands
Concurrence:	Shawn Carby, Senior Manager Protective Services
Concurrence:	Steve Carey, B.Sc., J.D., Senior Manager, Legal Services & Risk Management
Concurrence	Kevin Lorette, P. Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

### **ATTACHMENT(S)**

Appendix A: Saturna Island Fire Protection Society request letter

Appendix B: Bylaw No. 4534, “Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993”

Appendix C: Bylaw No. 2165 unofficial redlined consolidation

## APPENDIX A

**From:** [REDACTED]  
**To:** [REDACTED]  
**Cc:** [REDACTED]  
**Subject:** SIFPS endorsement of Bylaw change  
**Date:** Tuesday, November 22, 2022 8:05:58 PM

---

**CAUTION:** This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

Hi Stephen. As discussed during our telephone meeting November 10th, here is the motion passed by our Board at last evening's SIFPS meeting. Please let me know if you require anything further.

Thanks again!

Ron Monk  
Vice President,  
SIFPS

### **SATURNA ISLAND FIRE PROTECTION SOCIETY**

#### **Board of Directors Meeting**

**Monday, November 21<sup>st</sup> 2022**

**PRESENT:** Ron Monk, Tony Marchigiano, Stephen Hardy, Keith Preston, Tex McLeod, John Wiznuk, Vanessa Verbitsky (SIR Chief), Ian Gaines, Peter Stolting, Melanie Watson, Peter Clark (Fire Chief)

**7. Motion to amend CRD Bylaw 2165 to allow medical transport**

**Moved** by Tex McLeod that the Directors of the SIFPS Board support the amendment of CRD bylaw 2165 to allow for medical transport.

2<sup>nd</sup>- Stephen Hardy, **CARRIED UNANIMOUSLY**

**APPENDIX B**

**CAPITAL REGIONAL DISTRICT BYLAW NO. 4534**

\*\*\*\*\*

**A BYLAW TO AMEND THE CONTRIBUTION TO THE SATURNA ISLAND FIRE PROTECTION SOCIETY TO FACILITATE PATIENT TRANSPORTATION (BYLAW NO. 2165)**

\*\*\*\*\*

**WHEREAS:**

- A. By Bylaw No. 2165, "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No.1, 1993", the Regional Board established a contribution towards the cost of fire protection and emergency response services provided by others on Saturna Island In the Southern Gulf Islands Electoral Area; and
- B. The Saturna Island community is in need of emergency patient transportation services, and the current recipient of the contribution can provide these services but requires use of the CRD contribution to do so reliably;
- C. Participating area approval shall be obtained by electoral area director consenting on behalf;
- D. The Board wishes to amend Bylaw No. 2165 to enable the contribution from CRD to be utilize for to provide medical patient transportation as part of its response services;

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

- 1. Bylaw No. 2165, "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No.1, 1993", is hereby amended as follows:
  - (a) In the preamble, at B, replacing the words "Electoral Area "G" (Outer Gulf Islands)" with the words "the Southern Gulf Islands Electoral Area" Replacing the words "Electoral Area G (Outer Gulf Islands)" whenever it appears with the words "Southern Gulf Islands Electoral Area";
  - (b) In section 1, inserting the words ", and medical patient transportation" after the words "emergency response services";
  - (c) In section 1, replacing the words "Electoral Area "G" (Outer Gulf Islands)" with the words "in the Southern Gulf Islands Electoral Area";
  - (d) In section 3, replacing the words "Electoral Area "G"" with the words "the Southern Gulf Islands Electoral Area";
  - (e) Replacing section 4 with the following:
    - 4. The annual cost of providing the Service, net of grants and other revenue, shall be recovered Section 378 of the *Local Government Act* by one or more of the following methods:
      - (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.
- (f) By removing section 7 and its content and renumbering section 8 as section 7;
- (g) By replacing Schedule "A" with the Schedule "A" attached to this bylaw and deleting Schedule "B" in its entirety";
- (h) In section 2, replacing the words "highwater mark." With the words "highwater mark, as shown in Schedule "A".";
- (i) This bylaw may be cited for all purposes as "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No.1, 1993, Amendment Bylaw No. 3, 2022".

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__
APPROVED BY THE ELECTORAL AREA DIRECTOR THIS	th	day of	20__
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	th	day of	20__
ADOPTED THIS	th	day of	20__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

Schedule "A"



**APPENDIX C:**

CAPITAL REGIONAL DISTRICT

BY-LAW NO. 2165

-----  
A BY-LAW TO ESTABLISH A LOCAL SERVICE ON SATURNA ISLAND TO PROVIDE A CONTRIBUTION TO THE COST OF FIRE PROTECTION AND EMERGENCY RESPONSE SERVICES  
-----

WHEREAS:

- A. A Regional District may, by bylaw, establish a local service under Section 788 (1)(j) of the Municipal Act to provide contributions to the costs of a service referred to in paragraph (g), interalia, of Section 788, that is provided within the service area by another person or association;
- B. The Regional Board of the Capital Regional District wishes to establish a local service for the purpose of contributing to the cost of fire protection and emergency response services provided by others on Saturna Island in the Southern Gulf Islands Electoral Area, referred to as the "Service Area"; and
- C. The Regional Board has obtained the assent of the electors under Section 796 of the Municipal Act.

NOW, THEREFORE, the Capital Regional Board, in open meeting assembled, ENACTS AS FOLLOWS:

- 1. The Capital Regional District hereby establishes a Local Service for the purpose of contributing to the costs incurred by the Saturna Island Fire Protection Society of providing fire prevention and suppression and emergency response services, and medical patient transportation on Saturna Island in the Southern Gulf Islands Electoral Area.
- 2. The boundaries of the Service Area known as "Saturna Island Fire Protection and Emergency Response Contribution Local Service Area" are described as follows:

All those lands known as Saturna Island located in the Cowichan Land District, together with the foreshore and land covered by water that lies between a line drawn two hundred feet (200') perpendicular distant and parallel to the highwater mark on the shore of Saturna Island and the said highwater mark, as shown in Schedule "A".
- 3. The part of the Southern Gulf Islands Electoral Area described in Section 2 is the sole participating area for the Local Service.
- 4. The annual cost of providing the Service, net of grants and other revenue, shall be recovered under Section 378 of the Local Government Act by one or more of the following methods:

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Deleted: (Outer Gulf Islands)

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(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.

5. No apportionment of costs is necessary because there is only one participating area.

6. The maximum annual amount that may be requisitioned for the cost of the Local Services will be the greater of:

(a) Seventy Three Thousand and Five Hundred Dollars (\$73,500.00); or

(b) an amount equal to the amount that could be raised by a property value tax rate of \$0.85 per ONE THOUSAND (\$1,000.00) DOLLARS which, when applied to the net taxable value of land and improvements within the Local Service Area, will yield the maximum amount that may be requisitioned under Sections 816(1)(a) and (b) for the local service."

**(Bylaw 2734)**

**Deleted:** The annual cost of the Local Service shall be recovered by a requisition of monies under Section 804(l)(a) of the Municipal Act to be collected by a property value tax on land and improvements in the participating area.¶

7. This Bylaw may be cited for all purposes as the "Saturna Island Fire Protection and Emergency Response Local Service Contribution Establishment Bylaw No. 1, 1993".

**Deleted:** 7.

**Deleted:** The estimated property value tax rate is calculated as shown on Schedule "A" to this Bylaw.

**Deleted:** 8

READ A FIRST TIME THIS 8th day of September 1993

READ A SECOND TIME THIS 8th day of September 1993

READ A THIRD TIME THIS 8th day of September 1993

APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS 8th day of October 1993

ASSENT OF THE ELECTORS BY REFERENDUM obtained 20th day of November 1993

RECONSIDERED AND FINALLY ADOPTED THIS 24th day of November 1993

FILED WITH THE INSPECTOR OF MUNICIPALITIES THIS 29th day of November 1993

Signed by  
Chairperson

Signed by  
Secretary

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SCHEDULE "A" TO BYLAW NO. 2165

TAXATION IMPACT

The estimated taxation impact of providing a financial contribution for fire protection and emergency response services of ~~THIRTY SIX THOUSAND (\$36,000.00) DOLLARS~~ would be as follows:

~~B.C. Assessment Value for 1993~~

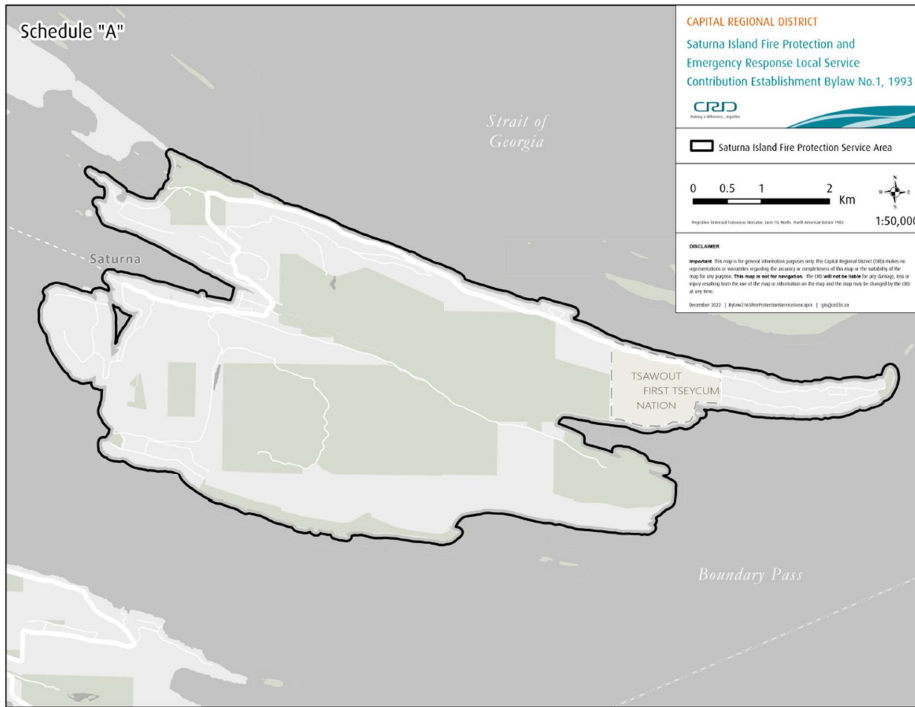
~~Actual \$49,918,350. ————— Converted \$5,289,758.~~

~~Impact on a typical improved residential property assessed for taxation at \$100,000.00 would be a rate of .6806 per \$1,000.00 of actual assessment or \$68.06.~~

SCHEDULE "A" TO BYLAW NO. 2165  
Map of Service Area

[[[This 2022 Version of the Map represents the same area with current GIS data ]]]

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**REPORT TO ELECTORAL AREAS COMMITTEE  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

---

**SUBJECT**     Salt Spring Island Local Community Commission – Implementation

**ISSUE SUMMARY**

To provide information on the implementation of the Salt Spring Island Local Community Commission.

**BACKGROUND**

On October 15, 2022, a majority of Salt Spring Island electors assented by referendum to the creation of a Local Community Commission (LCC), to be delegated certain responsibilities for a variety of Salt Spring Island local services. A local community commission is a body made up of elected, not appointed, individuals as well as the Electoral Area Director, with responsibility as delegated to it by the regional board.

The SSI LCC is detailed in Bylaw No. 4507, “Salt Spring Island Local Community Commission Bylaw No. 1”, and the proposed scope of delegated authority in Bylaw No. 4508, “Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022”; the draft Bylaws were attached to the July 13, 2022 Electoral Areas Committee report - Appendix C. The purpose of the SSI LCC is to broaden SSI elected oversight and administration of SSI local services, making decision-making regarding these services more locally transparent and reflective of the broad public interest, and to consolidate service delivery oversight.

Bylaw No. 4507 received Provincial approval on August 12, 2022. After adoption, a local election for Salt Spring Island will be scheduled, with a tentative election date of May 27, 2023, with an anticipated first meeting of the LCC with quorum in mid-June, 2023. The new local elected officials will serve until the general election date in 2026.

Prior to the local election date, certain Salt Spring Island commissions will be dissolved, with final reports and transition materials provided to the incoming LCC. Changes will be necessary to various commission and delegation bylaws to complete the transition.

**ALTERNATIVES**

*Alternative 1*

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

1. That Bylaw No. 4507, “Salt Spring Island Local Community Commission Bylaw No. 1”, be adopted;
2. That staff proceed with the planning and establishment of a local community commission election with a target date of May 27, 2023, and associated bylaw amendments to dissolve certain commissions which will be assumed by the Salt Spring Island Local Community Commission.

*Alternative 2*

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

## **IMPLICATIONS**

### *Transition Plan*

The services and commissions currently to be assumed by the LCC are set out in Appendix B. Minor changes are also anticipated to Bylaw No. 4186, “Capital Regional District Delegation Bylaw No. 1, 2017”, relating to grants-in-aid; and Bylaw No. 1465, “Animal Regulation and Impounding By-law No. 1, 1986”, to clarify livestock injury claims over \$250 are referred to the LCC. Most commissions will be dissolved as of the date of the first LCC meeting with quorum.

### *Financial Implications*

All costs of the election and administration of the LCC are costs of Salt Spring Island, including Commissioner remuneration. It is anticipated that other corporate resources may be drawn upon in the early days of the establishment of the LCC. If a heightened service level is required, there may be additional financial implications and staffing requests.

### *Intergovernmental Implications*

While the LCC replaces a number of different commissions and will allow for on-island service priority setting, it does not have the fulsome decision making authority of the regional Board relating to bylaws; setting fees and charges; and making decisions regarding staffing.

It also does not have jurisdictional authority over land use matters, which are the realm of the Islands Trust, nor does it have authority to direct bylaw or regulatory enforcement over matters currently dealt with regionally such as nuisance, building inspection, and animal control. Its role will be to set strategic priorities for the services and make recommendations on budgets and long-term goals. Day to day operational decisions, service delivery, and purchasing will remain with CRD staff and designated volunteers per the standard policies and bylaws of the regional district.

### *Social & Service Delivery Implications*

It is anticipated that an LCC will lead to more engagement in on-island matters by residents, due to the larger portion of elected rather than appointed officials.

No major service interruptions are anticipated. However, it may take some time for the LCC to fully learn and understand the scope of all the services it oversees. Once an LCC is established, it is expected there will be a slight delay in reviewing and issuing SSI grants-in-aid, as it is not anticipated the LCC will be able to respond as quickly as the Electoral Area Director acting alone.

## **CONCLUSION**

The establishment of the Salt Spring Island Local Community Commission is ongoing. A local election is anticipated in May 2023 with a quorum of newly elected commissioners and the Electoral Area Director holding the first meeting of the SSI LCC in June 2023.

**RECOMMENDATION**

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

1. That Bylaw No. 4507, “Salt Spring Island Local Community Commission Bylaw No. 1”, be adopted; and
2. That staff proceed with the planning and establishment of a local community commission election with a target date of May 27, 2023, and associated bylaw amendments to dissolve certain commissions which will be assumed by the Salt Spring Island Local Community Commission.

Submitted by:	Steven Carey, J.D., Senior Manager, Legal Services & Risk Management
Concurrence:	Karla Campbell, MBA, BPA, Senior Manager, Salt Spring Island Electoral Area
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENT(S)**

- Appendix A: Services assumed by LCC  
Appendix B: Bylaw No. 4507, “Salt Spring Island Local Community Commission Bylaw No. 1”  
Appendix C: EAC Staff Report, July 13, 2022, Bylaws 4507 and 4508: Establishment of Local Community Commission for Salt Spring Island

## APPENDIX A

Service Authority	Current Commission	Current Commission Delegation	LCC Delegation
<b>Economic Development</b> Bylaw No. 1824, "Economic Development Commission Establishing Bylaw No. 1, 1990"	SSI Economic Development and Sustainability Commission  Bylaw No. 3727, Salt Spring Island Community Economic Sustainability Commission Bylaw, 2010	Advisory	Administrative
<b>Liquid Waste</b> Bylaw No. 2118, "Salt Spring Island Liquid Waste Disposal Additional Local Service Establishment Bylaw No. 1, 1993"	SSI Liquid Waste Disposal Local Service Commission  Bylaw No. 3693, "Salt Spring Island Water, Sewer and Liquid Waste Disposal Commission Bylaw No. 1, 2010"	Administrative	Administrative
<b>Parks and Recreation</b> Bylaw No. 4149, "Salt Spring Island Community Parks Services Conversion Bylaw No. 1, 2017"  Bylaw No. 4151, "Salt Spring Island Community Recreation Services Conversion Bylaw No. 1, 2017"  Bylaw No. 3206, "Salt Spring Indoor Swimming Pool Facility Service Establishment Bylaw No. 1, 2004";  Bylaw No. 2422, "Salt Spring Island Parks and Recreation Facilities Local Service Establishment Bylaw No. 1, 1996"  Bylaw No. 2730, "Small Craft Harbour Facilities (Salt Spring Island) Local Service Establishment Bylaw No. 1, 1999";	Parks and Recreation Commission  Bylaw No. 3763, "Juan de Fuca and Salt Spring Island Parks and Recreation Advisory Commissions Bylaw No. 1"	Advisory	Administrative
<b>Transit and Transportation</b> Bylaw No. 3438, "Salt Spring Island Community Transit and Transportation Service Establishment Bylaw No. 1, 2007"	Transportation Commission  Bylaw No. 3450, "Salt Spring Island Transportation Commission Bylaw No.1, 2007"	Advisory	Administrative
<b>Street Lighting</b> Bylaw No. 3746, "Salt Spring Island Street Lighting Service Establishment Bylaw No. 1, 2011"	None	None	Administrative
<b>Grants in Aid</b> SLP Division XIX, OIC 1013/1977	None	EA director must consent in writing to award.	LCC will decide who to provide grants to.  EA director must still consent.
<b>Livestock Injury by Dogs</b> Bylaw No. 4418, "Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021"	None	Staff under \$250, Board over \$250	Staff under \$250, LCC over \$250
<b>Arts Contribution</b> Bylaw No. 3116, "Salt Spring Island Arts Contribution Service Establishing Bylaw No. 1, 2003";	None	None	Advisory
<b>Salt Spring Island Public Library</b> Bylaw No. 2725, "Salt Spring Island Public Library Local Service Area Establishment Bylaw No. 1, 1999";	None	None	Advisory
<b>Salt Spring Island Search and Rescue</b> Bylaw No. 3494, "Salt Spring Island Search and Rescue Service Establishment Bylaw, 2007"	None	None	Advisory

**CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4507**

\*\*\*\*\*

**A BYLAW TO ESTABLISH A LOCAL COMMUNITY COMMISSION FOR  
SALT SPRING ISLAND**

\*\*\*\*\*

**WHEREAS:**

- A. Salt Spring Island Electoral Area has a number of local, sub-regional, and island-wide services;
- B. Under the *Local Government Act*, RSBC 2015 c 1, a regional district may establish, by bylaw, one or more local communities to be administered by local community commission, provided the electors in the area of the local community assent to the creation of the commission;
- C. The Capital Regional District Board wishes to establish a local community commission for Salt Spring Island, with the scope of authority as set out in this bylaw and such other bylaws as adopted from time to time;

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

**CREATION OF LOCAL COMMUNITY COMMISSION**

- 1. A local community is hereby established, to be known as "Salt Spring Island", and a local community commission is hereby established, to be known as the "Salt Spring Island Local Community Commission" (hereinafter the "Commission").

**BOUNDARIES**

- 2. The boundaries of the Salt Spring Island local community are those of the Salt Spring Island Electoral Area.

**SCOPE OF AUTHORITY**

- 3. Subject to the policies and procedures of the Regional Board and limitations in its bylaws and the *Local Government Act*, the Commission may oversee and exercise powers and duties as set out by bylaw in relation to the following Salt Spring Island services:
  - (a) Economic development as set out in Bylaw No. 1824, "Economic Development Commission Establishing Bylaw No. 1, 1990", as it relates to Salt Spring Island;
  - (b) Wastewater disposal set out in Bylaw No. 2118, "Salt Spring Island Liquid Waste Disposal Additional Local Service Establishment Bylaw No. 1, 1993";
  - (c) Community parks service continued under Bylaw No. 4149, "Salt Spring Island Community Parks Services Conversion Bylaw No. 1, 2017";
  - (d) Community recreation service continued under Bylaw No. 4151, "Salt Spring Island Community Recreation Services Conversion Bylaw No. 1, 2017";
  - (e) Indoor swimming pool service in Bylaw No. 3206, "Salt Spring Indoor Swimming Pool Facility Service Establishment Bylaw No. 1, 2004";

- (f) Community parks and recreation facilities in Bylaw No. 2422, "Salt Spring Island Parks and Recreation Facilities Local Service Establishment Bylaw No. 1, 1996";
- (g) The Salt Spring Island Small Craft Harbour Facilities local service set out in Bylaw No. 2730, "Small Craft Harbour Facilities (Salt Spring Island) Local Service Establishment Bylaw No. 1, 1999";
- (h) Transportation service established under Bylaw No. 3438, "Salt Spring Island Community Transit and Transportation Service Establishment Bylaw No. 1, 2007";
- (i) Street lighting under Bylaw No. 3746, "Salt Spring Island Street Lighting Service Establishment Bylaw No. 1, 2011";
- (j) The issuance of grants-in-aid for Salt Spring Island initiatives under Supplementary Letters Patent Division XIX, OIC 1013/1977, subject always to the restriction on assistance to business under the *Local Government Act*;
- (k) Determination of compensation for livestock injury by dogs under Bylaw No. 4418, "Livestock Injury Compensation Service (Salt Spring Island) Bylaw No. 1, 2021";
- (l) The arts contribution service set out in Bylaw No. 3116, "Salt Spring Island Arts Contribution Service Establishing Bylaw No. 1, 2003";
- (m) The Salt Spring Island Public Library local service set out in Bylaw No. 2725, "Salt Spring Island Public Library Local Service Area Establishment Bylaw No. 1, 1999";
- (n) The Salt Spring Island Search and Rescue contribution as set out in Bylaw No. 3494, "Salt Spring Island Search and Rescue Service Establishment Bylaw, 2007";

#### **ADVISORY COMMITTEES**

- 4. The Commission may create advisory bodies, subject to prior approval of the Regional Board.

