Regional District of Central Kootenay
JOINT RESOURCE RECOVERY COMMITTEE
Open Meeting Agenda

**Date:** Wednesday, April 17, 2024

**Time:** 1:00 pm

**Location:** Hybrid Model - In-person and Remote

Directors will have the opportunity to participate in the meeting electronically. Proceedings are open to the public.

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Pages

1. **WEBEX REMOTE MEETING INFO**
To promote openness, transparency and provide accessibility to the public we provide the ability to attend all RDCK meetings in-person or remote.

**Meeting Time:**

1:00 pm PST
2:00 pm MST

**Join by Meeting Link:**

https://nelsonho.webex.com/nelsonho/j.php?MTID=m4fa3fd7046d34894a0ef3acb5b32295a

**Meeting Number (access code):** 2770 048 0346
**Meeting Password:** DssRJXPf492 (37775973 from phones)

**Join by Phone:** +1-604-449-3026 Canada Toll (Vancouver)

**In-Person Location:** RDCK Board Room, 202 Lakeside Drive, Nelson, BC

2. **CALL TO ORDER & WELCOME**
Director Jackman to call the meeting to order at 1:00 pm PST / 2:00 pm MST.

2.1 **Traditional Lands Acknowledgement Statement**
We acknowledge and respect the Indigenous peoples within whose traditional lands we are meeting today.

## 2.2 Adoption of the Agenda

**RECOMMENDATION:**
The agenda for the April 17, 2024 Joint Resource Recovery meeting be adopted as circulated.

## 2.3 Receipt of Minutes

6 - 13

The February 14, 2024 Joint Resource Recovery minutes, have been received.

## 3. TRANSFER STATION UPGRADES: NAKUSP, ROSEBERY & SLOCAN

14 - 20

The April 10, 2024 Committee Report by AJ Evenson, Senior Project Manager, requesting that the contract for the Nakusp, Rosebery and Slocan Transfer Station Upgrades be awarded to North Mountain Construction Ltd., has been received.

**RECOMMENDATION:**
**[West Sub-region]**

That the Board approve an amendment to the 2024 Financial Plan for the West Waste Service S188 Transfer from Reserves to increase by $799,644 and Capital Expenditures accounts to increase by the following amounts for the West Transfer Station Upgrades projects:

- Nakusp (CAP1116-100) $311,617
- Rosebery (CAP1120-100) $262,102
- Slocan (CAP1425-100) $225,925

**RECOMMENDATION:**
**[West Sub-region]**

That the Upgrades at the Nakusp and the Slocan Transfer Stations Bylaw No. 2962, 2024 be read a FIRST, SECOND, and THIRD time by content.

**RECOMMENDATION:**
**[West Sub-region]**

That the Board authorize staff to enter into a Services Agreement with North Mountain Construction Ltd for the Nakusp, Rosebery and Slocan Transfer Station Upgrades in the amount of $2,577,975.29 not including GST; AND FURTHER that the Board Chair and Corporate Officer be authorized to sign the necessary documents; AND FURTHER that the costs be paid from Service S188 West Sub-Region Resource Recovery.

## 4. HB TAILINGS FACILITY: EROSION CONTROL WORKS

21 - 40

The March 20, 2024 Committee Report from AJ Evenson, Senior Project Manager and Alayne Hamilton, Environmental Projects Lead requesting that the contract for the HB Tailings Facility 2024 Erosion Control Works be awarded to Brenton Industries Ltd., has been received.

**RECOMMENDATION:**
**[Central Sub-region]**

That the Board authorize staff to enter into a Services Agreement with Brenton Industries Ltd. for the HB Tailings Facility 2024 Erosion Control Works in the amount of $87,490.84 not including GST;

AND FURTHER that the Board Chair and Corporate Officer be authorized to sign the necessary documents;

AND FURTHER that the costs be paid from Service S187 Central Sub-Region Resource Recovery.

**5. HB TAILINGS FACILITY: ENGINEERING CONTRACT** 41 - 44

The March 26, 2024 Committee Report from Alayne Hamilton, Environmental Project Lead, outlining a proposed insurance modification for SRK Consulting (Canada) Inc. (SRK) for the current HB Tailings Facility engineering support and Engineer-of-Record consulting services agreement, has been received.