#### **LOCAL COMMUNITY COMMISSION & ELECTORAL AREA DIRECTOR**

- 5. The Electoral Area Director may consult with the Commission on matters of local importance, but is not bound by that advice or direction. The Commission cannot restrict the Electoral Area Director's decision-making authority at the Regional Board.

#### **ELIGIBILITY**

- 6. To be eligible for election as a commissioner, individuals must be eligible as a director under the *Local Government Act*.

#### **COMPOSITION & TERM**

- 7. The Commission shall have the following number of voting members, each having one vote:
  - (a) The Salt Spring Island Electoral Area Director; and
  - (b) Four individuals qualified in accordance with this bylaw to act as commissioners.
- 8. The local community shall elect commissioners at the end of each four year term in accordance with the manner provided in Part 3 [*Electors and Elections*] of the *Local Government Act*.
- 9. Commissioners are not permitted to appoint an alternate to act in their absence.



**REMUNERATION AND EXPENSES**

10. Commissioners shall receive an annual stipend or payment per meeting, and shall be reimbursed for necessary expenses incurred in the course of carrying out Commission business, as per applicable CRD Board policies.

**DEATH, RESIGNATION, DISQUALIFICATION AND TERMINATION**

11. A commissioner's appointment ends on the end of election term; resignation; death; incapacity; or ceasing to be qualified as a commissioner.
12. Resignation is effective on receipt of written notice of resignation to the Regional District's Corporate Officer.

**ABSENCES**

13. If a commissioner is absent for more than four consecutive regularly scheduled commission meetings or 60 consecutive days, subject to leave of the Regional Board or illness or injury, the commissioner may be removed by the Regional Board.

**CONDUCT OF MEETINGS AND QUORUM**

14. A quorum of the Commission is a majority of its members.
15. Regular meetings shall be held once per month at a time and date set by resolution of the Commission, in consultation with Regional District staff.
16. The Commission shall observe at its meetings the procedural rules set out in Bylaw No. 3828, "Capital Regional District Board Procedures Bylaw, 2012" (the "CRD Procedures Bylaw").
17. Each Commissioner shall have one vote.
18. The rules, policies, procedures and bylaws which govern the Regional Board shall apply to the Commission where applicable.
19. All meetings of the Commission must be held in a public facility and must be open to the public. Meetings may be closed, where authorized by law.
20. The Commission may meet by electronic means, where the requirements in the CRD Procedures Bylaw are met.
21. If, as a result of members of the Commission declaring a conflict of interest in relation to a matter, and as a consequence, there is no longer a quorum of members of the Commission to decide on a particular issue, the issue shall be referred to the Regional Board for a decision.

**ANNUAL MEETING & OFFICERS**

22. On or before the last day of January of each year, the Commission shall hold an annual meeting (the "Annual Meeting") for the purpose of electing a Chair and Vice-Chair from among its number, to hold such office until the next Annual Meeting. Voting shall be by show of hands, or, if a secret ballot is requested by a member present, by secret ballot.
23. In the event of a vacancy of an officer, the Commission may, by the methods set out in section 22, select another commissioner to fill the vacant officer role until the next Annual Meeting.

**RECORD KEEPING**

24. The Commission shall comply with all public record keeping requirements under the *Community Charter, Local Government Act*, and other applicable legislation.

**CITATION**

25. This bylaw may be cited for all purposes as "Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022".

READ A FIRST TIME THIS	13 <sup>th</sup>	day of	July,	2022
READ A SECOND TIME THIS	13 <sup>th</sup>	day of	July,	2022
READ A THIRD TIME THIS	10 <sup>th</sup>	day of	August,	2022
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	12 <sup>th</sup>	day of	August	2022
APPROVED BY ELECTOR ASSENT THIS	15 <sup>th</sup>	day of	October	2022
ADOPTED THIS	th	day of		20__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

**REPORT TO ELECTORAL AREAS COMMITTEE  
MEETING OF WEDNESDAY, JULY 13, 2022**

---

**SUBJECT**     **Bylaws 4507 and 4508: Establishment of Local Community Commission for Salt Spring Island**

**ISSUE SUMMARY**

To create an elected body with a scope of authority over specified island-wide services for Salt Spring Island, known as a local community commission.

**BACKGROUND**

The Electoral Area Director for Salt Spring Island in consultation with a group of Salt Spring Island residents, has requested the Capital Regional District (CRD) advance the creation of a local community commission (“LCC”) for Salt Spring Island. An LCC is a type of regional district commission with delegated authority over specified local services, comprised of elected, rather than appointed, membership. The purpose of this LCC proposal is to broaden CRD elected oversight and administration of certain delegated local services, make decision-making regarding these services more locally transparent and reflective of the broad public interest, and to consolidate the fragmented nature of CRD service delivery through appointed, individual commissions.

Bylaw No. 4507, “Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022”, has been prepared to allow consideration of the establishment of a new LCC for Salt Spring Island (Appendix A). To create the LCC, Bylaw No. 4507 must be introduced and given three readings by the Board, before being referred to the Ministry for approval and to electors for assent by referendum. The referendum question must be approved by the CRD Board to be placed on the ballot during the upcoming general voting day on October 15, 2022. If the electors are in favour, the bylaw may be adopted by the CRD Board and an election for the four public members of the LCC will be held in 2023 in accordance with the *Local Government Act* (“LGA”). After the LCC members are elected, CRD would adopt Bylaw No. 4508 and take steps to dissolve the other commissions who currently have delegated authority over the services intended to be administered by the LCC.

Proposed Bylaw No. 4508 sets out the scope of delegated authority over the services overseen by the proposed LCC. The scope of the LCC includes island-wide services currently overseen by existing commissions, such as parks and recreation, transportation, economic development, and liquid waste disposal. The scope also includes services currently overseen by staff and the EA Directors, including street lighting, determination of compensation of livestock injury by dogs, and the approval of grant-in-aid applications. The LCC would also have an advisory role to review and recommend budgets for SSI contribution services that receive CRD funding, including the arts contribution service, the public library service, and the search and rescue service. The full list of proposed services are included in Bylaw No. 4507 attached as Appendix A. Area-specific services, such as wastewater and water services, would continue to be overseen by commissions comprised of ratepayers from these service areas.

Should the Salt Spring Island community wish to expand the scope of services or dissolve the LCC in future, a referendum or Alternative Approval Process would be necessary to amend or repeal the LCC establishing bylaw, unless the Inspector of Municipalities consented to waiving the elector asset process, which is an alternative in section 244 of the *Local Government Act*.

The creation of an LCC will not alter the Salt Spring Island Electoral Area's relationship with Islands Trust, which is responsible for the local planning function under the *Islands Trust Act*, RSBC 1996, c 239.

## **ALTERNATIVES**

### *Alternative 1*

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

1. Bylaw No. 4507, "Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022", be introduced and read a first, second, and third time;
2. That CRD staff be directed to implement the elector approval process by way of referendum;
3. That Kristen Morley be appointed Chief Election Officer with the power to appoint one or more Deputy Chief Election Officer(s);
4. That the wording of the referendum question for the purposes of the ballot shall be as follows:

*Are you in favour of the Capital Regional District (CRD) Board adopting Bylaw No. 4507, "Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022", authorizing the establishment of a local community commission for the Salt Spring Island Electoral Area, to be comprised of four elected commissioners and the Electoral Area Director, to oversee and advise on economic development, wastewater disposal, community parks and recreation, small craft harbour facilities, transit and transportation, street lighting, grants-in-aid, compensation for livestock injured by dogs, and the contribution services for arts, public library, and search and rescue?*

### **YES or NO?**

5. That general voting be held on Saturday, October 15, 2022, with Advance Voting opportunities held on dates and voting places to be determined by the Chief Election Officer;
6. That the synopsis of Bylaw No. 4507, attached as Appendix B, be approved for advertising purposes.
7. That Bylaw No. 4508, "Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022", be introduced and read a first, second, and third time.

### *Alternative 2*

The Electoral Areas Committee recommends to the Capital Regional District Board that this matter not proceed.

## **IMPLICATIONS**

### *Governance Implications*

Creation of an LCC, with an elected membership, is the highest form of delegated government contemplated in an electoral area under the *Local Government Act*. An LCC permits Salt Spring Island to elect individuals who will oversee certain local services giving the electoral area delegated authority over its services rather than having decisions made by the Board.

The LCC would be comprised of 5 members, one of which is the Electoral Area Director for SSI, and four other commissioners that would be elected by residents on Salt Spring Island. Elections for LCC members follow the same requirements as Director elections under the *LGA*. If approved, the first election would take place in late spring of 2023. In subsequent years, LCC members would be elected at the time of the General Local Election. The LCC will elect a Chair and Vice-Chair annually from its commissioners. Each LCC member has one vote. The EA Director has the same status and authority as all other members of the LCC on services delegated to the LCC. By legislation, only the EA Director is entitled to sit and vote at the Regional Board. On referral by the Regional Board, the LCC can make recommendations to the Director; however, the LCC cannot fetter the discretion of the Director on issues not delegated to the LCC.”

Should a vacancy occur in a commissioner’s term, the *Local Government Act* does permit alternatives to a general election provided they are set out in the LCC bylaw. Bylaw No. 4507 permits voting by mail, a less costly alternative to a general election; as well as appointment by the CRD Board after a public solicitation process and consultation with the current LCC. Both options would save the local community the cost of a by-election in certain circumstances, while also retaining the ability to hold a by-election based on costs, length of the remaining term, and other factors of importance to the community.

Given the wide scope of authority assigned to the LCC under the establishing bylaw, staff recommend that the LCC commissioners be remunerated for their services. On adoption of the LCC establishing bylaw, staff would bring forward amendments to the Board Remuneration and Travel Expense Policy to include remuneration for the LCC members, prior to starting the election process for the commissioners.

If the LCC wishes to make changes to its establishing bylaw in future, it requires elector approval, unless the Inspector of Municipalities waives this requirement. While the LCC is proposed to have a wide scope of authority over many island-wide services, the LCC is still subject to the same restrictions as other commissions with respect to the powers of the Regional Board including the adoption of bylaws or approval of budgets.

The level of delegation proposed for the LCC is set out in the draft delegation bylaw, Bylaw No. 4508, “Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022”. Bylaw 4508 is not subject to elector approval, but is recommended for three reading by the Board, with adoption held pending adoption of the LCC bylaw and election of its membership.

If the LCC is established, the existing Salt Spring Island Liquid Waste Commission, Transportation Commission, and Parks and Recreation Commission, and Economic Sustainability Commission will be dissolved, with the current scope of authority falling to the LCC.

A number of other commissions with varying levels of delegated authority are already in place on Salt Spring Island, and throughout the CRD. CRD has authority under the *LGA* to create commissions that are delegated the powers, duties and functions of the Regional Board. One fundamental difference is that a non-LCC commission has appointed, rather than elected, membership, giving additional flexibility relating to appointments, and costly elections can be avoided. A benefit of a non-LCC commission is that its membership can be structured in creative ways defined by bylaw, to ensure its members provide a full range of community representation, such as including representation from interested First Nations, public authorities, community groups, or individual residents of a sub-local area. This is not possible with an LCC where the commissioners are elected and remunerated. That said, unlike an LCC, a traditional delegated commission created by bylaw may be altered or amended without an elector approval process. The process of elector assent to create the LCC and election of LCC commissioners does allow the maximum level of community input into creating a commission.

*Financial Implications*

There will be added administration and legislative services support if an LCC is established. An LCC will have commissioner remuneration and expenses and costs related to technological requirements. Capital upgrades may be required for SSI meeting facilities to facilitate public participation by webcasting and to allow for electronic meetings. It is anticipated that some of the legislative and administration support costs will be offset by dissolving some of the existing Commissions, however it is expected that there will be a significant increase in the activity of the LCC with respect to the additional number of other services included in their oversight.

The preliminary estimate for additional staffing, elections, remuneration, equipment, software and establishing an election and equipment replacement reserves are outlined below. Some of these costs are one-time costs and others are ongoing costs. LCC ongoing costs will be pro-rated depending on the timing of an election in 2023.

<b>Costs</b>	<b>One-Time</b>	<b>Ongoing</b>
1.2 FTE		\$106,110
Election	\$60,000	
Election reserve		\$15,000
Commissioner remuneration		\$40,000
Tablets	\$10,000	
Software		\$2,500
Transfer to equipment replacement reserve		\$5,000
Sub-total	\$70,000	\$168,610

*Service Delivery Implications*

The LCC will have purchasing authority in conjunction with the authority already delegated to staff by the Regional Board. It will also oversee approvals of grants-in-aid currently delegated to the Chief Financial Officer and Chief Administrative Officer, on the recommendation of the Electoral Area Director.

**CONCLUSION**

The creation of a local community commission for Salt Spring Island will permit greater elected representation for the electoral area and greater involvement in the administration of island-wide services, with the potential for elected members to advise on other on-island services or issues. The creation of such a commission is subject to elector assent or referendum vote.

**RECOMMENDATION**

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

1. Bylaw No. 4507, “Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022”, be introduced and read a first, second, and third time;
2. That CRD staff be directed to implement the elector approval process by way of referendum;
3. That Kristen Morley be appointed Chief Election Officer with the power to appoint one or more Deputy Chief Election Officer(s);
4. That the wording of the referendum question for the purposes of the ballot shall be as follows:

*Are you in favour of the Capital Regional District Board adopting Bylaw No. 4507, “Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022”, authorizing the establishment of a local community commission for the Salt Spring Island Electoral Area, to be comprised of four elected commissioners and the Electoral Area Director, to oversee and advise on economic development, wastewater disposal, community parks and recreation, small craft harbour facilities, transit and transportation, street lighting, grants-in-aid, compensation for livestock injured by dogs, and the contribution services for arts, public library, and search and rescue?*

**YES or NO?**

5. That general voting be held on Saturday, October 15, 2022, with Advance Voting opportunities held on dates and voting places to be determined by the Chief Election Officer;
6. That the synopsis of Bylaw No. 4507, attached as Appendix B, be approved for advertising purposes.
7. That Bylaw No. 4508, “Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022”, be introduced and read a first, second, and third time.

Submitted by:	Karla Campbell, MBA, BPA, Senior Manager, Salt Spring Island Electoral Area
Concurrence:	Steven Carey, B.Sc, J.D., Acting General Manager, Corporate Services
Concurrence:	Robert Lapham, MCIP, RPP, Chief Administrative Officer

**ATTACHMENTS**

- Appendix A: Bylaw No. 4507, “Salt Spring Island Local Community Commission Establishment Bylaw No. 1, 2022”
- Appendix B: Synopsis of Bylaw No. 4507
- Appendix C: Bylaw No. 4508, “Salt Spring Island Local Community Commission Delegation Bylaw No. 1, 2022”



Making a difference...together

**REPORT TO ELECTORAL AREAS COMMITTEE  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

---

**SUBJECT**     **Bylaw Nos. 4524 and 4525: Fees and Charges Bylaw Amendments for Utilities within the Three Electoral Areas**

**ISSUE SUMMARY**

To update the utilities rates for the three electoral areas as recommended by the respective Commissions, and as included in the 2023 Financial Plan.

**BACKGROUND**

Annually, amendments to the Electoral Area utilities fees and charges bylaws are recommended to reflect the rates included in the service budgets and preliminary financial plan for the forthcoming year. All local service commissions have recommended their respective 2023 budgets, inclusive of the changes to fees and charges except Wilderness Mountain Water Service Commission.

Budget reviews were conducted with the Wilderness Mountain Water Service Commission twice on November 21 and 28, 2022 resulting in the Commission not recommending the presented 2023 Operating and Capital Budget, which received provisional approval from CRD Board on September 21, 2022. The Commission passed a motion which included recommending 0% increase in all 5 years 2023-2027, which would result in removal of funding for asset system maintenance and planned capital upgrades. Taking consideration of Commission's recommendation, staff are proceeding with a budget increase of 0% with projected future increase of 7%, 5%, 2% and 2% in subsequent years of 2024-2027. The Fees and Charges included in Bylaw No.4524 reflects 0% increase in 2023. The commission will be engaged for further discussion regarding sustainable service delivery and prudent financial planning for future years.

The proposed fee and charges amendments are intended to cover the projected net cost of service delivery inclusive of reserve contributions for the upcoming year. Board approval is required in advance of the effective billing period January 1 through December 31, 2023.

With final surplus and deficits not yet completed, results will be monitored to identify any material impact, and these would be incorporated into a rate adjustment and bylaw amendment after final year end results.

Appendix C contains a comparison of changes to rates contained in each of the two bylaws: Bylaw No. 4524 (Appendix A) and Bylaw No. 4525 (Appendix B).

Bylaw No. 4524 covers all Southern Gulf Islands and Juan de Fuca Electoral Areas Sewer, Water and Street Lighting Fees and Charges, and Bylaw No. 4525 covers all Salt Spring Island Electoral Area Sewer, Water and Liquid Waste Disposal Fees and Charges.

**ALTERNATIVES**

*Alternative 1*



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

1. That Bylaw No. 4524, "Southern Gulf Islands and Juan de Fuca Electoral Areas Utilities and Street Lighting Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 11, 2022", be introduced and read a first, second, and third time.
2. That Bylaw No. 4524 be adopted.
3. That Bylaw No. 4525, "Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 16, 2022", be introduced and read a first, second, and third time.
4. That Bylaw No. 4525 be adopted.

*Alternative 2*

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

**IMPLICATIONS**

*Financial Implications*

Changes in fees and charges are required in order for local utility services in the three Electoral Areas to maintain adequate levels of funding for annual operating costs inclusive of reserve contributions and debt servicing. The recommended rates are effective for January 1 through December 31, 2023 and reflect estimates of the 2022 surplus and deficit.

**CONCLUSION**

Utilities within the Electoral Areas require changes to fees and charges, to reflect user fees required to fund operating and capital budgets. The Commissions have recommended their respective 2023 service budget for Board approval; this approval is required prior to January 1, 2023, in order to attain the revenue targets specified in the 2023 service budgets.

**RECOMMENDATION**

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

1. That Bylaw No. 4524, "Southern Gulf Islands and Juan de Fuca Electoral Areas Utilities and Street Lighting Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 11, 2022", be introduced and read a first, second, and third time.
2. That Bylaw No. 4524 be adopted.
3. That Bylaw No. 4525, "Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 16, 2022", be introduced and read a first, second, and third time.
4. That Bylaw No. 4525 be adopted.

Submitted by:	Rianna Lachance, BCom, CPA, CA, Senior Manager, Financial Services
Concurrence:	Nelson Chan, MBA, FCPA, FCMA, Chief Financial Officer
Concurrence:	Ian Jesney, Peng., Acting General Manager, Integrated Water Services
Concurrence:	Kristen Morley, J.D., General Manager, Corporate Services & Corporate Officer
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENT(S)**

- Appendix A: Bylaw No. 4524 and Schedules
- Appendix B: Bylaw No. 4525 and Schedules
- Appendix C: Changes to Fees & Charges Summary

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4524

\*\*\*\*\*  
**A BYLAW TO AMEND BYLAW 3847 TO UPDATE FEES AND CHARGES FOR UTILITY SERVICES WITHIN THE SOUTHERN GULF ISLANDS AND JUAN DE FUCA ELECTORAL AREAS**  
 \*\*\*\*\*

The Board of the Capital Regional District in open meeting assembled enacts as follows:

1. Bylaw No. 3847 "Southern Gulf Islands and Juan de Fuca Electoral Areas Utilities and Street Lighting Fees and Charges Bylaw No. 1, 2012" is amended as follows:
  - a) By removing SCHEDULE "C" in its entirety and replacing it with SCHEDULE "C" attached hereto.
2. Citation:

This Bylaw may be cited as "Southern Gulf Islands and Juan de Fuca Electoral Areas Utilities and Street Lighting Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 11, 2022".

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__
ADOPTED THIS	th	DAY OF	202__

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

**SCHEDULE "C"**1. Water, Sewer, and Port Renfrew Street Lighting

a) For Single Family Equivalent, the user fees payable by Service Area shall be:

<b>Service Area</b>	<b>Annual Charge • 25% of which is billed each 3 months</b>
Skana Water	\$1,181.80 per Single Family Equivalent connected to the water system
Surfside Park Estates Water	\$1,447.72 per Single Family Equivalent connected to the water system
Lyll Harbour/ Boot Cove Water	\$730.88 per Single Family Equivalent connected to the water system
Magic Lake Estates Sewer	\$416.04 per Single Family Equivalent connected to the sewer system
Magic Lake Estates Water	\$356.38 per Single Family Equivalent connected to the water system
	Quarterly Consumption Charge, effective as of July 1, 2013: >50 m <sup>3</sup> = \$0.50 m <sup>3</sup> >80 m <sup>3</sup> = \$1.00 per m <sup>3</sup>
Sticks Allison Water	\$1,749.70 per Single Family Equivalent connected to the water system
	Excess Consumption Fee – for metered water use per service connection in excess of 110 cubic metres per three months: \$5.00 per cubic metre
Wilderness Mountain Water	Consumption Charge: \$20.00 per month for each Single Family Equivalent connected to the water system Annual User Charge: \$992.80 per annum for each Single Family Equivalent connected to the water system
Port Renfrew Water Annual User Charge	\$209.93 per Unit (see Section 1b) billed in four equal payments
Port Renfrew Sewer Annual User Charge	\$662.10 per Unit (see Section 1b) billed in four equal payments
Port Renfrew Street Lighting	\$41.78 per User

(Schedule "C" continued on next page)

- b) For other Consumers, the annual charge, 25% of which is billed each three months, is calculated as "N" times the total annual Single Family Equivalent. "N" is determined as outlined in the following chart, except as noted in Sections 1c and 1d.

Use	"N"
Bed and Breakfast – each building	1.00
Hotel/Motel – each housekeeping unit	1.00
Cabin – each unit	1.00
Mobile home park – per space	1.00
Commercial building housing 1 business	
Up to 3 employees	1.25
4 or more employees	1.50
Commercial building housing more than 1 business	
Each business up to 3 employees	1.25
Each business 4 or more employees	1.50
Restaurant	2.00
Church	1.00
School – for each classroom	1.00
Hospital – for each bed	1.00
Other – for each 1,360 litres of daily winter water consumption. Estimated flows will be based on regulations or guidelines issued pursuant to the <i>BC Health Act</i> .	1.00

- c) For the Lyall Harbour/Boot Cover Water Service Area

Use	"N"
Commercial building housing 1 business	
Up to 3 employees	1.00
4 or more employees	2.00
Commercial building housing more than 1 business	
Each business up to 3 employees:	1.00
Each business with 4 or more employees:	2.00

- d) For Port Renfrew Water and Sewer Service Areas:  
If the Single Family Equivalent has not been designated in 1b, the unit calculation will be based on the **Minimum Daily Design Flow** as specified in the *Sewerage System Standard Practice Manual*, Version 2, September 21, 2007, prepared by the BC Onsite Sewage Association.

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4525

\*\*\*\*\*
A BYLAW TO AMEND BYLAW 3864 TO UPDATE FEES AND CHARGES FOR UTILITY
SERVICES AND LIQUID WASTE DISPOSAL WITHIN THE
SALT SPRING ISLAND ELECTORAL AREA
\*\*\*\*\*

The Board of the Capital Regional District in open meeting assembled enacts as follows:

- 1. Bylaw No. 3864 "Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges Bylaw No. 1, 2012" is amended as follows:
a) By removing SCHEDULE "B" in its entirety and replacing it with SCHEDULE "B" attached hereto.
b) By removing SCHEDULE "C" in its entirety and replacing it with SCHEDULE "C" attached hereto.

2. Citation:

This Bylaw may be cited as "Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges Bylaw No. 1, 2012, Amendment Bylaw No. 16, 2022".

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\_\_
ADOPTED THIS th DAY OF 202\_\_

CHAIR

CORPORATE OFFICER

**SCHEDULE "B"**

1. Water Service Turn On and Turn Off Fee

Pursuant to Section 4, the fee for turning on or turning off the water supply at the curb stop is the following. The fees payable herein shall be paid to the CRD on application for the service.

- (a) During Normal Working Hours (07:30 – 16:00) Monday through Friday (non-inclusive of statutory holidays):
  - \$75.00
  - Fulford Water only \$150.00
  
- (b) During Non-Working Hours: \$200.00

*(Schedule "B" continued on next page)*

2. Water and Sewer User Fees

The user fees payable shall include a fixed fee and a variable consumption charge based on the volume of water metered as outlined below:

(a) Fixed Fee

<b>Service Area</b>	<b>Annual Charge, 25% of which is billed each three months</b>
Cedars of Tuam	\$1,941.18 per single family dwelling unit or equivalent
Cedar Lane	\$1,417.95 per single family dwelling unit or equivalent
Beddis	\$1,021.02 per single family dwelling unit or equivalent
Highland	\$0 per single family dwelling unit or equivalent
Fernwood	\$0 per single family dwelling unit or equivalent
Highland and Fernwood	\$1,217.09 per single family dwelling unit or equivalent
Maliview	\$1,888.61 per single family dwelling unit or equivalent
Fulford	\$1,572.18 per single family dwelling unit or equivalent Other: No Fixed Fee

(b) Consumption Charge based on volume of water metered

The Consumption Charge for water or sewer will be the total volume of water metered to the water service connection, measured in cubic metres (or other units converted to cubic metres) over a three-month billing period, at a rate as follows:		
<b>Service Area</b>	<b>Volume of Water</b>	<b>Charge</b>
Cedars of Tuam	First 38.0 cubic metres or portion	\$7.00 per cubic metre
	Greater than 38.0 cubic metres	\$18.00 per cubic metre
Cedar Lane	First 30.0 cubic metres or portion	\$2.50 per cubic metre
	31.0 to 60.0 cubic metres or portion	\$9.00 per cubic metre
	Greater than 61 cubic metres	\$25.00 per cubic metre
Beddis	First 38.0 cubic metres or portion	\$3.10 per cubic metre
	Next 68.0 cubic metres or portion	\$6.30 per cubic metre
	Greater than 106 cubic metres	\$8.50 per cubic metre
Highland and Fernwood	First 38.0 cubic metres or portion	\$0.64 per cubic metre
	Next 68.0 cubic metres or portion	\$2.00 per cubic metre
	Greater than 106 cubic metres	\$5.13 per cubic metre
Maliview	\$1.75 per cubic metre of total water provided or delivered to the single family dwelling unit or equivalent served by the sewer connection to the CRD Highland Water System	
Fulford	Single Family Residential: No Consumption Charge Other: \$3.27 per cubic metre Minimum Consumption Charge per three months is \$393.04 per service connection.	



**SCHEDULE “C”**

## Liquid Waste Receiving Facility

1. Disposal Fees and Charges

Every Hauler depositing Liquid Waste at the Liquid Waste Receiving Facility shall pay the following fees and charges:

<b>Fees:</b>	
Septage	\$104.49 per cubic metre (\$0.475 per imperial gallon)
Sewage	\$104.49 per cubic metre (\$0.475 per imperial gallon)
Facility User Permit	\$50.00 per Septage waste disposal truck per annum (valid for a period from January 1 of each year until December 31 of the subject year).  This fee is not pro-rated in the first year of this schedule coming into force.
<b>Charges:</b>	
Call Out Charge	\$75.00 per hour; minimum charge \$150 first 2 hours
After Hours Call Out	\$75.00 per hour; minimum charge \$150 first 2 hours

2. Definitions:

The following terms, words and phrases when used in this schedule shall have the meanings set forth in this contained in this schedule:

“**CRD**” means the Capital Regional District.

“**Call Out Charge**” means a charge issued to any person who uses the Liquid Waste Receiving Facility due to an event directly attributable to a person(s) actions requiring CRD personnel to attend the Liquid Waste Receiving Facility.

“**Discharge**” means to directly or indirectly introduce a substance into a Sewer or sewage facility by spilling, disposing of, abandoning, depositing, leaking, seeping, pouring, draining, emptying or by any other means.

“**Facility Access Permit**” means a Facility Access Permit issued by the CRD.

“**Generator**” means an owner or occupier of property from which the Liquid Waste originates that is being trucked to a facility for disposal.

“**Hauler**” means a person or company who transports Liquid Waste from a Generator to a Liquid Waste facility for disposal.

“**Local Service Area**” means the Local Service Area established under bylaw 2118 Salt Spring Island Liquid Waste Disposal Additional Local Service Establishment Bylaw No. 1, 1993.

“**Load of Liquid Waste**” means the Liquid Waste being delivered by the hauling vehicle.

“**Liquid Waste**” means Septage and/or Sewage Sludge.

“**Liquid Waste Receiving Facility**” means the Salt Spring Liquid Waste facility that receives Trucked Liquid Waste, more particularly described as located off Burgoyne Bay Road, Salt

Spring Island (part of the North ½ of Section 4, Range 1, South Salt Spring Island, Cowichan District).

**“Measured volume”** means the actual volume of Liquid Waste Discharged at the designated Liquid Waste Receiving Facility as measured by the flow meter installed at the facility.

**“Municipality”** means a municipality or electoral area participating in the Local Service Area and/or the CRD itself.

**“Prohibited Waste”** means Hazardous Waste as defined by the *Hazardous Waste Regulation*.

**“Septage”** means a combination of liquid and solid wastes and/or settled solids from residences, businesses, institutions and industries normally collected in a Septic Tank or holding tank.

**“Septic Tank”** means a chamber made of concrete, fiberglass, PVC or plastic, through which domestic wastewater flows for primary treatment

**“Sewage Sludge”** means the primary or secondary Sewage Sludge from a sewage treatment plant.

**“Sewer”** means all pipes, conduits, drains and other equipment and facilities owned or otherwise under the control or jurisdiction of the CRD for collecting, pumping and transporting wastewater, either to a Sewage Facility or otherwise.

**“Trucked Liquid Waste”** means any Liquid Waste that is collected and transported from the site where the Liquid Waste originated by means other than Discharge to a Sewer, including but not limited to: Septic Tank waste, chemical toilet contents, oil and grease from interceptors or traps and other sludges of organic or inorganic origin.

**“Trucked Waste Manifest”** means a form provided by the CRD to be completed by the Generator, or agent acting on behalf of the Generator, and Hauler of Septage as a condition of using a Liquid Waste Receiving Facility.

### 3. User Fees:

- a) The Liquid Waste disposal fee set out in Section 1 will be imposed on every Hauler depositing Liquid Waste at the Liquid Waste Receiving Facility and shall be paid in accordance with this bylaw.
- b) The fees charged will be calculated by multiplying the measured volume of Liquid Waste Discharged by the unit rate set out in Section 1. Where no measured volume is available, the fees charged will be calculated by multiplying the unit rate by the volume of a full load of Liquid Waste from the Haulers truck as specified in the operator’s manual for the Haulers truck.

### 4. Credit:

- a) Persons depositing Liquid Waste at the Liquid Waste Receiving Facility on a regular basis may apply to the CRD for credit. If the CRD is satisfied of the credit worthiness of the

Hauler, credit may be granted, in which case payment of the user fees imposed under Section 3 shall be made and credit extended under the following conditions:

- i. The person receiving credit shall pay to the CRD all fees in full within thirty (30) days of the last day of the month for which an invoice has been submitted. The CRD will invoice monthly for Liquid Waste delivered during the preceding month. The invoice amount will be based on the total quantity of the waste delivered during the month, and the posted rates in effect at the time of delivery.
- ii. Late payment(s) will be subject to an interest penalty of 1.5% per month.
- iii. The CRD reserves the right to cancel, upon five (5) days' notice, the credit offered herein for late payment, non-payment or other justified cause as judged solely by the CRD.

5. Regulations:

- a) Persons, including Generators or Haulers of Liquid Waste, shall only use the Liquid Waste Receiving Facility upon the following conditions:
  - i. That they agree to comply with all provisions within this Bylaw.
  - ii. They have received a Facility Access Permit from the CRD.
  - iii. That the Liquid Waste meets the operating criteria to be received and processed at the facility.
  - iv. That they agree to comply with all operating protocols governing the use of the Liquid Waste Receiving Facility as prescribed in Section 6, as stated on any signage or materials published by the CRD, or as directed by an employee or agent of the CRD.
- b) Any person making a Discharge at the Trucked Liquid Waste Receiving Facility shall immediately stop the Discharge at the instructions of an employee of the CRD if that employee has reasonable grounds to believe the Discharge does not meet the provisions of this bylaw or any other enactment.
- c) A Hauler or other person is liable for any damage to a Liquid Waste Receiving Facility or CRD property caused by the Hauler or other person or caused by the functioning or operation of a Hauler or other person's vehicle, tank, or equipment.
- d) The CRD may suspend or revoke a permit to access and use of the Liquid Waste Receiving Facility if the Generator or Hauler falsifies or omits information on a Trucked Waste Manifest.
- e) Sections 5 (a) to 5 (d) do not apply to a Municipality or agent of a Municipality, where Liquid Waste is removed from a water, Sewer or sewage facility or the Liquid Waste Receiving Facility for purposes of maintenance activities on the water, Sewer or sewage facility or the Liquid Waste Receiving facility.

## 6. Operating Protocols:

- a) The Liquid Waste Receiving Facility is an unattended facility and is controlled by a locked gate. In order to access the site a Hauler must have a valid Facility Access Permit.
  - i. Permits can be obtained by making application to the CRD on the application form attached hereto in Schedule "E", and paying the annual fee as set out in section 1.
  - ii. Each vehicle owned by the Hauler that is used for the purposes of Septage waste disposal at the Liquid Waste Receiving Facility must be listed on the Facility Access Permit.
  - iii. Once approved a Facility Access Permit sticker, gate access key and/or codes will issued to the Hauler.
  - iv. A Facility Access Permit Sticker will be issued for each vehicle listed on the Facility Access Permit.
  - v. The CRD may suspend or revoke a Facility Access Permit:
    - (1) for any or all vehicles licensed to any one Hauler for any violation of, or noncompliance with, the terms and conditions of this bylaw, or any enactment applicable to the Discharge of waste into a Liquid Waste Receiving Facility, when the violation or noncompliance interferes with the operation of the Liquid Waste Receiving Facility.
    - (2) if a Generator or Hauler falsifies or omits information regarding the source, type, or quality of Septage Discharged at the Liquid Waste Receiving Facility.
    - (3) for any or all vehicles licensed to any one Hauler for failure to pay fees described in this bylaw within 60 days of being invoiced by the CRD or the Operator.
- b) While on site at the Liquid Waste Receiving Facility, all Haulers, persons, employees, and agents of the CRD shall abide by WorkSafeBC and CRD protocols and regulations, and conduct their activities in a safe and respectful manner.
- c) The designated intake connection at the Liquid Waste Receiving Facility must be used. Discharging Liquid Waste directly or indirectly into any other point at the Liquid Waste Receiving Facility is strictly prohibited and may result in suspension or revocation of a Facility Access Permit.
- d) Information regarding the Liquid Waste to be Discharged including the waste manifest must be properly entered into the log-in Hauler's panel or may result in suspension or revocation of a Facility Access Permit.
- e) The solid to Liquid Waste content shall not contain any solid rocks or debris larger than 38mm in diameter. Failure to comply with this requirement may lead to Call Out Charges as set out in Section 1, if CRD staff are required to attend the Liquid Waste Receiving Facility, and could result in liability to repair the facility if damage is caused.
- f) Should the Liquid Waste Receiving Facility alarm go into effect and the inlet valve close, Haulers must wait until the Liquid Waste Receiving Facility has been reset before

continuing to off-load. No Liquid Waste shall be deposited anywhere else on site while waiting for CRD personnel to respond.

- g) All hauling vehicles using the site must have connection devices compatible with those of the facility.
- h) The Hauler is responsible for connecting and disconnecting hoses from the hauling vehicle to the facility Discharge coupling, and the operation of the equipment associated with the hauling vehicle.
- i) The Discharge of Liquid Waste shall be conducted without spillage. Hoses shall not be drained to the ground. In the event that an environmental spill occurs, the Hauler must immediately discontinue discharging and contact the CRD and report the a) date / time; b) volume; c) material spilled.
- j) Each vehicle owned by the Hauler that is used for the purpose of waste disposal at the Liquid Waste Receiving Facility must provide sufficient containment of loads to prevent spillage in transit, including spillage from hoses and other appurtenances.
- k) Parking for Haulers' or other persons' vehicles on site is permitted only while discharging Liquid Waste.
- l) There is a limited supply of water to operate the Liquid Waste Receiving Facility. No person shall use water for washing or servicing their vehicles.
- m) The Hauler shall designate on the Trucked Waste Manifest the type of Liquid Waste being Discharged.
- n) Users shall observe and comply with all posted speed limit requirements on the road access and on the Liquid Waste Receiving Facility.
- o) Hours of Operation:
  - i. Liquid Waste will only be accepted at the Liquid Waste Receiving Facility during regular hours of operation.
  - ii. The regular hours of operation at the Liquid Waste Receiving Facility are as follows:

Monday to Friday, excluding statutory holidays	7:30 am to 4:00 pm
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  - iii. During the regular hours of operation, the Liquid Waste Receiving Facility will be open for Haulers to dispose of Liquid Waste. CRD staff will only be available to respond to any issues or alarms during regular hours of operation.
  - iv. After hours access may be considered under emergency situations.
  - v. No person shall make use of the Liquid Waste Receiving Facility at any time other than the regular hours and days of operation, unless:
    - (1) that person is an employee, contractor or agent of the CRD; or

- (2) there is an emergency situation, and the person using the Liquid Waste Receiving Facility pays the after hour charges as set out in Section 1.
- p) A flow meter is provided and shall be used to measure the volume of each Discharge. The CRD will bill each Hauler based on the total volume of Liquid Waste Discharged.

7. Offences and Penalties:

- a) A person who contravenes this bylaw is guilty of an offence and is liable, upon conviction, to a fine not exceeding \$10,000.
- b) Where an offence is committed, or continues on for more than one day, a person shall be deemed to have committed separate offences for each day on or during which an offence occurs or continues, and separate fines, each not exceeding \$10,000, may be imposed for each day on or during which an offence occurs or continues.

Nothing in this bylaw shall limit the CRD from utilizing any other remedy that would otherwise be available to the CRD at law.

## Appendix C

### Changes to Fees & Charges, Bylaws No. 4524 and 4525

Purpose: To summarize changes to Fees and Charges for 2023 in the three Electoral Areas.