**RECOMMENDATION:**
**[Central Sub-region]**

That the Board accept the insurance deductible modification for SRK Consulting (Canada) Ltd.'s Professional Errors and Omissions Liability insurance to increase the deductible from $50,000 to $500,000;

AND FURTHER, that the Board also accept the modification to the Professional Errors and Omissions Liability coverage to reduce the in aggregate amount from $10,000,000 to $5,000,000.

**6. RESOURCE RECOVERY FACILITIES: NOXIOUS WEED TREATMENT OPTIONS** 45 - 82

The March 5, 2024 Committee Report from Nathan Schilman, Environmental Technologist, presenting the management options and recommendations provided by the Central Kootenay Invasive Species Society (CKISS) for invasive plant management at the HB Tailings site and Resource Recovery facilities in 2024, has been received.

**RECOMMENDATION:**
**[All Areas]**

That the Board direct Staff to proceed with Central Kootenay Invasive Species Society's 2024 Option #1 (Recommended) treatment options for all sites, which involves the use of herbicides and/or mechanical treatments to control invasive species dependent on site specific conditions.

**7. LANDFILL GAS FEASIBILITY STUDY UPDATE** 83 - 86

The March 20, 2024 Committee Report from Heidi Bench, Resource Recovery Projects Advisor, providing an update regarding landfill gas management feasibility study funding opportunities and to seek direction to apply for a Green Municipal Fund business case grant through the Federation of Canadian Municipalities, has been received.

**RECOMMENDATION:**
**[All Areas]**

That the Board authorize Staff to apply for an Organic Waste-to-Energy business case grant from the Green Municipal Fund to assess viable waste-to-energy systems and business models for Creston and Ootischenia landfills;

AND FURTHER, that the balance of funding for this study, up to a maximum of $7,000, be covered by Local Government Climate Action Program funding in Service 100 – General Administration, should the grant application be successful.

**8. ROLL-OFF BIN PURCHASES** 87 - 89

The April 9, 2024 Committee Report from Larry Brown, Resource Recovery Operations Supervisor, seeking authorization to purchase six roll off bins for the collection and transport of waste from transfers station to the Ootischenia Landfill, Nakusp Landfill and Creston Landfill, has been received.

**RECOMMENDATION:**
**[All Sub-regions]**

That the Board authorize staff to purchase six roll off bins from Fusion West Manufacturing up to a total cost of $103,445 (excluding GST) with the bins and cost to be evenly split by the West Waste Service S188 and Central Waste Service S187 and East Waste Service S186, Capital Expenditures;

AND FURTHER, that the Chair and Corporate Officer be authorized to sign the necessary documents.

**9. KOKANEE CREEK MARINA RECYCLING DEPOT** 90 - 92

The April 17, 2024 Committee Report from Akane Norimatsu, Resource Recovery Technician, presenting an update on the change of ownership of Kokanee Creek Marina Recycling Depot and obtain direction from the Joint Resource Recovery Committee for future operation of this depot, has been received.

**RECOMMENDATION:**
**[Central Sub-region]**

That resolution #57/24 being:

That the Board direct staff not to enter into a Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot and permanently close the Kokanee Creek Marina Recycling Depot effective May 31, 2024.

Be amended to read:

That the Board authorize staff to extend the Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot until July 31, 2024.

**10. 2023 RCBC SUMMARY REPORT** 93 - 106

The RCBC Information Services Report 2023 Summary - British Columbia prepared by the Recycling Council of British Columbia, has been received.

Akane Norimatsu, Resource Recovery Technician, will provide a verbal report on the 2023 Recycling Council of British Columbia Summary Report.

## 11. PUBLIC TIME

The Chair will call for questions from the public and members of the media at approximately 3:45 pm PST / 4:45 pm MST.

## 12. ADJOURNMENT

**RECOMMENDATION:**

The Joint Resource Recovery Committee meeting adjourn at _____ am PST /_____ pm MST.