**Bylaw No. 4524:**

**To Amend Southern Gulf Islands and Juan de Fuca Electoral Areas Utilities and Street Lighting Fees and Charges**

Changes to Schedule "C" (1) a) Water, Sewer and Port Renfrew Street Lighting

Service Area	2023 Annual Charge	2022 Annual Charge	Committee/Commission Recommendation
Skana Water	\$1,181.80 (per SFE)	\$1,073.02 (per SFE)	Skana Water Service Committee November 22, 2022
Surfside Park Estates Water	\$1,447.72 (per SFE)	\$1,394.22 (per SFE)	Surfside Park Estates Water Service Committee November 24, 2022
Lyall Harbour/Boot Cove Water	\$730.88 (per SFE)	\$684.78 (per SFE)	Lyall Harbour/Boot Cove Water Local Services Committee November 22, 2022
Magic Lake Estates Sewer	\$416.04 (per SFE)	\$405.70 (per SFE)	Magic Lake Estates Water and Sewer Committee November 29, 2022
Magic Lake Estates Water	\$356.38 (per SFE)  No Change	\$334.56 (per SFE)  Consumption Charge >50 m <sup>3</sup> = \$0.50/m <sup>3</sup> >80 m <sup>3</sup> = \$1.00/m <sup>3</sup>	
Sticks Allison Water	\$1,749.70 (per SFE)	\$1,744.56 (per SFE)	Sticks Allison Water Local Service Committee November 24, 2022
	No Change	> 110 m <sup>3</sup> per 3 months = 5.00/m <sup>3</sup>	
Wilderness Mountain Water	No Change	\$992.80 (per SFE)	Wilderness Mountain Water Service Commission November 21 & 28, 2022
	No Change	Consumption Charge = \$20.00 (Monthly per SFE)	
Port Renfrew Water Annual User Charge	\$209.93 (per Unit)	\$204.41 (per Unit)	Port Renfrew Utility Services Committee November 21, 2022
Port Renfrew Sewer Annual User Charge	\$662.10 (per Unit)	\$640.23 (per Unit)	
Port Renfrew Street Lighting	\$41.78 (per User)	\$40.60 (per User)	

**Bylaw No. 4525:  
To Amend Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges**

Changes to Schedule "B" (2) a) Water and Sewer User Fees - Fixed Fees

<b>Service Area</b>	<b>2023 Annual Charge (per SFE)</b>	<b>2022 Annual Charge (per SFE)</b>	<b>Committee/Commission Recommendation</b>
Cedars of Tuam Water	\$1,941.18	\$1,941.18	Cedars of Tuam Water Service Commission October 25, 2022
Cedar Lane Water	\$1,417.95	\$1,345.35	Cedar Lane Water Service Commission October 31, 2022
Beddis Water	\$1,021.02	\$900.46	Beddis Water Service Commission October 31, 2022
Highland Water	No Change	\$0	Fernwood and Highland Water Service Commission October 17, 2022
Fernwood Water	No Change	\$0	
Highland & Fernwood Water	\$1,217.09	\$1,182.53	
Maliview Sewer	\$1,888.61	\$1,826.73	Maliview Sewer Local Service Commission October 17, 2022
Fulford Water	\$1,572.18	\$1,480.40	Fulford Water Service Commission October 3, 2022



**Bylaw No. 4525:  
To Amend Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges**

Changes to Schedule "B" (2) b) Water and Sewer User Fees - Consumption Charge based on volume of water metered

Service Area	2023 Consumption Charge	2022 Consumption Charge	Committee/Commission Recommendation
Cedars of Tuam Water	First 38 m <sup>3</sup> = \$7.00/m <sup>3</sup> >38 m <sup>3</sup> = \$18.00/m <sup>3</sup>	First 38 m <sup>3</sup> = \$3.50/m <sup>3</sup> >38 m <sup>3</sup> = \$9.00/m <sup>3</sup>	Cedars of Tuam Water Service Commission October 25, 2022
Cedar Lane Water	No Change	First 30 m <sup>3</sup> = \$2.50/m <sup>3</sup> >30 m <sup>3</sup> = \$9.00/m <sup>3</sup> >61 m <sup>3</sup> = \$25.00/m <sup>3</sup>	Cedar Lane Water Service Commission October 31, 2022
Beddis Water	No Change	First 38 m <sup>3</sup> = \$3.10/m <sup>3</sup> Next 68 m <sup>3</sup> = \$6.30/m <sup>3</sup> >106 m <sup>3</sup> = \$8.50/m <sup>3</sup>	Beddis Water Service Commission October 31, 2022
Highland and Fernwood Water	No Change	First 38 m <sup>3</sup> = \$0.64/m <sup>3</sup> Next 68 m <sup>3</sup> = \$2.00/m <sup>3</sup> >106 m <sup>3</sup> = \$5.13/m <sup>3</sup>	Fernwood and Highland Water Service Commission October 17, 2022
Maliview Sewer	No Change	\$1.75/m <sup>3</sup> of total water provided or delivered to the single family dwelling unit or equivalent served by the sewer connection to the CRD Highland Water System	Maliview Sewer Local Service Commission October 17, 2022
Fulford Water	Single Family Residential: No Consumption Charge Other: \$3.27/m <sup>3</sup> Minimum Consumption Charge per three months is \$393.04 per service connection.	Single Family Residential: No Consumption Charge Other: \$3.27/m <sup>3</sup> Minimum Consumption Charge per three months is \$370.10 per service connection.	Fulford Water Service Commission October 3, 2022

**Bylaw No. 4525:  
To Amend Salt Spring Island Liquid Waste, Sewer, and Water Fees and Charges**

Changes to Schedule "C" (1) Disposal Fees and Charges

Service Area	2023 Fees	2022 Fees	Committee/Commission Recommendation
Septage	\$104.49 per cubic metre (\$0.475 per imperial gallon)	\$100.09 per cubic metre (\$0.455 per imperial gallon)	Salt Spring Island Liquid Waste Disposal Local Service Commission October 7, 2022
Sewage	\$104.49 per cubic metre (\$0.475 per imperial gallon)	\$100.09 per cubic metre (\$0.455 per imperial gallon)	Salt Spring Island Liquid Waste Disposal Local Service Commission October 7, 2022



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## REPORT TO ELECTORAL AREAS COMMITTEE MEETING OF WEDNESDAY, DECEMBER 14, 2022

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**SUBJECT** Electoral Areas “Fire Regulation Bylaw No. 2”, Bylaw No. 4489

### **ISSUE SUMMARY**

The Capital Regional District (CRD) regulates open fire use within Electoral Area (EA) Fire Protection Service Areas through bylaws. An update to existing Bylaw No. 3452, “Fire Regulation Bylaw No. 1, 2007”, is introduced to better align with updated provincial regulations and to increase clarity for residents and fire departments.

### **BACKGROUND**

The CRD provides 11 fire protection services in Juan de Fuca (JdF) and Southern Gulf Islands (SGI) EAs. Under the *Wildfire Act*, local governments can regulate the use of open fire in established fire service areas for wildfire prevention and forest protection. Open burning occurs in recreational, household, cultural, and industrial contexts, but mishandling fire can lead to damaging wildfires. Regional District open burning bylaw regulations do not apply outside fire service areas of the Regional District, such as improvement districts or areas without fire protection and prevention services.

Fire Chiefs from JdF and SGI EAs have advocated for modernization of existing Bylaw No. 3452, “Fire Regulation Bylaw No. 1, 2007”. The previous bylaw employs non-standard fire definitions; is silent on common uses such as outdoor wood-fire ovens; and is inconsistent with recent *Wildfire Act* and *Open Burning Smoke Control Regulations* updates. Current fire regulations are challenging for residents and fire departments to interpret and apply.

The proposed bylaw (Appendix A) repeals Bylaw No. 3452 and puts in place a set of modern fire use regulations. Changes include:

- Enabling consistency with neighbouring jurisdictions and the Province;
- Clarifying powers of local Fire Chiefs to restrict fire use and high-risk industrial activities due to local conditions;
- Aligning local fire protection with provincial regulations, such as *Open Burning Smoke Control Regulations*;
- Including solid fuel appliances (e.g., outdoor wood-fire ovens) in the sphere of regulation.

Bylaw No. 4489 is the result of a comprehensive fire department consultation process. The effective date of this amendment is April 1, 2023.

A modernized Fire Regulation Bylaw requires corresponding updates to Bylaw No. 1857, “Capital Regional District Ticket Information Authorization Bylaw, 1990” (Appendix B) and Bylaw No. 3491, “Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 1, 2007” (Appendix C). No change to existing fees or charges is proposed. Fire services will continue to issue free permits to encourage public compliance.

A draft interpretive guide (Appendix D) on open burning and industrial activities is attached. If Bylaw No. 4489 is adopted, this guide will be finalized and included in a public communications strategy.

## **ALTERNATIVES**

### *Alternative 1*

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

- 1) That Bylaw No. 4489, “Fire Regulation Bylaw No. 2, 2022”, be introduced and read a first, second, and third time;
- 2) That Bylaw No. 4489 be adopted.
- 3) That Bylaw No. 4499, “Capital Regional District Ticket Information Authorization Bylaw, 1990, Amendment Bylaw No. 74, 2022”, be introduced and read a first, second, and third time;
- 4) That Bylaw No. 4499 be adopted.
- 5) That Bylaw No. 4523, “Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 2, 2022”, be introduced and read a first, second, and third time;
- 6) That Bylaw No. 4523 be adopted.

### *Alternative 2*

That the Electoral Area “Fire Regulation Bylaw No. 2”, Bylaw No. 4489 report be referred back to staff for additional information based on Electoral Areas Committee direction.

## **IMPLICATIONS**

### *Social & Environmental Implications*

Open fire use plays important roles in recreational, household, cultural, and industrial contexts. Local fire departments and the CRD FireSmart program collaborate to provide accessible alternatives to burning in EA communities, such as community chipping days. This bylaw provides a safe framework for the responsible use of open fire where reasonable alternatives are not available.

Air quality concerns from open burning are beyond the scope of this bylaw and the *Wildfire Act* and are regulated through provincial *Open Burning Smoke Control Regulations* and regional district nuisance bylaws, which permit the regulation of smoke and effluvia. However, this bylaw is focussed on fire regulation, and is intended to decrease wildfire damage by providing a safe framework for fire use in electoral area communities.

### *Financial Implications*

No change to fire department resources, staff time, or violation fees are anticipated due to adoption of this bylaw.

### *Legal Implications*

The CRD is empowered to regulate open fire use in fire service areas under the *Wildfire Act*. The proposed bylaw has undergone thorough internal and external legal review to ensure consistency with the legislative framework and enforceability.

## **CONCLUSION**

CRD bylaws provide regulations for responsible fire use within CRD EA Fire Protection Service Areas. The proposed Bylaw No. 4489 and its associated amending bylaws modernizes regulations within those services areas and ensures consistency with provincial legislation. If passed, the bylaw will come into force April 2023.

**RECOMMENDATION**

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

- 1) That Bylaw No. 4489, “Fire Regulation Bylaw No. 2, 2022”, be introduced and read a first, second, and third time;
- 2) That Bylaw No. 4489 be adopted.
- 3) That Bylaw No. 4499, “Capital Regional District Ticket Information Authorization Bylaw, 1990, Amendment Bylaw No. 74, 2022”, be introduced and read a first, second, and third time;
- 4) That Bylaw No. 4499 be adopted.
- 5) That Bylaw No. 4523, “Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 2, 2022”, be introduced and read a first, second, and third time;
- 6) That Bylaw No. 4523 be adopted.

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:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENTS**

Appendix A: Bylaw No. 4489, “Fire Regulation Bylaw No. 2, 2022”

Appendix B: Bylaw No. 4499, “Capital Regional District Ticket Information Authorization Bylaw, 1990, Amendment Bylaw No. 74, 2022”

Appendix C: Bylaw No. 4523, “Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 2, 2022”

Appendix D: Draft Guide to Fire Regulation Bylaw No. 2

CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4489

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**A BYLAW TO REGULATE OPEN BURNING WITHIN JUAN DE FUCA ELECTORAL AREA AND  
SOUTHERN GULF ISLAND ELECTORAL AREA**

\*\*\*\*\*

**WHEREAS:**

- A. By Bylaw No. 3452, "Fire Regulation Bylaw No. 1, 2007", the Capital Regional District continued a program of fire regulation in the district pursuant to its powers under the *Local Government Act*; and
- B. The Capital Regional District Board wishes to enact a revised bylaw that relates to the lighting, fuelling and use of open fires for fire prevention and forest protection in the Juan de Fuca and Southern Gulf Islands Electoral Areas where local fire services are operated;

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

**PART I – DEFINITIONS:**

- 1. In this bylaw:
  - a. "BC Wildfire Act" or "Wildfire Act" refers to the *Wildfire Act*, SBC 2004, c 31 as amended.
  - b. "BC Wildfire Regulation" refers to *Wildfire Regulation*, BC Reg 38/2005, as amended and enacted under the *Wildfire Act*, SBC 2004, c 31.
  - c. "BC Wildfire Service" means that part of the government of British Columbia that is mandated to administer the *BC Wildfire Act* and BC Wildfire Regulation.
  - d. "Campfire" is defined by the BC Wildfire Regulation as amended from time to time.
  - e. "Category 2 Open Fire" is defined by the BC Wildfire Regulation as amended from time to time.
  - f. "Category 3 Open Fire" is defined by the BC Wildfire Regulation as amended from time to time.
  - g. "Coastal Fire Centre – South Island" means fire centre created by the BC Wildfire Service to administer the *BC Wildfire Act* and BC Wildfire Regulation within the Regional District.
  - h. "Commercial Incinerator" means any device constructed or erected, designed and used for the destruction by fire of industrial, commercial or institutional waste materials, but does not include any crematorium operated in accordance with the *Cremation, Interment and Funeral Services Act*, SBC 2004, c.35.
  - i. "Demolition Waste" means any waste resulting from or produced by the complete or partial destruction or tearing down of any structure other than material prohibited in the *Open Burning Smoke Control Regulation*.
  - j. "Domestic Waste" means food waste and household materials targeted for disposal, other than paper or cardboard.
  - k. "Domestic Incinerator" means any metal or masonry container, including a burn barrel, fitted with a metal screen or grill of not more than 9.5 millimetres (3/8") mesh to restrict any sparks or flying debris and used to serve any dwelling unit occupied by a single family or any two-family dwelling.

- l. "Fire Chief" means the Fire Chief for the applicable Service Area or the Fire Chief's designate.
  - m. "Fire Chief's Designate" means a member of the fire department designated by the Fire Chief and acting on the authority of the Fire Chief in the absence of, or as directed by, the Fire Chief.
  - n. "Fire Danger Rating" for a Service Area is as defined by the Coastal Fire Centre – South Island from time to time.
  - o. "Fire Department" means the volunteer fire department established for a Service Area by bylaw of the Regional District or by agreement between the Regional District and a duly incorporated society that by contract provides fire service within a Service Area.
  - p. "Fire Fighting Hand Tool" means a shovel, axe, Pulaski, hand tank pump or fire extinguisher.
  - q. "Fuel Break" means a barrier or a change in fuel type or condition, or a strip of land that has been modified or cleared to prevent fire spread.
  - r. "Incinerator" includes a Commercial Incinerator and a Domestic Incinerator.
  - s. "Industrial activity" is as defined by the *BC Wildfire Act* as amended from time to time.
  - t. "Mill waste" includes bark, chips, sawdust and any other discarded wood products piled for uses other than residential gardens, parks, trails and playgrounds.
  - u. "Open Burning" and "Open Fire" have the same meaning, referring to any outdoor burning, of any material that is not contained within a building or certified Incinerator, and without limitation includes a Category 2 Open Fire, a Category 3 Open Fire, and a Campfire.
  - v. "Open Burning Smoke Control Regulation" means the *Open Burning Smoke Control Regulation*, BC Reg 152/2019, as amended, under the *Environmental Management Act*.
  - w. "Regional District" means the Capital Regional District.
  - x. "Service Area" means a fire protection and suppression service area within the Regional District established under the *Local Government Act*.
  - y. "Solid Fuel Burning Appliance" means an appliance installed outside of a dwelling unit that burns solid fuel and is used for cooking or heating purposes. These appliances include, but are not limited to, barbecues, chimineas, pizza ovens, hot tubs, food smokers, or any other devices, that burn solid fuel in an outdoor environment.
  - z. "Utility" means the works or facilities for the provision of a service provided by a public authority, a public utility or a similar person, such as water, electricity, natural gas, septic, transportation or communication.
  - aa. "Waste" means as defined by the *Environmental Management Act* as amended from time to time.
- 1.2 Except as otherwise defined in this bylaw, words and phrases herein are to be interpreted consistently with the *Community Charter*, the *Local Government Act*, the *Open Burning Smoke Control Regulation* and the *Fire Services Act* or *Fire Safety Act*, as the context and circumstances may require.

## **PART II - APPLICATION**

2. This bylaw applies within Service Areas of the Regional District.

**PART III – SEVERABILITY**

3. If any section, subsection, paragraph, clause, word or phrase in this bylaw is declared invalid by a court of competent jurisdiction, the invalid portion is severed and the remainder of this bylaw remains valid and effective.

**PART IV - GENERAL REGULATIONS****4.1 No person shall:**

- (a) in any way hinder any member of the Fire Department or any other person under the direction of the Fire Chief at any fire;
- (b) enter any burning building or within the lines established by the Fire Chief marked by ropes, guards, tape or other means at a fire, without the permission of the Fire Chief;
- (c) drive, run over or into any fire hose or any other equipment with any vehicle unless bridging adequate to protect the hose or other equipment is provided for that purpose;
- (d) place or maintain any object or matter on a street, or road which interferes with free access or approach to any fire hydrant, stand-pipe or reservoir which is available for fire protection;
- (e) damage, render unusable or interfere with any equipment, Utility or property which is owned, leased or used by the Fire Department.

- 4.2 An owner or occupier of real property in a Service Area shall remove any matter or thing situated in or on any building or premises which, in the opinion of the Fire Chief, is a fire hazard or increases the danger of fire.

- 4.3 An owner of any unoccupied building shall ensure that it is properly secured against entry by unauthorized persons.

**General Regulations on Open Fires**

- 4.4 A person must not ignite, burn or continue to burn an Open Fire except in accordance with this Bylaw, the *Open Burning Smoke Control Regulation*, and the *Wildfire Act and Regulation*. Where a provision of any such enactments is stricter than that of another, the stricter provision applies.

- 4.5
- a) No person shall ignite, burn or continue to burn an Open Fire of any kind while a prohibition on Open Fires or the category of Open Fire ordered by the Province or by the Fire Chief or other Officer of the Fire Department for the Service Area is in effect.
  - b) No person shall ignite, burn or continue to burn an Open Fire without a valid and continuing permit issued by the Fire Chief or the Fire Chief's Designate.
  - c) A person must comply with the terms of any permit and any direction by the Fire Chief written on or further to the permit, or any further restriction on the fire imposed under section 7 of this Bylaw.
  - d) If a permit is cancelled, expires, or is not complied with, a person must not ignite, burn, or continue to burn an Open Fire and must extinguish such Open Fire forthwith.
  - e) Prior to igniting an Open Fire, undertaking an Industrial Activity, using a Solid Fuel Appliance or igniting a fire in an Incinerator, the person must determine whether there are any restrictions or prohibitions issued under section 7 of this Bylaw.

**Permit Requirements for the Categories of Open Fires**

- 4.6 a) A Campfire does not require a permit, unless a Fire Chief or Fire Chief's designate invokes a permit requirement.
- b) A Category 2 Open Fire requires a permit, unless a Fire Chief or Fire Chief's designate rescinds the permit requirement.
- c) A Category 3 Open Fire requires a permit year round.

**Fire Safety and Supervision**

- 4.7 Every person who ignites, burns or uses an Open Fire must ensure all of the following requirements are met:
- (a) the person must comply with any and all requirements of this Bylaw that pertain to the Open Fire;
  - (b) the person must comply with any and all requirements contained in any permit issued for the Open Fire under this Bylaw;
  - (c) the person must comply with any further restrictions on Open Fires and the relevant category of Open Fire issued by the Fire Chief;
  - (d) the person must ensure that the fire is authorized or permitted by the land owner, and if the person is not the owner of the land where the fire is to occur, the person must provide proof to the Fire Chief's satisfaction of the land owner's consent;
  - (e) the person must maintain an adequate Fuel Break around the burn area of sufficient size to ensure that the Open Fire originating in the burn area does not escape the burn area;
  - (f) the person must ensure that the fire is watched and patrolled by a competent person to prevent fire spread or escape;
  - (g) the person must ensure that the person watching the fire has a Fire Fighting Tool, ready access to water, and a container carrying at least 8 litres of water;
  - (h) the person must ensure that before leaving the area, the fire is completely extinguished; and
  - (i) if the fire spreads beyond the burn area or otherwise becomes out of control, the person must immediately report the fire to the Fire Department; attempt to control the spread and to extinguish the fire, and comply with all directions of the Fire Chief.

**Prohibited Materials**

- 4.8 No person shall ignite or burn, or cause, allow or suffer to be burned or used as fuel, any of the following material, whether in an Open Fire or in an Incinerator or other container:
- (a) rubber, tires, plastic materials, or polystyrene foam;
  - (b) fiberglass or other fibre-reinforced materials;
  - (c) asphalt or asphalt products or tar paper;
  - (d) construction materials, drywall or demolition waste;
  - (e) carpets, furniture, appliances or domestic waste;



- (f) railway ties;
- (g) treated lumber or wood products;
- (h) manure, animal carcasses or waste from animal slaughtering;
- (i) paint, varnish, used oil, or fuel or lubricant containers;
- (j) batteries or electrical wire; or
- (k) biomedical or other hazardous waste.

### **Compliance with Orders**

- 4.9 A person who has been ordered or directed by the Fire Chief or the Fire Chief's Designate to reduce, suspend or cease activity under this Bylaw must immediately do so, and in a safe manner carry out all measures and comply with all conditions and restrictions for ceasing or resuming the activity as directed by the Fire Chief or the Fire Chief's Designate.

## **PART V – ADDITIONAL REGULATIONS FOR CATEGORIES OF OPEN FIRES, SOLID FUEL APPLIANCES, INCINERATORS, INDUSTRIAL ACTIVITIES AND MILL WASTE**

### **Campfires**

- 5.1 In addition to complying with the general regulations on Open Fires contained in this Bylaw, a person who lights, ignites or maintains a Campfire must ensure the Campfire burns material in one pile no larger than 0.5 m in height and 0.5 m in width.
- 5.2 A person must not light, ignite or maintain a Campfire:
- (a) within 7.5 metres of any building, structure, fence, property line;
  - (b) within 3 metres of any driftwood, dry vegetation, grass or any other combustible material;
  - (c) to dispose of Domestic Waste; or
  - (d) if a Campfire prohibition has been established by the Fire Chief or the Fire Chief's Designate.

### **Category 2 Open Fires**

- 5.2.2 In addition to complying with the general regulations on Open Fires contained in this Bylaw, no person shall conduct a Category 2 Open Fire:
- (a) within 10 metres of any building, structure, fence, tree or hedge;
  - (b) that is fuelled by green debris or leaves;
  - (c) for more than 4 consecutive days; or
  - (d) by adding additional materials to a fire within two (2) hours of sunset of each day of the fire.

### **Category 3 Open Fires**

- 5.2.3 For certainty before lighting, igniting or maintaining a Category 3 Open Fire, a person must comply with the general regulations on Open Fires contained in this Bylaw.

**Category 3 Open Fires – Exemption from the Open Burning Smoke Control Regulation**

- 5.2.4 Where a Category 3 Open Fire is for burning vegetative debris less than 10 cm in diameter as defined in section 5(a) of the *Open Burning Smoke Control Regulation*, no person shall conduct such open fire:
- (a) within 15 metres of any building, structure, fence, tree or hedge;
  - (b) that is fuelled by green debris or leaves;
  - (c) for more than 4 consecutive days; or
  - (d) by adding additional materials to a fire within two (2) hours of sunset of each day of the fire.

**Solid Fuel Appliances**

- 5.3 Before installing, erecting, or operating a Solid Fuel Burning Appliance, a person must first obtain a permit issued by the Fire Chief or Fire Chief's Designate, and must pay the applicable fees, if any.
- 5.4 A person shall only install, erect or operate a Solid Fuel Burning Appliance in accordance with any:
- (a) permit requirements; or
  - (b) additional restrictions or prohibitions pertaining to the installation and operation of Solid Fuel Appliances issued by a Fire Chief or Fire Chief's Designate.

**Incinerators**

- 5.5 Before installing, erecting or operating an Incinerator, or lighting, igniting or maintaining any fire in an Incinerator, a person must first obtain a permit issued by the Fire Chief or Fire Chief's Designate, and must pay the applicable fees, if any.
- 5.6 A person shall only install, erect or operate a Commercial or Domestic Incinerator in accordance with any:
- (a) permit requirements; or
  - (b) additional restrictions or prohibitions pertaining to the installation and operation of Incinerators.
- 5.7 The owner of an Incinerator shall ensure that:
- (a) the Incinerator is maintained in a condition that provides for the proper combustion of any material burned;
  - (b) while it is in use a competent person continuously supervises any burning and ensures sufficient fire extinguishing equipment necessary for fire control is available;
  - (c) a Domestic Incinerator is located at least:
    - i. 1.5 metres from any combustibles such as grass, shrubbery or wooden fencing; and
    - ii. 7.6 metres from any building or fuel storage area;
  - (d) a Commercial Incinerator is located at least:
    - i. 3 metres from any combustibles such as grass, shrubbery or wooden fencing; and
    - ii. 10 metres from any building or fuel storage area.

**Industrial Activities**

- 5.8 Where the Fire Chief or Officer of the Fire Department has prohibited or restricted an Industrial Activity, no person shall initiate or continue such activity.

**Mill Waste**

- 5.9 Where any person deposits any mill waste, he or she shall ensure that:
- (a) the Fire Chief is notified at least forty-eight (48) hours before the deposit;
  - (b) no deposit has a depth greater than 3 metres; and
  - (c) within one week, cover material at least 305 millimetres in thickness is applied to any deposit unless otherwise approved by the Fire Chief.

**PART VI - EXEMPTION**

- 6.1 This bylaw does not apply to:
- (a) a fire used for the training of firefighters;
  - (b) a burn carried out by or under the direction of the Wildfire Service (British Columbia) pursuant to the *Wildfire Act*; or
  - (c) a burn authorized by the Fire Chief to reduce fuel build-up or decrease a fire hazard.
- 6.2 As an exception to the permit requirements contained in sections 5.2.2 [*Category 2 Open Fires*], 5.3 [*Solid Fuel Burning Appliances*], 5.5 [*Incinerators*], and 5.8 [*Industrial Activities*], a Fire Chief or Fire Chief's Designate can institute, rescind, or re-institute a permit requirement for one or more of such fire types, within all or a portion of the service area that the Fire Chief or Fire Chief's Designate has responsibility for.
- 6.3 In relation to sections 4.6(a) and 5.1 [*Campfires*], a Fire Chief or Fire Chief's Designate may institute or rescind a permit requirement for campfires in all or part of a portion of the service area that the Fire Chief or Fire Chief's Designate has responsibility for, where, in their opinion, institution of permit requirements are necessary but a ban is not yet appropriate.
- 6.4 (a) When a permit requirement is rescinded, existing permits continue in force and the holder of such a permit is expected to comply with such existing permits and conditions on them, unless they receive written authorization from the Fire Chief or the Fire Chief's Designate cancelling their existing permit and confirming no permit is needed for their activity.
- (b) When a permit requirement is required, existing activities conducted or currently in-progress without a permit require a permit to continue.

**PART VII - POWERS OF THE FIRE CHIEF AND OFFICERS**

- 7.1 The Fire Chief for each Service Area is authorized to administer and enforce this Bylaw within that Service Area.
- 7.2 The Fire Chief or Officer of the Fire Department may:
- (a) enter on property and inspect premises to ascertain whether the provisions of this bylaw are being met;
  - (b) take measures to prevent or suppress the spread of Open Fires;

- (c) issue orders directing the owners or occupiers of premises to bring Open Fires into compliance with this bylaw or with a permit under this bylaw;
- (d) issue permits for Open Fires, Solid Fuel Appliances and Incinerators under this bylaw, and impose such conditions, restrictions and requirements as the Fire Chief or Fire Chief's Designate deems to be warranted to avoid the creation of a hazard or nuisance, due to weather, wind or other circumstance related to Fire Safety;
- (e) In writing, refuse to issue a permit for an Open Fire, Solid Fuel Appliance or Incinerator if in the opinion of the Fire Chief or Fire Chief's Designate the proposed activity is likely to create a hazard or nuisance because of adverse weather, wind or other circumstance;
- (f) suspend or cancel a permit, and impose conditions on resuming activity that was suspended, if:
  - i. the Fire Chief or Fire Chief's Designate believes the permitted activity cannot be carried out safely or without creating a nuisance due to changes in weather, wind or other circumstances related to fire safety changing since permit issuance, or is not being carried out safely or in accordance with permit conditions, an order under paragraph (c), a provision of this bylaw, or another applicable enactment; or
  - ii. the Fire Chief or Fire Chief's Designate has received a complaint by a person in relation to the emission of smoke, sparks, ash, soot, cinders or fumes, and considers that fire extinction or control measures are warranted to address a nuisance or undue irritation or annoyance to other persons;
- (g) impose additional conditions or restrictions on any permit or class of permits if in the opinion of the Fire Chief or Fire Chief's Designate weather, wind or other circumstances related to fire safety have changed since the issuance of the permit, and the conditions or restrictions are required to address the changed circumstances;
- (h) authorize an Open Fire to reduce fuel build-up or decrease a fire hazard;
- (i) restrict or prohibit any Open Fire, and impose a ban on all Open Fires for a period of time (including Open Fires for which permits have been issued), if the Fire Chief considers the Fire Danger Rating warrants the restriction, prohibition or ban;
- (j) restrict or prohibit any Industrial Activity, if the Fire Chief considers the restriction or prohibition is necessary due to weather, wind or other circumstance related to fire safety;
- (k) where, in the opinion of the Fire Chief, an Incinerator or Solid Fuel Appliance is likely to create or become a fire hazard due to damage, deterioration, lack of maintenance, construction or location, or due to adverse, weather, wind or other circumstance related to fire safety, the Fire Chief may order the owner of the Incinerator or Solid Fuel Appliance to:
  - i. alter, renovate, repair or relocate the Incinerator or Solid Fuel Appliance, or
  - ii. discontinue its use.

This section 7.2(k) applies regardless of whether a permit has been issued for the Incinerator or Solid Fuel Appliance.

- 7.3 A person must not obstruct, prevent or interfere with the Fire Chief or Fire Chief's Designate acting under the authority of the Fire Chief from conducting an inspection pursuant to this bylaw.

**PART VIII – OFFENCE AND PENALTY**

8.1 A person who:

- (a) contravenes this bylaw;
- (b) causes or allows any act or thing to be done in contravention of this bylaw; or
- (c) fails or neglects to do anything required under this bylaw;

commits an offence, and where the offence is a continuing one, each day that the offence continues amounts to a separate offence.

8.2 Any person who violates any provision of this bylaw shall be liable, upon summary conviction, to a fine of not less than \$50.00 and not greater than \$2,000.00, and such other amounts as may be ordered by the court for the costs of investigation and prosecution, and to compensate the District or another person for damages or loss sustained resulting from the commission of the offence.

8.3 The Fire Chief, a bylaw enforcement officer, a peace officer, and a police officer as an agent of the Regional District are authorized to enter onto and into property for the purposes established by sections 284 and 419 of the *Local Government Act* in accordance with the provisions of section 16 of the *Community Charter* or other conditions of entry, if any, set out in the *Local Government Act*, *Community Charter* or another enactment.

8.4 If a Fire Chief finds that any provision of this bylaw has been contravened or has not been complied with, or has been complied with improperly or only in part, or that conditions exist in or upon a building or property to which the bylaw applies and which, in his opinion, constitutes a fire hazard or otherwise constitutes a hazard to life or property the Fire Chief may:

- (a) make to the owner or occupier of the building or property such recommendations as deemed as necessary to correct the contravention or to ensure compliance with this bylaw or to remove the hazards referred to in the bylaw or,
- (b) make orders with respect to any of the matters referred to in this bylaw in accordance with the *Local Government Act* or, where applicable, the *Fire Services Act*.

8.5 An order made under this bylaw shall be in writing and shall be directed to the owner, occupier or lessee of the building or property in respect of which the order is made or to both.

8.6 An order made under this bylaw shall be served by:

- (a) delivering it or causing it to be delivered to the person to whom it is directed, or
- (b) sending the order by return registered mail to the last known property owner.

8.7 Where an owner or occupier is in default of an order made pursuant to this bylaw, the Regional District, by its workers or others, may enter the property and effect such work as required in the order at the expense of the owner or occupier so defaulting in accordance with section 418 of the *Local Government Act*, and any charges so incurred and remaining unpaid on December 31 of that year shall be added to and form part of the taxes payable on the real property as taxes in arrears.

**PART IX – NO LIABILITY**

9.1 This bylaw shall not create a duty of the Regional District, its officers, employees or persons acting on its behalf pursuant to this Bylaw, including Fire Chiefs and Fire Chief's Designates, concerning enforcement or failure to enforce any matter contained in this bylaw.

9.2 No act, error, omission or other neglect of the Regional District in relation to any matter contained in this bylaw shall give rise to a cause of action or liability to any person.

**PART X REPEAL AND CITATION**

10.1 Effective April 1, 2023, Bylaw No. 3452, "Fire Regulation Bylaw No. 1, 2007", is repealed.

10.2 Effective April 1, 2023, this Bylaw No. 4489 comes into force.

10.3 This Bylaw may be cited for all purposes as "Fire Regulation Bylaw No. 2, 2022".

READ A FIRST TIME THIS	th	day of	2022
READ A SECOND TIME THIS	th	day of	2022
READ A THIRD TIME THIS	th	day of	2022
ADOPTED THIS	th	day of	2022

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CHAIR

---

CORPORATE OFFICER

CAPITAL REGIONAL DISTRICT
BYLAW NO. 4499

\*\*\*\*\*

A BYLAW TO AMEND BYLAW NO. 1857, "CAPITAL REGIONAL DISTRICT
TICKET INFORMATION AUTHORIZATION BYLAW, 1990"

\*\*\*\*\*

WHEREAS:

- A. The Capital Regional District Board is adopting Bylaw No. 4489, "Fire Regulation Bylaw No. 2, 2022", and replacing Bylaw No. 3452, "Fire Regulation Bylaw No. 1, 2007"; and
B. The Board wishes to amend Bylaw No. 1857 to reflect the provisions of Bylaw No. 4489;

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

- 1. Effective April 1, 2023:
(a) In Schedule 1 of Bylaw No. 1857, "Capital Regional District Ticket Information Authorization Bylaw, 1990", the reference at section 32 to "Fire Regulation Bylaw No. 1, 2007" is replaced with "Fire Regulation Bylaw No. 2, 2022";
(b) In Schedule 1 of Bylaw No. 1857, inserting at section 32 in column 2, Designated Bylaw Enforcement Officer, the words "Peace Officer" after the words "Royal Canadian Mounted Police Officer"; and
(c) By replacing Schedule 33 to Bylaw No. 1857 with the Schedule 33 attached to this Bylaw.
2. This Bylaw may be cited for all purposes as "Capital Regional District Ticket Information Authorization Bylaw, 1990, Amendment Bylaw No. 74, 2022".

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 33 TO BYLAW NO. 1857**  
**FIRE REGULATION BYLAW NO. 2, 2022**

WORDS OR EXPRESSIONS DESIGNATING OFFENCE	SECTION	FINE
1. Hinder officer	4.1(a)	\$200.00
2. Cross fire line	4.1(b)	\$100.00
3. Drive over hose or equipment	4.1(c)	\$500.00
4. Obstruct hydrant	4.1(d)	\$100.00
5. Damage fire department property	4.1(e)	\$300.00
6. Fail to remove fire hazard	4.2	\$100.00
7. Fail to properly secure unoccupied building	4.3	\$100.00
8. Open Fire while prohibited	4.5(a)	\$200.00
9. Open Fire without permit	4.5(b)	\$100.00
10. Breach permit conditions	4.5(c)	\$200.00
11. Cat 3 Fire without permit	4.6(c)	\$300.00
12. Fail to maintain fuel break	4.7(e)	\$100.00
13. Fail to monitor fire	4.7(f)	\$100.00
14. Inadequate equipment	4.7(g)	\$100.00
15. Failure to extinguish an open fire	4.7(h)	\$300.00
16. Failure to notify fire department	4.7 (i)	\$300.00
17. Burn Prohibited Material	4.8	\$500.00
18. Non-Compliance Order	4.9	\$300.00
19. Improper Campfire - size	5.1	\$100.00
20. Improper Campfire - structure	5.2(a)	\$100.00
21. Improper Campfire - combustible material	5.2(b)	\$100.00
22. Improper Campfire - domestic waste	5.2(c)	\$100.00



23. Improper Cat 2 Fire - location	5.2.2(a)	\$200.00
24. Improper Cat 2 Fire - green debris	5.2.2(b)	\$200.00
25. Improper Cat 2 Fire - duration	5.2.2(c)	\$200.00
26. Improper Cat 2 Fire - materials	5.2.2(d)	\$200.00
27. Improper Cat 3 Fire - location	5.2.4(a)	\$200.00
28. Improper Cat 3 Fire - green debris	5.2.4(b)	\$200.00
29. Improper Cat 3 Fire - duration	5.2.4(c)	\$200.00
30. Improper Cat 3 Fire - materials	5.2.4(d)	\$200.00
31. Appliance without permit	5.3	\$100.00
32. Appliance contrary to permit	5.4	\$100.00
33. Incinerator without a permit	5.5	\$100.00
34. Incinerator contrary to permit	5.6	\$100.00
35. Incinerator – Unmaintained	5.7(a)	\$100.00
36. Incinerator – Supervision	5.7(b)	\$100.00
37. Incinerator – Location	5.7(c)	\$100.00
38. Commercial Incinerator – Location	5.7(d)	\$100.00
39. Industrial activity contrary to notice	5.8	\$300.00
40. Mill waste – failure to notify	5.9(a)	\$100.00
41. Mill waste – depth	5.9(b)	\$100.00
42. Mill waste – cover	5.9(c)	\$100.00

CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4523

\*\*\*\*\*

A BYLAW TO ESTABLISH PERMIT FEES FOR FIRE REGULATION  
BYLAW NO. 2, 2022 (BYLAW NO. 4489)

\*\*\*\*\*

**WHEREAS:**

- A. Under Bylaw No. 3491, "Capital Regional District Fire Protection Services Fees and Charges Bylaw No.1, 2007", the Regional Board established fees and charges for certain types of permits available under its fire protection services, regulated by Bylaw No. 3452, "Fire Regulation Bylaw No. 1, 2007"; and
- B. The Board wishes to amend Bylaw No. 3491 to reflect updated fee amounts and the repeal and replacement of Bylaw No. 3452 with Bylaw No. 4489, "Fire Regulation Bylaw No. 2, 2022";

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

- 1. Effective April 1, 2023:
  - (a) the Board hereby authorizes and imposes the fees and charges set out in the Schedule "A" to this Bylaw for Bylaw No. 4489, "Fire Regulation Bylaw No. 2, 2022"; and
  - (b) Bylaw No. 3491, "Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 1, 2007", is hereby repealed.
- 2. This Bylaw may be cited for all purposes as "Capital Regional District Fire Protection Services Fees and Charges Bylaw No. 2, 2022".

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 "A"

PERMIT CHARGES

<b>Fire Department</b>	<b>Class</b>	<b>Fee</b>
East Sooke Fire	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0
North Galiano	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0
Otter Point	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0
Pender Island	"Campfire"	\$ 5
	"Category 2"	\$ 5
	"Category 3"	\$25
	"Appliance"	\$ 0
Port Renfrew	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0
Shirley	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0
South Galiano	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0
Willis Point	"Campfire"	\$ 0
	"Category 2"	\$ 0
	"Category 3"	\$ 0
	"Appliance"	\$ 0

# Guide to Fire Regulation Bylaw No.2

**DRAFT**



Capital Region Electoral Area  
Fire Departments

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## Electoral Area Fire Protection

The CRD provides fire protection services in many Electoral Area communities through a network of commissions, societies, and service contracts. Most fire department members are volunteers from within the communities they serve.

## Municipal Fire Protection

Municipalities are responsible for provision of fire protection through their local fire departments.

## CRD Fire Dispatch

The CRD provides emergency fire dispatch for Juan de Fuca, Salt Spring Island, Southern Gulf Islands, Metchosin, Sooke, Highlands and Langford. The service operates out of Langford Fire Hall #1 utilizing contracted Langford Fire Department staff. Back-up services for the fire dispatch are provided through the BCAS dispatch centre in Langford.

The CRD Board delegates authority to the Planning, Transportation, and Protective Services Committee (PTPS) for emergency fire dispatch for the three the Juan de Fuca, Salt Spring Island, Southern Gulf Islands, Metchosin, Sooke, Highlands and Langford.



# Introduction

In 2019, representative fire chiefs from CRD electoral area fire departments requested the Fire Regulation Bylaw No.1, 2007 be updated. A review confirmed that recent provincial updates to wildfire and waste management legislation effectively rendered some sections of the CRD bylaw invalid. Fire Regulation No.2, 2022 is aligned with all applicable and current provincial legislation and will remain effective and valid through future updates to provincial legislation.

## Understanding what's new for Fire Regulation #2

- Better alignment with provincial regulations related to fire prevention and forest protection
- Enhanced autonomy for fire departments to implement or rescind fire prevention measures within their defined service areas
- Improved clarity around permit and enforcement programs
- Introduction of permits for outdoor wood-burning appliances

This guide is designed to help with the interpretation of **CRD Fire Regulation Bylaw No.2, 2022**, and contains information specific to:

- Communities affected by the bylaw
- Explanation of the fire danger rating system
- Categories of open fires (campfires, category 2 and 3 open fires)
- Outdoor wood-burning appliances (chimineas, pizza ovens, wood-burning hot tubs)
- Industrial and high-risk activities
- Prohibited materials
- Powers of fire chiefs
- Enforcement of the bylaw (approaches and tools)



# Application of Fire Regulation No.2

CRD Fire Regulation Bylaw No.2 is applicable in specified fire protection service areas within the Juan de Fuca and Southern Gulf Island electoral areas.

Juan de Fuca communities with CRD fire protection areas include:

- Willis Point
- Otter Point
- East Sooke
- Shirley
- Port Renfrew

Southern Gulf Islands with CRD fire protection services areas include:

- Pender Island
- North Galiano Island
- South Galiano Island
- Saturna Island

This bylaw does not apply to First Nation communities, municipalities, or improvement districts within the CRD.

In addition to this bylaw, the **BC Wildfire Act** and Wildfire Regulation apply in all non-defined areas within the CRD. This includes any area not located within a defined CRD fire protection area, municipality, or improvement district.





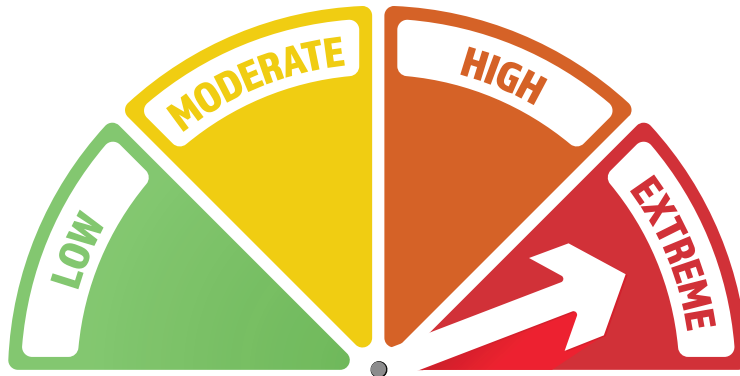
## How is the Fire Danger Rating Determined?

The weather significantly impacts how wildfires start, how aggressively they spread and how long they burn. By referencing provincial and federal weather stations in your local area, fire chiefs, or designates, will determine the appropriate fire danger rating.

The BC Wildfire Service operates about 260 weather stations, which send hourly reports. These observations, supplemented by data from other agency stations, support fire weather forecasting.

This information is used for making fire prevention, preparedness and suppression, and other general fire management decisions.





## Fire Danger

### In case of fire call 911



#### Low:

Forest fuels are drying, and there is an increased risk of surface fires. Therefore, carry out any forest activities with caution.



#### Moderate:

Fires may start easily and spread quickly, with minimal involvement of deeper fuel layers or larger fuels.



#### High:

Forest fuels are very dry, and the fire risk is serious. New fires may start easily, burn vigorously, and challenge fire suppression efforts. Extreme caution must be used. Open burning and industrial activities may be restricted.



#### Extreme:

Extremely dry forest fuels, and the fire risk is severe. New fires will start easily, spread rapidly, and challenge fire suppression efforts. General forest activities may be restricted, including open burning, industrial activities and campfires.



# General Fire Safety Regulations

All fires must be authorized by the land owner.



Establish a fuel break around Category 2 or 3 burn or **fire guard** around with a **campfire**.