# Regional District of Central Kootenay

## JOINT RESOURCE RECOVERY COMMITTEE MEETING

### Open Meeting Minutes

A Joint Resource Recovery Committee meeting was held on Wednesday, February 14, 2024 1:00 pm PST / 2:00 pm MST through a hybrid meeting model.

| | | | |
|---|---|---|---|
| **ELECTED OFFICIALS PRESENT** | Director G. Jackman | Electoral Area A | In-person |
| | Director R. Tierney | Electoral Area B | In-person |
| | Director K. Vandenberghe | Electoral Area C | In-person |
| | Director A. Watson | Electoral Area D | In-person |
| | Alt. Director J. Smienk | Electoral Area E | In-person |
| | Director H. Cunningham | Electoral Area G | In-person |
| | **Director W. Popoff** | **Electoral Area H (Chair)** | In-person |
| | Director A. Davidoff | Electoral Area I | |
| | Director H. Hanegraaf | Electoral Area J | |
| | Director T. Weatherhead | Electoral Area K | In-person |
| | Director M. McFadden | City of Castlegar | |
| | Director A. Deboon | Town of Creston | |
| | Director S. Hewat | Village of Kaslo | In-person |
| | Director T. Zeleznik | Village of Nakusp | |
| | Director K. Page | City of Nelson | In-person |
| | Director L. Casley | Village of New Denver | |
| | Director D. Lockwood | Village of Salmo | In-person |
| | Director L. Main | Village of Silverton | |
| | Alt. Director E. Buller | Village of Slocan | |
| **ELECTED OFFICIALS ABSENT** | Director T. Newell | Electoral Area F | |
| **STAFF PRESENT** | S. Horn | Chief Administrative Officer | |
| | U. Wolf | GM – Environmental Services | In-person |
| | A. Wilson | Resource Recovery Manager | In-person |
| | H. Bench | Projects Advisor | |
| | A. Norimatsu | Resource Recovery Technician | In-person |
| | S. Eckman | Meeting Coordinator | In-person |
| | N. Metz | Alt. Meeting Coordinator | In-person |

**1. WEBEX REMOTE MEETING INFO**

**Join by Meeting Link:**
https://nelsonho.webex.com/nelsonho/j.php?MTID=m5aebf59604b5075b9aae7a5681d5c938

**Meeting Number (access code):** 2771 125 3382
**Meeting Password:** eRnMec9Mq23 (37663296 from phones

**Join by Phone:**
+1-604-449-3026 Canada Toll (Vancouver)

**In-Person Meeting Location for Hybrid Meeting Model**
The following location was determined to hold the in-person meetings for the Joint Resource Recovery Committee:

**Location Name:** RDCK Board Room
**Location Address:** 202 Lakeside Drive, Nelson, BC

**2. CALL TO ORDER & WELCOME**

Director Watson called the meeting to order at 1:02 pm PST / 2:02 pm MST.

**3. ELECTION OF INTERIM COMMITTEE CHAIR FOR FEBRUARY 14, 2024 MEETING**

**3.1 Call for Nominations (3 Times)**

Director Watson called for nominations the first time.
Nomination for Director Popoff.
Director Watson called for further nominations the second and third time.

**3.2 Opportunity for Candidates to Address the Committee**

No address.

**3.3 Vote By Secret Ballot**

No vote.

**3.4 Declaration of Elected or Acclaimed 2024 West Resource Recovery Committee Chair**

Director Watson declared Director Popoff being acclaimed as Chair of the Joint Resource Recovery Committee for the February 14, 2024 meeting.

**3.5 Destroy Ballots**

No ballots.

**4. CHAIR'S ADDRESS**

Chair Popoff thanked the Committee for their support.

**5. COMMENCEMENT OF REGULAR COMMITTEE MEETING**

Director Popoff, West Resource Recovery Committee Chair assumed the chair.

**5.1 Traditional Lands Acknowledgement Statement**

We acknowledge and respect the indigenous peoples within whose traditional lands we are meeting today.

**5.2 Adoption of the Agenda**

**Moved** and seconded,
And resolved:

The Agenda for the February 14, 2024 Joint Resource Recovery Committee meeting be adopted with the inclusion of the Addendum, before circulation.

Addendum includes:

- Agenda Item No. 11: Draft 2024-2028 Financial Plans: Services S187 & A117

**Carried**

**5.3 Receipt of Minutes**

The December 13, 2023 Joint Resource Recovery Committee Minutes have been received.

**6. WASTE COMPOSITION STUDY**

The January 31, 2024 Committee Report from Heidi Bench, Projects Advisor, presenting the RDCK's first Comprehensive Waste Composition Study, has been received.