Ensure someone is **continuously monitoring the fire** so it does not spread beyond its intended size. At least one person must watch the fire at all times and be equipped with a firefighting hand tool, at least 8 litres of water, or ready access to water.



Determine if any **restrictions or prohibitions** for the service area before igniting an open fire, undertaking an industrial activity, using a solid fuel appliance or igniting a fire in an incinerator.



Ensure the fire is **authorized or permitted** by the landowner.



Ensure the fire is **completely extinguished** before leaving the area.



# Categories of Open Fires

The CRD covers a large and geographically diverse area. Therefore, decisions on when and where to implement fire bans and restrictions are to be made by the fire chiefs appointed to defined fire protection areas.

Multiple factors are considered when assessing wildfire hazards and deciding whether to implement an open fire ban, including current and forecasted weather conditions and the availability of firefighting resources.

**Knowing your category before you burn.**



**Category 1**



**Category 2**



**Category 3**

## Campfires

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- A campfire is any fire smaller than 0.5 metres high by 0.5 metres wide (a fire larger than this is considered a Category 2 fire).
- Any person may use a campfire for recreational purposes or by a First Nation for ceremonial purposes.

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### Regulations

- CRD Fire Regulation Bylaw 2 is the regulation to be administered by fire chiefs and followed by persons who ignite a campfire campfire operators. A campfire ban or restriction implemented within the Coastal Fire Centre in the surrounding area of a CRD fire service area does not automatically apply within the defined CRD fire service area. It is the discretion of the fire chief, or fire chief's designate to follow, or not follow any campfire bans or restrictions that have been applied or rescinded by the Coastal Fire Centre.

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### Permit Requirements

- Generally, a permit for a campfire is not required. However, the fire chief, or fire chief's designate, has the discretion to establish or rescind permit requirements for campfires within their defined fire service area.
- It is not recommended to charge a fee for a campfire permit.

---

### Setbacks

- At least 7.5 metres from any building, structure, fence or property line.
- At least 3 metres from any trees, shrubs, structures and debris.

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### Campfires

- Obtain a permit from the fire department when required for the service area.
- Avoid having a campfire when it's windy.
- Never leave a campfire unattended for ANY amount of time.
- Never use a campfire for the disposal of domestic waste or prohibited materials.
- Never ignite a campfire if a campfire ban is in place.

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### Enforcement

- A fire chief, or fire chief's designate, is responsible for enforcing campfire regulations within their service area.
  - Educating people on campfire safety and current restrictions is key to gaining compliance. Issuing warnings or Municipal Ticket Information should always be a last resort.
- 

*1. If all the vegetative debris open burned is branches or other pieces of vegetative debris, with or without leaves, each branch or piece of which is less than 10 cm in diameter but of which at least some of the individual branches or pieces are 3 cm or greater, only sections 9, 12 and 30 of the Open Burning Smoke Control Regulation apply.*

## Category 2 Fire



- A Category 2 (CAT 2) fire is larger than a campfire and used for disposing of vegetative debris. A landowner or occupant that ignites a CAT 2 fire must follow any applicable CRD and Province of BC regulations.
- This category refers to open fires, other than a campfire, that burn:
  - Material in one pile not exceeding 2 metres in height and 3 metres in width.
  - Material concurrently in two piles, each not exceeding 2 metres in height and 3 metres in width.
  - Stubble or grass over an area that does not exceed 0.2 hectares.

### Regulations

- CRD Fire Regulation Bylaw No. 2; and the [Open Burning Smoke Control Regulation](#) (OBSCR), are to be followed, where applicable.
- The following vegetation size exemptions for agricultural or domestic purposes apply.

### Open Burn Smoke Control Regulations (OBSCR)

- If all the vegetative debris is under 3 cm in diameter, an operator is exempt from the OBSCR.
- If all vegetative debris is between 3 cm and 10 cm in diameter, the operator is exempt from most sections<sup>1</sup> of the OBSCR with the following conditions:
  - It can burn if the collected debris is from within 5 km of the burn site and there are no burn bans.
  - If all the vegetative debris open burned is branches or other pieces of vegetative debris, with or without leaves, of which at least some of the individual branches or pieces are 10 cm or greater, the Open Burning Smoke Control Regulation applies.
- Note: A fire chief, or fire chief's designate, does not have the discretion to exempt the requirements to follow the Open Burning Smoke Control Regulation except under specified circumstances (e.g. FireSmart activities).

### Permit Requirements

- Generally, a permit for a Category 2 fire is required. However, fire chief or fire chief's designate has the discretion to establish or rescind permit requirements for Category 2 fires within their defined fire service area.
- It is not recommended to charge a fee for a Category 2 permit.

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## Setbacks

- At least 10 metres from any building, structure, fence, tree or hedge or property line.

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## Fire Operators

- Obtain a permit from the fire department if required for the service area.
- Ensure that every reasonable alternative for reducing, reusing or recycling the vegetative debris is used to minimize the amount being open burned.
- If required, follow the Open Burning Smoke Control Regulation, including the [Venting Index for Southern Vancouver Island](#).
- [Information Fact Sheet for All Open Burners](#)
- Avoid conducting an open fire when it's windy.
- Choosing a proper location.
- Do not burn green debris or leaves.
- Do not use an open fire for the disposal of domestic waste or prohibited materials.
- Never leave an open fire unattended.
- Never ignite a campfire if a ban has been established by the fire chief or fire chief's designate.

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## Enforcement

- A fire chief, or fire chief's designate, is responsible for enforcing Category 2 fire regulations within their service area.
  - It is recommended to focus on education for Category 2 Fire operators. Warnings and Municipal Ticket Information should be a last resort.
  - It is the responsibility of the BC Conservation Officer service to enforce the Open Burning Smoke Control Regulation.
-



## Category 3 Fire



- A permit for a Category 3 fire is required year-round. A fire chief, or fire chief's designate, does not have the discretion to rescind permit requirements for Category 3 fires within their defined fire service area.
- It is not recommended to charge a fee for a Category 3 permit.

### Regulations

- CRD Fire Regulation Bylaw No. 2; and where applicable, the Open Burning Smoke Control Regulation, also known as the OBSCR.
- The following are vegetation size exemptions for agricultural or domestic purposes.
- If all the vegetative debris is under 3 cm in diameter, an operator is exempt from the OBSCR.
- If all vegetative debris is between 3 cm and 10 cm in diameter, the operator is exempt from most sections of the OBSCR with the following condition:
- A person can burn if the collected debris is from within 5 km of the burn site and there are no burn bans.
- If all of the vegetative debris open burned is branches or other pieces **of vegetative debris, with or without leaves, of which at least some of the individual branches or pieces are 10 cm or greater, the Open Burning Smoke Control Regulation applies.**
- **Note:** A fire chief, or fire chief's designate, does not have the discretion to exempt the requirements to follow the Open Burning Smoke Control Regulation except under specified circumstances (e.g. FireSmart activities)

### Permit Requirements

- A permit for a Category 3 fire is required year-round. A fire chief, or fire chief's designate, does not have the discretion to rescind permit requirements for Category 3 fires within their defined fire service area.
- It is not recommended to charge a fee for a Category 3 permit.

### Setbacks

- The Open Burning Smoke Control Regulation prescribes setbacks for Category 3 Fires.
- In the unlikely event, where there is an exemption to the Open Burning Smoke Control Regulation. The minimum setbacks are 15 metres from any building, structure, fence, tree or hedge.
- In some cases there may be exemption from OBSCR whereas the setback is 100m from residences and 500m from public buildings.

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## **Fire Operators**

- Obtain a permit from the fire department
- Obtain a Burn Registration Number from the BC Wildfire Service
- Ensure that every reasonable alternative for reducing, reusing or recycling the vegetative debris is used to minimize the amount of the vegetative debris to be open burned.
- Follow the Open Burning Smoke Control Regulation, including the Venting Index for Southern Vancouver Island
- Information Fact Sheet for All Open Burners
- Avoid conducting an open fire when it's windy.
- Choose a proper location.
- Do not burn green debris or leaves.
- Do not use an open fire for the disposal of domestic waste or prohibited materials.
- Never leave an open fire unattended.
- Never ignite a Category 3 fire if a prohibition has been established by the fire chief, or fire chief's designate.

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## **Enforcement**

- A fire chief, or fire chief's designate, is responsible for issuing and rescinding permits for Category 3 fires.
- It is recommended education be the main focus of enforcement with warnings or Municipal Ticket Information the last resort.
- The BC Conservation Officer enforces the Open Burning Smoke Control Regulation.

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## **Outdoor Solid Fuel (Wood-Burning) Appliances**

Before installing, erecting, or operating a solid fuel appliance, a property owner or occupant should check with the fire department for any permit requirements and restrictions for the service area.

## **Incinerators**

Before installing, erecting, or operating an Incinerator, a property owner or occupant should check with the fire department for any permit requirements and restrictions for the service area.



## Permits

Except for a campfire, permits are usually required for all open fires, incinerators, and solid fuel appliances. Before lighting or igniting any open fire, a property owner or occupant should check with the fire department for any permit requirements, restrictions or bans in place for the service area.

A fire chief, or fire chief's designate, can rescind or re-institute a permit requirement for any type of open fire, including within all or a portion of their service area.

They may also institute or rescind a permit requirement for campfires in all or part of a portion of their service area where, in their opinion, the institution of permit requirements is necessary, but a ban is not yet appropriate.

## Agricultural Burning

Farmers may use open burning to control crop residues as a management tool in grass seed production and in the control of weeds, residue and brush on pasture, range and non-crop areas such as right-of-ways, ditches and dyke banks. Burning is also done to dispose of orchard and vineyard prunings, tree stumps, spoiled hay and straw, diseased crop material, and brush piles from land which has been cleared.

As a general rule, before any open burning is carried out, all farmers should check with local authorities to determine if there is a bylaw that affects agricultural burning activities. If a local burning ban is in place, the ban takes precedence over any Open Burning Smoke Control Regulation exemptions.

The following links will redirect you to the BC government website:

[Farm Practice and Burning](#)

[Farm Practice and Land Clearing](#)

[Open Burning Smoke Control Regulation](#)

## Prohibited Materials

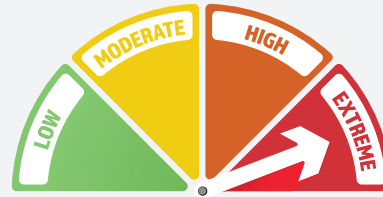
Never burn garbage or construction debris. It is illegal unless specifically authorized as it releases toxic chemicals in the air. Effects of these toxins include cancer, lowered immunity, disorders of the nervous system, and interfere with childhood development. Reduce waste and recycle instead.

**CRD Fire Regulation No.2, 2022 specifically prohibits the burning or incineration of the following materials:**

- Rubber, tires, plastic materials, or polystyrene foam;
- Fibreglass or other fibre-reinforced materials;
- Asphalt or asphalt products or tar paper;
- Construction materials, drywall or demolition waste;
- Carpets, furniture, appliances or domestic waste;
- Railway ties;
- Treated lumber or wood products;
- Manure, animal carcasses or waste from animal slaughtering;
- Paint, varnish, used oil, or fuel or lubricant containers;
- Batteries or electrical wire; and
- Biomedical or other hazardous waste.

## Industrial and High-Risk Activities

Fire watch, early shift or  
cease high-risk activity  
(shutdown)



**Fire Danger**  
In case of fire call 911

Fire Danger Class	Worker Restrictions	Duration
 <p>After 3 consecutive days of <b>MODERATE</b> fire risk</p>	<ul style="list-style-type: none"> <li>Workers must maintain a <b>1-hour FIRE WATCH</b> with appropriate firefighting tools</li> </ul>	<ul style="list-style-type: none"> <li>Until after the fire danger fall <b>below MODERATE</b></li> </ul>
 <p>Once a <b>HIGH</b> fire risk begins</p>	<ul style="list-style-type: none"> <li><b>FIRE WATCH increases to 2-hours</b></li> </ul>	<ul style="list-style-type: none"> <li>Until after the fire danger fall <b>below MODERATE</b></li> </ul>
 <p>After three 3 days of <b>HIGH</b> fire risk</p>	<ul style="list-style-type: none"> <li><b>EARLY SHIFT</b> (cease HIGH-RISK activities by 1 p.m.)</li> <li><b>FIRE WATCH remains at 2-hours</b></li> </ul>	<ul style="list-style-type: none"> <li>Until after the fire danger fall <b>below MODERATE for 2 consecutive days</b> or falls below MODERATE</li> </ul>
 <p>Once a <b>EXTREME</b> fire risk begins</p>	<ul style="list-style-type: none"> <li><b>EARLY SHIFT</b></li> <li><b>FIRE WATCH remains at 2-hours</b></li> </ul>	<ul style="list-style-type: none"> <li>Until after the fire danger falls <b>below HIGH for 2 or more consecutive days</b></li> </ul>
 <p>After 3 days of <b>EXTREME</b> fire risk</p>	<ul style="list-style-type: none"> <li><b>CEASE HIGH-RISK</b> activity in the forest and grassland (shutdown)</li> </ul>	<ul style="list-style-type: none"> <li>Until after the danger class falls <b>below EXTREME for 3 or more consecutive days</b> or falls below HIGH</li> </ul>

## High-risk activities

- Mechanical brushing (example: industrial scale brushing)
- Disk trenching (example: mechanical preparation of logged site)
- Preparation or use of explosives (example: blasting)
- Using fire- or spark-producing tools, including cutting tools (example: cutting torches, and metal grinders)
- Using or preparing fireworks or pyrotechnics (example: fireworks display)
- Grinding, including rail grinding (example: angle grinder)
- Mechanical land clearing (example: excavator or skidder logging or digging out stumps)
- Clearing and maintaining rights of way, including grass mowing (example: commercial right of way mowing; BC hydro brushing. Not residential lawn mowing)

### **Any of the following activities carried out in a cutblock excluding a road, landing, roadside work area or log sort area in the cutblock.**

- Operating a power saw (example: cutting firewood off a road in a combustible area)
- Mechanical tree felling, woody debris piling or tree processing, including de-limbing (example: logging activity or cutting firewood off a road in a combustible area)
- Welding (example: any welding off a road)
- Portable wood chipping, milling, processing or manufacturing (example: these activities when done outside of an industrial worksite within a fire protection district)
- Skidding logs or log forwarding unless it is improbable that the skidding or forwarding will result in the equipment contacting rock (example: logging activity)
- Yarding logs using cable systems (example: any logging activity that uses cable yarding equipment)

## What is early shift, and when does it start?

- **WHAT:**  
Early shift means all high-risk activities must stop by 1 p.m.
- **WHEN:**  
After 3 consecutive days of HIGH all high-risk activities must cease by 1 p.m.
- **HOWEVER:**  
After 3 consecutive days of EXTREME cease all activities.

## What is a fire watcher?

- A person who, in accordance with subsection (3) (a) and Schedule 3, is required to maintain a fire watcher. The fire watcher must ensure:
- Can reasonably see the site of the high-risk activity during the time the fire watcher is required.
- Has at least one firefighting hand tool.
- Actively watches and patrols for sparks and fires on the site of the high-risk activity.
- Immediately carries out fire control and extinguishes the fire, if practicable.
- Has the means on-site to report the fire.



# Exemptions in the Bylaw and Powers of a Fire Chief

## **This bylaw does not apply to a:**

- Fire used for the training of firefighters.
- Burn carried out by or under the direction of the BC Wildfire Service.
- Burn authorized by the fire chief to reduce fuel build-up or decrease a fire hazard.

## **The fire chief is authorized to administer and enforce this bylaw within their service area and may also:**

- Enter on the property and inspect the premises to determine if the bylaw provisions are being met.
- Take measures to prevent or suppress the spread of open fires.
- Issue orders directing the owners or occupiers of premises to bring open fires into compliance with this bylaw or with a permit under this bylaw.
- Issue permits for open fires, solid fuel appliances and incinerators under this bylaw, and impose such conditions, restrictions and requirements as the fire chief, or fire chief's designate, deems to be warranted to avoid the creation of a hazard or nuisance, due to weather, wind or other circumstance related to fire safety.
- In writing, refuse to issue a permit for an open fire, solid fuel appliance or incinerator if, in the opinion of the fire chief or fire chief's designate, the proposed activity is likely to create a hazard or nuisance because of adverse weather, wind or other circumstance;

- Suspend or cancel a permit, and impose conditions on resuming activity that was suspended, if:
  - the fire chief, or fire chief's designate, believes the permitted activity cannot be carried out safely or without creating a nuisance due to changes in weather, wind or other circumstances related to fire safety changing since permit issuance, or is not being carried out safely or in accordance with permit conditions, an order under paragraph (c), a provision of this bylaw, or another applicable enactment; or
  - the fire chief, or fire chief's designate, has received a complaint in relation to the emission of smoke, sparks, ash, soot, cinders or fumes and considers that fire extinction or control measures are warranted to address a nuisance or undue irritation or annoyance to other persons.
- Impose additional conditions or restrictions on any permit or class of permits if, in the opinion of the fire chief or fire chief's designate, weather, wind or other circumstances related to fire safety have changed since the issuance of the permit, and the conditions or restrictions are required to address the changed circumstances;
- Authorize an open fire to reduce fuel build-up or decrease a fire hazard;
- Restrict or prohibit any open fire, and impose a ban on all open fires for a period of time (including open fires for which permits have been issued) if the fire chief considers the fire danger rating warrants the restriction, prohibition or ban;
- Restrict or prohibit any Industrial activity if the Fire Chief considers the restriction or prohibition is necessary due to weather, wind or other circumstance related to fire safety;
- Where, in the opinion of the fire chief, or fire chief's designate, an incinerator or solid fuel appliance is likely to create or become a fire hazard due to damage, deterioration, lack of maintenance, construction or location, or due to adverse, weather, wind or other circumstance related to fire safety, the fire chief, or fire chief's designate, may order the owner to alter, renovate, repair or relocate the incinerator or solid fuel appliance, or discontinue its use.



## Enforcement – Approaches and Tools

Public education is the preferred approach for enforcement of this bylaw over penalties. On an escalating basis, and depending on the severity of any infraction, a fire chief, or fire chief's designate, has both the discretion and authority to administer warnings or fines within the scope of the bylaw. This can include rescinding of a permit.

### The typical order of approach for addressing concerns and issues as follows:

- Education
- Issuance of warning document
- Rescinding of permit
- Issuance of [Municipal Ticket Information](#)

An exception is the application of the Open Burning Smoke Control Regulation which is enforced by the BC Conservation Officer Service. An example is where infractions are observed regarding a Category 3 Open Fire.

### An operator of a Category 3 open Fire can and should expect:

- Fire chief, or fire chief's designate, requesting the operator correct the infraction.
- If the infraction is not corrected, the permit may be rescinded.
- If the operator continues to burn without a valid permit the fire chief, or fire chief's designate, may issue Municipal Ticket Information and notify the BC Conservation Officer Service.



# Appendix A - Summary Example

Summary of prohibited activities, restrictions and permit requirements



Permitted/  
unrestricted














































Bans and  
restrictions apply  
to some areas  
(check with local fire  
department)



Permit  
required



Ban or prohibition  
in effect

October 1, 2022	Fire Danger Rating	Campfires 	Category 2 Fires 	Category 3 Fires 	High-Risk Industrial Activities
Juan de Fuca					
East Sooke	EXTREME				
Otter Point	EXTREME				
Port Renfrew	EXTREME				
Shirley	EXTREME				
Willis Point	EXTREME				
Southern Gulf Islands					
Pender Island	EXTREME				
Galiano (North)	EXTREME				
Galiano (South)	EXTREME				
Saturna Island	EXTREME				
Coastal Fire Centre					

# Appendix B - Sample Permit

## Sample Permit

# Appendix C - FAQ

## Frequently Asked Questions During Restricted High-Risk-Activity Day

### **Can residents mow their lawn?**

Yes. If the lawn is green and requires cutting, and has been irrigated, it is fire-resistant. If residents want to mow their lawn when it is dry and dead, we recommend holding off or using preventative measures such as pre-wet and post-wet lawn; and remaining on-site after mowing to watch out for smouldering fires. Have a garden hose nearby and a way to contact 9-1-1.

### **Can residents use a weed eater?**

Using the same principles as lawn mowing, but extra precautions should be discussed with the fire department if using metal disk blades.

### **Can farmers hay their fields?**

Yes. However, during a shutdown, there may be special fire prevention measures required. If not a critical job, we suggest holding off haying until the fire danger decreases. There are irrigated fields that are fairly safe to hay even, in extreme conditions.

### **Is excavating a high-risk activity?**

Not as long as the excavation is being done on rock, dirt or mineral soil. Examples of excavating could be construction-sites, septic tanks, driveway work, etc. Excavating doesn't include land clearing.

### **Can residents use a chainsaw on a landing?**

Chainsaw use is only permitted on non-combustible surfaces during shutdown, such as green grass, gravel, dirt, and roadway.

### **Is drilling a high-risk activity?**

No. Contractors can drill in rock under no restrictions. Blasting is only permitted in early shift or regular shift.

However, no blasting is permitted during shutdown. Summary of prohibited activities, restrictions and permit requirements

# Appendix D - General Fire Safety Regulations

Before lighting a fire, even if the burn category is not currently prohibited, make sure you are prepared, aware of the conditions and following open burning regulations:



Establish a fuel break around your Category 2 or 3 burn or **fire guard** around your campfire.



Ensure someone is **continuously monitoring the fire** so it does not spread beyond its intended size. At least one person must watch the fire at all times and be equipped with a firefighting hand tool, at least 8 litres of water, or ready access to water.



Check whether the fire department has issued any **restrictions or prohibitions** for the service area before igniting an open fire, undertaking an industrial activity, using a solid fuel appliance or igniting a fire in an incinerator.



Ensure the fire is **authorized or permitted** by the landowner.



Ensure the fire is **completely extinguished** before leaving the area.



**Call the fire department if the fire spreads beyond the burn area or is out of control.** The person must also attempt to control the spread and extinguish the fire and comply with all directions of the Fire Chief.

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# Appendix E - Fire Danger Rating

## What is a local fire hazard, what does it mean, and how is it determined?

The weather significantly impacts how wildfires start, how aggressively they spread and how long they burn. This is why it's important to find out your area's fire danger rating and other information about fire weather.



**Know your  
fire area**



**Understand your  
rules in place**



**Know your  
category**

The BC Wildfire Service operates about 260 weather stations, which send hourly reports. These observations, supplemented by data from other agency stations, support fire weather forecasting.

This information is used for making fire prevention, preparedness and suppression, and other general fire management decisions.





Captial Region Electoral Area  
Fire Departments



Making a difference...together

**REPORT TO THE CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**     **Public Hearing Report on Bylaw No. 4423, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021”**

**ISSUE SUMMARY**

To receive the Report of the Public Hearing held November 8, 2022, for proposed Bylaw No. 4423, and to consider Bylaw No. 4423 for third reading and adoption.

**BACKGROUND**

At its meeting of October 12, 2022, the Capital Regional District (CRD) Board gave first and second reading to Bylaw No. 4423, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021” and passed a resolution to delegate authority to the Regional Director to hold a public hearing with respect to Bylaw No. 4423.

Bylaw No. 4423 (Appendix A) will amend Bylaw No. 2040, "Juan de Fuca Land Use Bylaw, 1992", by deleting That Part of Section 17, Otter District, Lying East of Otter Point Road, Except Parcel C (DD43782I) And Except Parts in Plans 3054 And 17721 from the Industrial Sawmill (M-3) zone, and adding to the Rural Residential 2 (RR-2) zone and adding to a new Rural Industrial (M-RU) zone for the purposes of permitting a 6-lot rural residential subdivision and a 4-lot rural industrial subdivision that would permit general industrial and business uses.

A public hearing was held for Bylaw No. 4423 on November 8, 2022. Five members of the public attended the hearing either electronically or in-person. One written submission was received in response to the notice of public hearing which stated concern regarding the development's potential impact on water supply to an adjacent farm and water supply to the proposed new lots and associated dwellings. The Engineer and the Biologist for the proponent spoke in support of the application. The Report of the Public Hearing is attached (Appendix B).

**ALTERNATIVES**

*Alternative 1*

- 1) That the minutes that form the Report of the Public Hearing for Bylaw No. 4423, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021”, which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4423, be received;
- 2) That Bylaw No. 4423 be read a third time; and
- 3) That Bylaw No. 4423 be adopted.

*Alternative 2*

That the minutes that form the Report of the Public Hearing for Bylaw No. 4423, which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4423, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021”, be received.

**IMPLICATIONS**

*Regional Growth Strategy Implications*

Section 445 of the *Local Government Act* requires that all bylaws adopted by a regional district board after the board has adopted a Regional Growth Strategy (RGS) be consistent with the RGS. In accordance with CRD policy, where a zoning bylaw amendment that applies to land within the



Otter Point Official Community Plan (OCP) area is consistent with the OCP, it does not proceed to the full CRD Board for a determination of consistency with the RGS. The proposed rezoning is consistent with the policies of the Otter Point OCP.

#### *Referral Process Implications*

Bylaw No. 4423 was referred to external agencies, the Otter Point Advisory Planning Commission (APC) and to CRD departments in July 2021. Referral comments were returned and the CRD Board gave first and second reading to Bylaw No. 4423 at its meeting on October 12, 2022.

#### *Land Use Implications*

The subject property is currently zoned RR-2 and M-3 and is designated as Settlement Area 2 in the Otter Point OCP. The Settlement Area designations contemplate industrial uses on lands zoned industrial and support accommodating limited industrial and commercial development with a focus on the Sooke Business Park.

Since the Land Use Committee first considered this application in 2021, the landowner has amended the application in response to comments from the agencies and the Otter Point APC. Amendments include removal of cannabis production and accommodation for recreational vehicles as permitted uses; limitations to the general industrial use; and a minor southerly expansion of the RR-2 zone. The expansion of the RR-2 zone will ensure the proposed lots meet the 1.0 ha minimum lot size and accommodate a proposed access road to the industrial zoned lands on their southern boundary. The expansion of the RR-2 zone should also provide additional protection to the watercourse as it would lie outside the industrial zone.

The M-RU zone includes some of the permitted uses provided in the nearby Sooke Business Park Industrial (M-SBP) zone, but stipulates a lower density. The M-RU zone has a larger 1.7 ha minimum lot size, rather than the 900 m<sup>2</sup> minimum lot size permitted by the M-SBP zone. The M-RU zone includes a maximum lot coverage of 25% and a floor area ratio of 0.4, whereas the M-SBP zone specifies a maximum lot coverage of 60% and no floor area ratio regulation. The maximum density on a 1.7 ha lot within the M-RU zone is a total floor area of 6,800 m<sup>2</sup> with a total building footprint of 4,250 m<sup>2</sup>. The M-RU zone also specifies screening requirements and is intended to provide an opportunity for less dense and impactful industrial development relative to the M-SBP zone.

The range of permitted uses proposed by Bylaw No. 4423 includes continued operation of the existing sawmill, general industrial uses, business office and support services, athletic facilities, personal services, unenclosed storage, retail sales of building and landscaping supply, retail sales of vehicle accessory parts, retail sales accessory to a principle industrial use, and one accessory caretaker dwelling unit with a maximum floor area of 110 m<sup>2</sup>. The M-RU zone specifically prohibits refuse and garbage dumps, including transfer stations; salvage and wrecking yards, including auto salvage and wrecking; and the burning of vehicles and other salvage.

#### *Procedures and Future Development*

Development proposals should demonstrate that community values and features can be protected subject to the criteria outlined in the Otter Point OCP, including review of the geotechnical and environmental constraints of the site; adequate potable water and sewage disposal; protection of existing groundwater supplies; appropriate scale of development; protection of natural features; adequate setbacks and vegetated buffers; protection of land considered regionally or locally significant; use of 'green' building techniques; and other works, services or community benefits required to mitigate the impact of development.

The Otter Point OCP also identifies high potential park and trail opportunities including a desire to establish an inter-connected network of trails through the Plan area. The JDF Community Parks

division currently holds a Licence of Occupation over Wieland Road right-of-way for future construction of a multi-use trail extending from William Simmons Memorial Park to Kemp Lake Road. At the present time, the right-of-way terminates at the subject property. The rezoning plan provided by the applicant proposes the dedication of the final section of the right-of-way for future trail development where acquisition will be arranged as part of the ongoing subdivision application.

As was noted at the public hearing for Bylaw No. 4423 and during the previous zoning amendment application to rezone the property from Rural A to RR-2 and M-3, members of the public have expressed concern that groundwater supply is scarce in the area and that several wells in Otter Point have run dry. Staff have confirmed through the Provincial aquifer mapping and wells database that the wells used by the subject property and by the farm property noted in the public hearing submission are located in two different aquifers. Staff also note that the overall level of development permitted under the previous Rural A zone is similar to that permitted under the current RR-2 zone. Development of the M-RU zoned areas will require a groundwater licence for industrial purposes. The issuance of non-domestic water licences includes an analysis by Ministry staff of existing water use in the area. To address ongoing concerns regarding the status of existing wells throughout Otter Point and in the District of Sooke, the CRD has installed a bulk drinking water station on Otter Point Road in Sooke that provides potable water through the Juan de Fuca Water Distribution System.

An environmental assessment report was prepared by Corvidae Environmental Consulting Inc. as part of an earlier rezoning application (File: RZ000267) that rezoned the subject property from Rural A to RR-2 and M-3. The report identified a riparian area on the property and recommended replanting and restoration measures. Replanting and restoration was required prior to adoption of the previous zoning bylaw amendment and active development permit application DP000370 is a requirement for the ongoing subdivision application. The development permit application involves the continuation of the Environmental Impact Assessment by Corvidae, and will require Provincial review and approval in accordance with the *Riparian Areas Protection Regulation*.

The CRD Building Inspection Division advised that a Registered Professional will be required to be involved in certain aspects of the construction and that the applicant is advised to work with the CRD to resolve any outstanding building permits. The need for fire protection measures was also raised by the Otter Point Volunteer Fire Department. As a condition of the previous zoning bylaw amendment for this property (RZ000267), the applicant was required to register a covenant (CA8709728) to ensure the installation of a 60,000 gallon water supply dedicated to fire protection for the industrial sawmill use and the community. Installation of the system is required prior to approval of subdivision application SU000711 or completion of building permits.

The landowner has provided a Traffic Impact Study (TIS) and a stormwater management (SWM) briefing for the review by the Ministry of Transportation & Infrastructure. The TIS identified locations for future motor vehicle access with the best visibility. The potential development will generate approximately 46 new trips during the peak hours; however, this additional traffic will not impact the use or safety of Otter Point Road. The SWM briefing outlined the conditions for onsite management on each proposed lot. The briefing stated that an increase in runoff and adverse effects to downstream water, habitats, and structures, future development should be mitigated. This can be achieved by promoting infiltration. Solutions would include in-ground disposal and detention of water and flow from hard surfaces should be controlled to mimic pre-development flows. Should the rezoning be approved, the TIS and a SWM plan would require the Ministry's review and approval as a part of the subdivision application process.

While the rezoning plan proposed four 1.8 ha rural industrial lots, the applicant is requesting a 1.7 ha minimum parcel size to accommodate the provision of land for future road dedication. Future industrial development within the M-RU zone should emphasize a more rural character in comparison to the Sooke Business Park, as it prohibits more impactful industrial uses, permits a lower density, and requires the retention of natural aspects in addition to screening.

The CRD Board gave the bylaw second reading, and passed a resolution to delegate authority to the Regional Director to hold a public hearing with respect to Bylaw No. 4423 at its meeting of October 12, 2022. In light of the amendments made to the application in response to comments from the agencies and the APC, staff recommend that the proposed bylaw be given third reading and adopted.

### **CONCLUSION**

The purpose of this zoning bylaw amendment application is to provide a minor expansion of the Rural Residential 2 (RR-2) zone and change the resulting 7.48 ha industrial portion of the subject property from Industrial Sawmill (M-3) zone to the new Rural Industrial (M-RU) zone for the purposes of a subsequent two-phase subdivision to create 6 rural residential parcels and 4 rural industrial lots. Proposed Bylaw No. 4423 has been read a second time and a public hearing for Bylaw No. 4423 was held on November 8, 2022. Staff recommend Alternative 1: that the minutes of the public hearing be received, and that the proposed bylaw be given third reading and adopted.

### **RECOMMENDATIONS**

- 1) That the minutes that form the Report of the Public Hearing for Bylaw No. 4423, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021”, which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4423, be received;
- 2) That Bylaw No. 4423 be read a third time; and
- 3) That Bylaw No. 4423 be adopted.

Submitted by:	Iain Lawrence, MCIP, RPP, Senior Manager, JdF Local Area Services
Concurrence:	Kevin Lorette, P.Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

### **ATTACHMENTS**

Appendix A: Proposed Bylaw No. 4423

Appendix B: Report of the Public Hearing November 8, 2022

**CAPITAL REGIONAL DISTRICT  
BYLAW NO. 4423**

\*\*\*\*\*  
**A BYLAW TO AMEND BYLAW NO. 2040, THE "JUAN DE FUCA LAND USE BYLAW, 1992"**  
\*\*\*\*\*

The Capital Regional District Board, in open meeting assembled, enacts as follows:

1. Bylaw No. 2040 being the "Juan de Fuca Land Use Bylaw, 1992" is hereby amended as follows:

**A. SCHEDULE A, PART 1, SECTION 2 – DEFINITIONS**

(a) By deleting the definition of INDUSTRIAL ZONE and replacing it with a new definition as follows:

"INDUSTRIAL ZONE means the M-SBP, M-2, M-3 and M-RU zoning districts;"

**B. SCHEDULE A, PART 1, SECTION 3.07**

(a) By adding the words "M-RU Rural Industrial" after the words "M-3 Industrial Sawmill".

**C. SCHEDULE A, PART 2 - ZONING DISTRICTS**

(a) By adding a new section 29.0 Rural Industrial – M-RU Zone as follows:

**29.0 Rural Industrial – M-RU Zone**

**29.01 Permitted Uses**

In addition to the uses permitted by Section 4.15 of Part 1 of this Bylaw, the following uses and buildings are permitted in the Rural Industrial (M-RU) zone:

- (a) General industrial uses;
- (b) Industrial sawmill and associated log storage and sorting, lumber milling, processing, and storage;
- (c) Business office and support services;
- (d) Athletic facilities;
- (e) Personal services;
- (f) Unenclosed storage;
- (g) Retail sales of building and landscape supplies;
- (h) Retail sales accessory to a principal industrial use;
- (i) Retail sales of vehicle accessory parts;
- (j) One dwelling unit for the use of a caretaker accessory to a principal use.

**29.02 Prohibited Uses**

Despite Section 29.01, the following uses are prohibited in the Rural Industrial (M-RU) zone

- (a) Refuse and garbage dumps, including transfer stations;
- (b) Salvage and wrecking yards, including auto salvage and wrecking;
- (c) The burning of vehicles and other salvage.

**29.03 Minimum Lot Size for Subdivision Purposes**

(a) The minimum lot size for subdivision purposes shall be 1.7 ha.

**29.04 Lot Coverage**

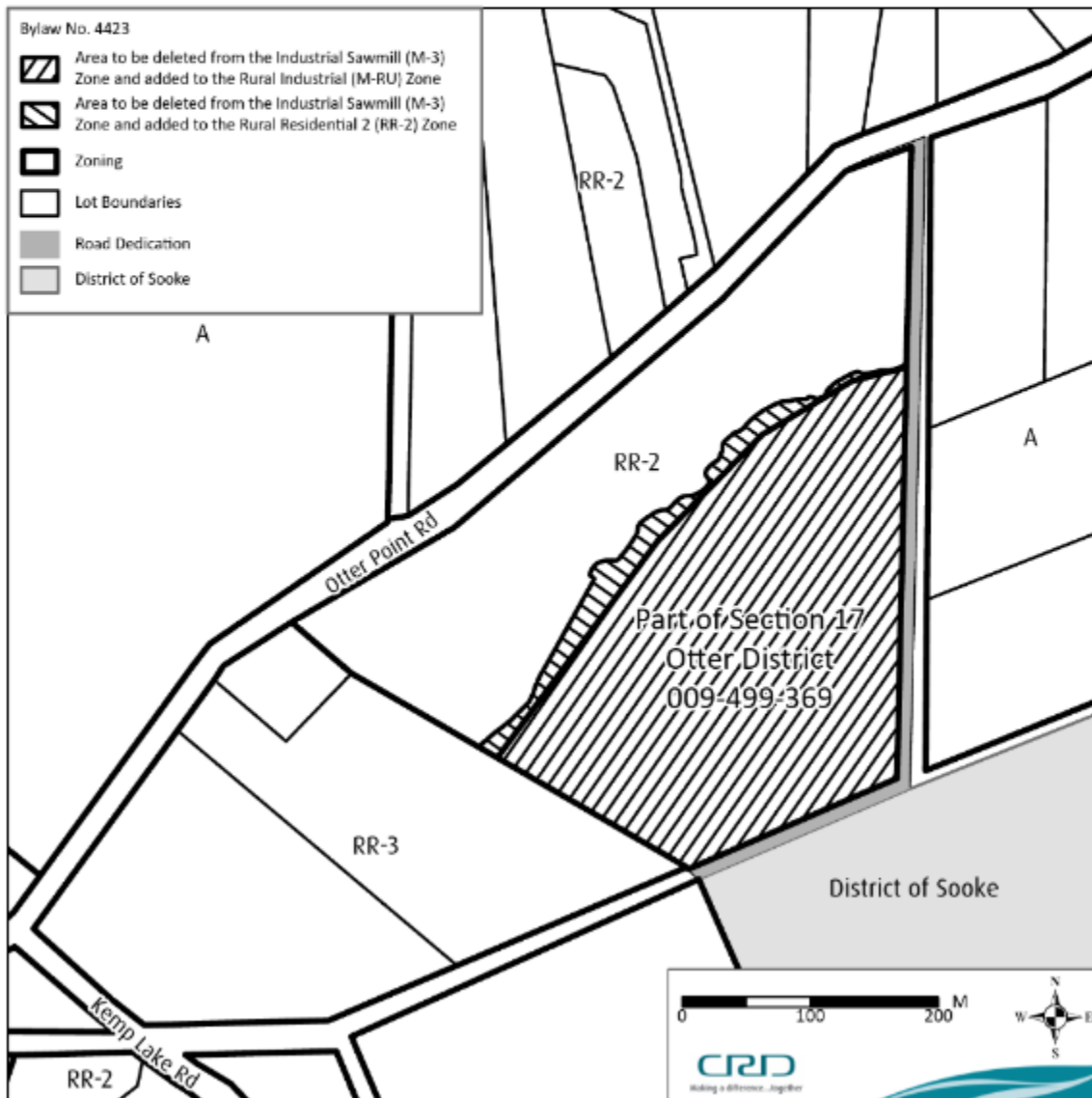
(a) The maximum lot coverage shall be 25%.

- 29.05 Number of Dwelling Units** (a) The maximum number of dwelling units for the use of a caretaker accessory to a principal use shall be 1.
- 29.06 Maximum Floor Area** (a) The maximum floor area ratio of buildings and structures shall be 0.4.  
(b) The maximum floor area of a caretaker's suite shall be 110 m<sup>2</sup>.
- 29.07 Height** (a) The maximum height shall be 14.0 m for all principal buildings and structures.  
(b) The maximum height of any unenclosed storage use shall be 3.5 m within 30 m of a Residential Zone, Multiple Family Residential Zone, Commercial Zone, Rural Zone, Agricultural Zone or Institutional Zone.
- 29.08 Required Yards** (a) Front yards shall be a minimum of 7.5 m;  
(b) Side yards shall be a minimum of 6 m, except:  
i) where the lot abuts a Residential, Rural Residential, Rural, or Multiple Family Residential zone, the side yard shall be a minimum of 15 m;  
ii) where the lot abuts an Industrial Zone, the side yard may be 0 m;  
(c) Flanking yards shall be a minimum of 7.5 m CTS.  
(d) Rear yards shall be a minimum of 15 m, except:  
i) Where a rear lot line abuts an Industrial Zone, the rear yard may be reduced to not less than 4.5 m.
- 29.09 Storage** (a) Storage shall not be permitted in required yards adjacent to any Residential, Rural Residential, Rural, or Multiple Family Residential Zone.
- 29.10 Screening** (a) Where the lot abuts a public highway, or a Residential, Rural Residential, Rural or Multiple Family Residential Zone, a vegetative screen shall be located and maintained along the entire length of parcel boundaries.  
(b) The vegetative screen shall consist of coniferous vegetation native to the region that is not less than 2 m high, space not more than 2 m apart, and not less than 15 m deep on any portion of the lot that abuts a Residential, Rural Residential, Rural or Multiple Family Residential, and not less than 7.5 m deep on any portion of the lot that abuts a public highway.

**D. SCHEDULE B, ZONING MAPS**

- a. By deleting that portion of That Part of Section 17, Otter District, Lying East of Otter Point Road, Except Parcel C (DD437821) And Except Parts in Plans 3054 And 17721 from the Industrial Sawmill (M-3) zone, and adding to the Rural Industrial (M-RU) zone, as shown in Plan No. 1.
- b. By deleting that portion of That Part of Section 17, Otter District, Lying East of Otter Point Road, Except Parcel C (DD437821) And Except Parts in Plans 3054 And 17721 from the Industrial Sawmill (M-3) Zone, and adding to the Rural Residential 2 (RR-2) Zone, as show in Plan No. 1.

**Plan No. 1 of Bylaw No. 4423, an amendment to Bylaw No. 2040**





Appendix B: Report of the Public Hearing

**REPORT OF PUBLIC HEARING**

held at the Juan de Fuca Local Area Services Building  
3-7450 Butler Road, Otter Point, BC  
November 8, 2022 at 7:00 pm

**SUBJECT:** **BYLAW NO. 4423**, cited as “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 153, 2021”

**PRESENT:** **Director A. Wickheim**, Chair by Resolution of the Capital Regional District Board on Wednesday, October 12, 2022

**CRD Staff:** I. Lawrence, Senior Manager, Juan de Fuca Local Area Services;  
W. Miller, Recorder

**PURPOSE OF THE HEARING:**

Bylaw No. 4423 will amend Bylaw No. 2020, "Juan de Fuca Land Use Bylaw, 1992," by deleting That Part of Section 17, Otter District, Lying East of Otter Point Road, Except Parcel C (DD43782I) And Except Parts in Plans 3054 And 17721 from the Industrial Sawmill (M-3) zone, and adding to the Rural Residential 2 (RR-2) zone and adding to a new Rural Industrial (M-RU) zone for the purposes of a subsequent two-phase subdivision to create 6 rural residential parcels and 4 rural industrial lots.

**NOTICE:** Notices were inserted in two (2) consecutive issues of the Sooke News Mirror appearing on October 27 and November 3, 2022.

**ATTENDANCE:** 3 In-person; 2 EP

EP – Electronic Participation

The Chair provided a Territorial Acknowledgement.

The Chair declared the public hearing open at 7:00 pm.

The guidelines and procedures of the public hearing and the Notice of Public Hearing were read to those present.

I. Lawrence reported that at the close of the working day one submission was received which states concern regarding the development’s potential impact on water supply to an adjacent farm and water supply to the proposed new lots and associated dwellings. It was advised that the submission will form a part of the record of the public hearing.

Application representative, Phil Buchanan, P. Eng., stated:

- land is currently zoned Industrial Sawmill which permits heavy industrial use
- the proposal supports a more moderate industrial use on smaller lots
- rezoning would decrease the area of industrial use from 5.94 ha to 5.71 ha, resulting in more protected greenspace between the watercourse and the industrial area



Application representative, Julie Budgen, R.P.Bio, B.Sc., stated:

- has been working with the applicant since 2019
- since that time, the applicant has planted over 2200 trees along the property boundary and within the Streamside Protection and Enhancement Area (SPEA)
- the applicant has flagged sensitive areas to ensure no disturbance
- in addition to native conifer plantings, the property has undergone natural regeneration
- rezoning from Industrial Sawmill to Rural Industrial has potential to reduce noise and emissions, which will be a benefit to the environment

The Chair called three times for further discussion on the bylaw and hearing none closed the public hearing on Bylaw No. 4423 at 7:11 pm.

CHAIR, Director A. Wickheim
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Date: November 8, 2022  
To: Iain Lawrence and Juan de Fuca Community Planning  
From: Mary Alice Johnson,  
Re: Rezoning application for parcel C (DD437821).

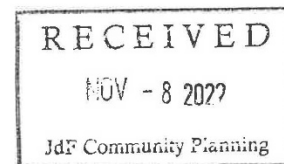
As an owner within 500 metres of the subject site, I submit this concern about the possible effect this development will have on the water supply available to my farm from King Creek which is fed by the wetlands on this property. I currently have sub-surface (well) water rights for agriculture use and also surface water rights to water from King Creek. I am concerned that the development will affect the water available to my farm and house at which I have owned and farmed since the 1986.

As I understand the zoning, up to 2 residential buildings will be allowed on each of the 5 rural residential portions requested for the land along Otter Point Road and one caretaker housing allowed on each of the 4 industrial lots. This is a total of 14 homes which will create a large demand for domestic water use as well as any water needs that will be created by the 4 industrial businesses.

According to Sylvia Barroso, regional Hydrogeologist, Water Protection of the Ministry of Forests, Land, Natural Resources Operations and Rural Develop, the aquifer supplying our area is small and is "fully record with exceptions" and likely wells and creek water will be affected by any new wells drawing water from the aquifer.

I feel it is crucial that before adopting the amendment for subdivision, it is clear how water will be supplied to these properties, how nearby homes and farms water availability will be affected, and how the wetlands and aquifer will be protected.

Yours sincerely,





Making a difference...together

**REPORT TO THE CAPITAL REGIONAL DISTRICT BOARD  
MEETING OF WEDNESDAY, DECEMBER 14, 2022**

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**SUBJECT**     **Public Hearing Report on Bylaw No. 4496, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022”**

**ISSUE SUMMARY**

To receive the Report of the Public Hearing held November 8, 2022, for proposed Bylaw No. 4496, and to consider Bylaw No. 4496 for third reading and adoption.

**BACKGROUND**

At its meeting of October 12, 2022, the Capital Regional District (CRD) Board gave first and second reading to Bylaw No. 4496, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022” and passed a resolution to delegate authority to the Regional Director to hold a public hearing with respect to Bylaw No. 4496.

Bylaw No. 4496 (Appendix A) will amend Bylaw No. 2040, "Juan de Fuca Land Use Bylaw, 1992", by amending the Wildwood Terrace 4 (WT-4) zone by adding detached accessory suites as a permitted accessory use.

A public hearing was held for Bylaw No. 4496 on November 8, 2022. Three members of the public attended the hearing either electronically or in-person. Four written submissions were received in support of the application in response to the notice of public hearing. The application representative spoke in support of the application. The Report of the Public Hearing is attached (Appendix B).

**ALTERNATIVES**

*Alternative 1*

- 1) That the minutes that form the Report of the Public Hearing for Bylaw No. 4496, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022”, which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4496, be received;
- 2) That Bylaw No. 4496 be read a third time; and
- 3) That Bylaw No. 4496 be adopted.

*Alternative 2*

That the minutes that form the Report of the Public Hearing for Bylaw No. 4496, which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4496, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022”, be received.

**IMPLICATIONS**

*Regional Growth Strategy Implications*

Section 445 of the *Local Government Act* requires that all bylaws adopted by a regional district board after the board has adopted a Regional Growth Strategy (RGS) be consistent with the RGS. In accordance with CRD policy, where a zoning bylaw amendment that applies to land within the Shirley-Jordan River Official Community Plan (OCP) area is consistent with the OCP, it does not proceed to the full CRD Board for a determination of consistency with the RGS. The proposed rezoning is consistent with the policies of the Shirley-Jordan River OCP.

### *Referral Process Implications*

Bylaw No. 4496 was referred to external agencies, the Shirley-Jordan River Advisory Planning Commission (APC) and to CRD departments in July 2022. Referral comments were returned and the CRD Board gave first and second reading to Bylaw No. 4496 at its meeting on October 12, 2022.

### *Land Use Implications*

The Shirley-Jordan River OCP designates the subject area as Pacific Acreage. The intent of the Pacific Acreage land use designation is to support residential uses on parcels that are in the 2 ha range. Suites and duplexes are acceptable forms of development to increase the affordability of housing and offer rental accommodation. Permitting detached accessory suites as an accessory use within the WT-4 zone is supported by this designation.

The current residential uses permitted within the WT-4 zone are one single-family dwelling and one secondary suite. The abutting properties are zoned Wildwood Terrace 1, 2 and 3 (WT-1, WT-2, & WT-3). Rather than *detached accessory suites*, these zones permit additional dwelling capacity in the form of *secondary dwellings*, which have a maximum floor area of 115 m<sup>2</sup>. Proposed Bylaw No. 4496 does not increase the potential density of the WT-4 zone as the zone already permits a suite in the principal dwelling and the proposed amendment would only provide the option for the suite to be located in an accessory building. Both the *secondary suite* regulations and the *detached accessory suite* regulations limit the maximum floor area of the suite to 90 m<sup>2</sup>.

### *Procedures and Future Development*

The Shirley-Jordan River OCP identifies riparian, steep slopes, and sensitive ecosystem development permit areas (DPA) in the subject area. Land alteration, subdivision and building construction in a designated DPA require a development permit that may include a professional report. For development within a riparian DPA, a *Riparian Areas Protection Regulation* report with provincial approval is required prior to issuance of the permit. The CRD has no jurisdiction to require works around road culverts or within a road right-of-way and there are no regulations for residential lands limiting impermeable surfaces; however, the WT-4 zone does restrict the maximum parcel coverage to 25%, which provides increased opportunity for natural infiltration. Stormwater management is evaluated by the Ministry of Transportation and Infrastructure as part of subdivision applications.

Property owners are advised to confirm the requirements provided in the statutes and regulations of the *Water Sustainability Act*, the *Drinking Water Protection Act*, and the *Public Health Act* regarding water quality, licensing, setbacks, and standards for the onsite servicing of future development.

The CRD Board gave the bylaw second reading, and passed a resolution to delegate authority to the Regional Director to hold a public hearing with respect to Bylaw No. 4496 at its meeting of October 12, 2022. In light of the submissions received from the public in support of the application at the public hearing, staff recommend that the proposed bylaw be given third reading and adopted.

**CONCLUSION**

The area that is the subject of this application includes all parcels that are zoned WT-4 under Bylaw No. 2040. The purpose of Bylaw No. 4496 is to amend the WT-4 zone by adding detached accessory suites as a permitted accessory use. Proposed Bylaw No. 4496 has been read a second time and a public hearing for Bylaw No. 4496 was held on November 8, 2022. Staff recommend Alternative 1: that the minutes of the public hearing be received, and that the proposed bylaw be given third reading and adopted.

**RECOMMENDATIONS**

- 1) That the minutes that form the Report of the Public Hearing for Bylaw No. 4496, “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022”, which are certified as a fair and accurate summary of the representations that were made at the public hearing held on November 8, 2022, for Bylaw No. 4496, be received;
- 2) That Bylaw No. 4496 be read a third time; and
- 3) That Bylaw No. 4496 be adopted.

Submitted by:	Iain Lawrence, MCIP, RPP, Senior Manager, JdF Local Area Services
Concurrence:	Kevin Lorette, P.Eng., MBA, General Manager, Planning & Protective Services
Concurrence:	Ted Robbins, B. Sc., C. Tech., Chief Administrative Officer

**ATTACHMENTS**

- Appendix A: Proposed Bylaw No. 4496
- Appendix B: Report of the Public Hearing November 8, 2022



Appendix B: Report of the Public Hearing

**REPORT OF PUBLIC HEARING**

held at the Juan de Fuca Local Area Services Building  
3-7450 Butler Road, Otter Point, BC  
November 8, 2022 at 7:00 pm

**SUBJECT:** **BYLAW NO. 4496**, cited as “Juan de Fuca Land Use Bylaw, 1992, Amendment Bylaw No. 156, 2022”

**PRESENT:** **Director A. Wickheim**, Chair by Resolution of the Capital Regional District Board on Wednesday, October 12, 2022  
**CRD Staff:** I. Lawrence, Senior Manager, Juan de Fuca Local Area Services;  
W. Miller, Recorder

**PURPOSE OF THE HEARING:**

Bylaw No. 4496 will amend Bylaw No. 2020, "Juan de Fuca Land Use Bylaw, 1992," by amending the Wildwood Terrace 4 (WT-4) zone by adding detached accessory suite as a permitted accessory use.

**NOTICE:** Notices were inserted in two (2) consecutive issues of the Sooke News Mirror appearing on October 27 and November 3, 2022.

**ATTENDANCE:** 1 In-person; 2 EP

EP – Electronic Participation

The Chair provided a Territorial Acknowledgement at the preceding hearing.

The Chair declared the public hearing open at 7:11 pm.

The guidelines and procedures of the public hearing and the Notice of Public Hearing were read to those present.

I. Lawrence reported that at the close of the working day four submissions were received in support of the application. It was advised that the submissions will form a part of the record of the public hearing.

Blair Robertson, application representative:

- the intent of the zoning amendment is to provide parity to the other zones in the Juan de Fuca that permit detached accessory suites, which provide increased housing opportunity

The Chair called three times for further discussion on the bylaw and hearing none closed the public hearing on Bylaw No. 4496 at 7:16 pm.

CHAIR, Director A. Wickheim

**From:** [Wendy Miller](#)  
**To:** [jdf info](#)  
**Subject:** Support for Zoning Amendment Application RZ000278  
**Date:** Wednesday, October 26, 2022 3:29:40 PM

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**From:** Katrina May [REDACTED]  
**Sent:** Wednesday, October 26, 2022 9:17 AM  
**To:** Darren Lucas <[DLucas@crd.bc.ca](mailto:DLucas@crd.bc.ca)>  
**Cc:** Zach Flood [REDACTED]  
**Subject:** Support for Zoning Amendment Application RZ000278

**CAUTION:** This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

Hi Daren,

I'm writing to express my support for the Zoning Amendment Application RZ000278 - to Add Detached Accessory Suite as a Permitted Accessory Use in the Wildwood Terrace 4 (WT-4) Zone.

My husband and I own [REDACTED] of the subject area and would like to see this amendment approved. It is in line with what is permitted in other residential areas of Jordan River.

Thank you,  
Katrina

[REDACTED]



**From:** [Kate Vallance](#)  
**To:** [jdfinfo](#)  
**Subject:** RE: Rezoning Amendment Application RZ000278  
**Date:** Sunday, November 06, 2022 2:42:49 PM

**CAUTION:** This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

RE: Rezoning Amendment Application RZ000278  
(Bylaw No. 4496, Juan de Fuca Land Use Bylaw Amendment)

Hello there,

We would like to express our support for the proposed rezoning amendment to add a detached accessory suite as a permitted accessory use in the Wildwood Terrace 4 (WT-4) zone in Jordan River.

My spouse Charles and I were very excited to purchase our lot in the WT-4 in February of 2021. We currently live in a condominium in Victoria, and my mother lives in another building nearby. Our long term plan is to relocate to Jordan River and have my mother live on the property with us. The rezoning amendment to add a detached accessory suite as a permitted accessory use would allow us to build a small residence where Charles and I would live while a larger residence is constructed. Once the larger residence is constructed, we would move in and my mother would be able to live in the smaller residence.

My mother is a very important part of our lives and by having zoning that allows for two separate dwellings, we would be able to provide support for her to age in place while still allowing her (and us) the ability to live independently but within close proximity.

We feel that the other 2.5 acre properties in the Wildwood Terrace zones along Trailhead Drive do not seem overly crowded with two dwellings and we would like to have the opportunity to develop our property in an equivalent way. We appreciate your consideration of this application to amend the zoning in a way that would allow us to achieve our housing goals as part of the Jordan River community.

Thank you very much,

Kate Vallance and Charles Macpherson  
[REDACTED]  
Jordan River

**From:** [Kieren Rasura](#)  
**To:** [Wendy Miller](#)  
**Subject:** public hearing tonight on the WT-4 zoning amendment to permit detached accessory suites.  
**Date:** Tuesday, November 08, 2022 2:29:53 PM

**CAUTION:** This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

Hi Wendy,

I am the owner of lot █ in the new creekside glen development.

I give my full support for the rezone to allow detached accessory suites.

Thank you,

***Kieren Rasura, BBus (Mkt)***

Personal Real Estate Corporation

eXp Realty, Icon Agent

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**From:** [Will - Barracuda](#)  
**To:** [Wendy Miller](#)  
**Subject:** Support of Bylaw 4496  
**Date:** Tuesday, November 08, 2022 3:42:27 PM

**CAUTION:** This Email is from an EXTERNAL source. Ensure you trust this sender before clicking on any links or attachments.

Good afternoon ,

I am writing to confirm my support of adding the detached accessory suite to the wt-4 zoning.

Thank you!

**WILLIAM HAZEN**

**BARRACUDA SURFBOARDS**

T: [250 658 6750](tel:2506586750) | E: [WILL@BARRACUDASURE.COM](mailto:WILL@BARRACUDASURE.COM)

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#SUPPORTYOURLOCALSHAPER

**CAPITAL REGIONAL DISTRICT**

**BYLAW NO. 4487**

\*\*\*\*\*

**A BYLAW TO ESTABLISH THE SEAGIRT WATER SYSTEM  
LOCAL SERVICE AREA**

\*\*\*\*\*

WHEREAS:

- A. The Capital Regional District may, under Section 263(1)(a) of the *Local Government Act*, establish and provide any service that the Board considers necessary or desirable for all or part of the Capital Regional District;
- B. The Board of the Capital Regional District wishes to establish a water distribution local service of the regional district (the "Service"), in the area formerly serviced by the Seagirt Waterworks District, in order to fund upgrades to the water system, while the former water supply service provided by the Seagirt Waterworks District will be taken on by the Juan De Fuca Water Distribution Service and Commission, respectively;
- C. Participating area approval is required and assent of the electors has been obtained pursuant to Sections 337 and 347(1)(a) of the *Local Government Act*; and
- D. The approval of the Inspector of Municipalities has been obtained under Section 342 of the *Local Government Act*.

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

**Service**

- 1. The Service established by this Bylaw is for the purposes of upgrading the existing Seagirt Waterworks District Water System, the operation of a water utility, and assuming responsibility for the administration, operation, and maintenance of the infrastructure providing water to the residences in the area formerly known as the Seagirt Waterworks District.

**Boundaries**

- 2. The boundaries of the Service Area are shown in heavy outline on the Plan attached as Schedule "A" to this Bylaw, which are within the Juan de Fuca Electoral Area.

**Participating Area**

- 3. Only the Juan de Fuca Electoral Area contains a participating area for this service.

**Cost Recovery**

- 4. 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) by property value taxes imposed in accordance with Division 3 of the *Local Government Act*;

- b) parcel taxes imposed in accordance with Division 3 of the *Local Government Act*;
- c) fees and charges imposed under Section 397 of the *Local Government Act*;
- d) revenues raised by other means authorized under the *Local Government Act* or another Act;
- e) revenues received by agreement, enterprise, gift, grant or otherwise.

**Maximum Requisition**

- 5. In accordance with Section 339(1)(e) of the *Local Government Act*, the maximum amount that may be requisitioned annually for the cost of the Service is the greater of:
  - a) Three hundred and twenty thousand (\$320,000); or
  - b) An amount equal to the amount that could be raised by a property value tax rate of \$3.4824 per One Thousand Dollars (\$1,000) that, when applied to the net taxable value of land and improvements in the Service Area, will yield the maximum amount that may be requisitioned for the Service.

**Citation**

- 6. This Bylaw may be cited as the "Seagirt Water System Local Service Establishment Bylaw No. 1, 2022".

READ A FIRST TIME THIS	21 <sup>st</sup>	day of	September,	2022
READ A SECOND TIME THIS	21 <sup>st</sup>	day of	September,	2022
READ A THIRD TIME THIS	21 <sup>st</sup>	day of	September,	2022
RECEIVED PARTICIPATING AREA APPROVAL UNDER SECTION 347(1)(a) OF THE LOCAL GOVERNMENT ACT THIS	15 <sup>th</sup>	day of	September,	2022
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	22 <sup>nd</sup>	day of	November,	2022
ADOPTED THIS		day of		

\_\_\_\_\_  
CHAIR

\_\_\_\_\_  
CORPORATE OFFICER

FILED WITH THE INSPECTOR OF MUNICIPALITIES THIS \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_

CAPITAL REGIONAL DISTRICT

BYLAW NO. 4488

\*\*\*\*\*

**A BYLAW TO AUTHORIZE THE BORROWING OF  
TWO MILLION, ONE HUNDRED THOUSAND DOLLARS (\$2,100,000);  
FOR THE SEAGIRT WATER SYSTEM UPGRADE**

\*\*\*\*\*

WHEREAS:

- A. Under Bylaw No. 4487, Seagirt Water System Local Service Establishment Bylaw No. 1, 2022, the Capital Regional District established a local service for the payment of upgrades to the former Seagirt Waterworks District water distribution service;
- B. The Board of the Capital Regional District wishes to upgrade the existing Seagirt Water System in connection with the Service (the "Project") to facilitate integration with the Juan de Fuca Water Distribution Service;
- C. The estimated cost of the Project, including expenses incidental thereto to be funded by debt servicing, is the sum of Two Million, One Hundred Thousand Dollars (\$2,100,000); which is the amount of debt intended to be authorized by this bylaw;
- D. Pursuant to Section 337, 342 and 407 of the *Local Government Act*, participating area approval is required and has been obtained by petition of the electors under Section 342(2)(d) of the *Local Government Act*;
- E. The approval of the Inspector of Municipalities is required under Section 342 of the *Local Government Act*; and
- F. It is proposed that the financing of the Project is to be undertaken by the Municipal Finance Authority of British Columbia pursuant to proposed agreements between that Authority and the Capital Regional District.

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

- 1. The Board is hereby empowered and authorized to undertake and carry out or cause to be carried out the planning, study, design and construction of works for the provision of the facilities and equipment for the purpose of the Project in connection with the Service and to do all things necessary in connection with the Project and without limiting the generality of the foregoing:
  - (a) to borrow upon the credit of the Capital Regional District a sum not exceeding Two Million, One Hundred Thousand Dollars (\$2,100,000);
  - (b) to acquire all such real property, easements, rights-of-way, leases, licenses, rights or authorities as may be requisite or desirable for or in connection with the Project.
- 2. The maximum term for which debentures may be issued to secure the debt intended to be created by this bylaw is twenty five years.

3. This Bylaw may be cited as the "Seagirt Water System Local Service Loan Authorization Bylaw No. 1, 2022".

READ A FIRST TIME THIS	21 <sup>st</sup>	day of	September,	2022
READ A SECOND TIME THIS	21 <sup>st</sup>	day of	September,	2022
READ A THIRD TIME THIS	21 <sup>st</sup>	day of	September,	2022
RECEIVED PARTICIPATING AREA APPROVAL UNDER SECTIONS 342(2), 407 AND 408 OF THE <i>LOCAL GOVERNMENT ACT</i> THIS	15 <sup>th</sup>	day of	September,	2022
APPROVED BY THE INSPECTOR OF MUNICIPALITIES THIS	22 <sup>nd</sup>	day of	November,	2022
ADOPTED THIS		day of		

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CHAIR

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CORPORATE OFFICER