**7. LANDFILL GAS ASSESSMENTS: CRESTON, CENTRAL & OOTISCHENIA LANDFILLS**

The January 26, 2024 Committee Report from Heidi Bench, Projects Advisor, presenting the results of the 2023 Landfill Gas Generation Assessments completed at Creston, Central, and Ootischenia landfills and seeking direction for how to proceed with regards to management of landfill gas at RDCK landfills, has been received.

**Moved** and seconded,
**MOTION ONLY:**

That the Board direct Staff to apply to the Local Government Climate Action Program (LGCAP) fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas (LFG) management at the Creston and Ootischenia Landfills.

**Moved** and seconded,
**AMENDMENT TO THE MOTION**

The foregoing motion being:

That the Board direct Staff to apply to the Local Government Climate Action Program (LGCAP) fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas (LFG) management at the Creston and Ootischenia Landfills.

Be amended to include the words 'AND FURTHER that the RDCK request Fortis BC partner with the RDCK to complete a feasibility study in support of its long term strategy to implement Landfill Gas management.', thus reading:

*That the Board direct Staff to apply to the Local Government Climate Action Program (LGCAP) fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas (LFG) management at the Creston and Ootischenia Landfills;*

*AND FURTHER that the RDCK request Fortis BC partner with the RDCK to complete a feasibility study in support of its long term strategy to implement Landfill Gas management.*

**Carried**

**Moved** and seconded,
And resolved that it be **recommended** to the Board:
**MAIN MOTION**

That the Board direct Staff to apply to the Local Government Climate Action Program (LGCAP) fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas (LFG) management at the Creston and Ootischenia Landfills;

AND FURTHER that the RDCK request Fortis BC partner with the RDCK to complete a feasibility study in support of its long term strategy to implement Landfill Gas management.

**Carried**

**8. RECYCLING DEPOT LEASE AGREEMENTS: NEW DENVER, SALMO & LAKESIDE**

The February 5, 2024 Committee Report from Akane Norimatsu, Resource Recovery Technician, seeking Board approval for the renewals and extensions of the recycling depot lease contracts including adjustments to contract terms and fees, has been received.

**Moved** and seconded,
And resolved that:

The following recommendation be ***deferred*** to the March 11, 2024 Joint Resource Recovery Committee meeting:

That the Board authorize staff to renew the Lease Contract with the City of Nelson for the Nelson Lakeside Recycling Depot for the term of January 1, 2024 to December 31, 2025 at the cost of $63,974.40 per year;

AND FURTHER, that the costs be paid from Service No. A117 – Central Recycling.

**Carried**

**RECESS** Meeting recessed from 2:31 pm to 2:42 pm PST.

**Moved** and seconded,
And resolved that it be **recommended** to the Board:

That the Board authorize the renewal of the Lease Contract with the Village of Salmo for the Salmo Recycling Depot for the term of July 1, 2020 to June 31, 2025 with proposed rental fees of $566.80 (plus GST) per month; subject to renewal of insurance requirements;

AND FURTHER, that the costs be paid from Service No. A117 – Central Sub-region Recycling.

**Carried**

**Moved** and seconded,
**MOTION ONLY:**

That the Board authorize the renewal of the Lease Contract with the Village of New Denver for the New Denver recycling depot for the term of June 14, 2020 to June 15, 2025;

AND FURTHER, that the costs be paid from Service No. A118 – West Sub-region Recycling.

**Moved** and seconded,
**AMENDMENT TO THE MOTION**

The foregoing motion being:

That the Board authorize the renewal of the Lease Contract with the Village of New Denver for the New Denver recycling depot for the term of June 14, 2020 to June 15, 2025;

AND FURTHER, that the costs be paid from Service No. A118 – West Sub-region Recycling.

Be amended by adding the words 'AND FURTHER, that although no rental fees are charged by the Village of New Denver, the RDCK will be responsible for utilities charges incurred.', thus reading:

*That the Board authorize the renewal of the Lease Contract with the Village of New Denver for the New Denver recycling depot for the term of June 14, 2020 to June 15, 2025;*

*AND FURTHER, that the costs be paid from Service No. A118 – West Sub-region Recycling.*

*AND FURTHER, that although no rental fees are charged by the Village of New Denver, the RDCK will be responsible for utilities charges incurred.*

**Carried**

**Moved** and seconded,
And resolved that it be **recommended** to the Board:
**MAIN MOTION**

That the Board authorize the renewal of the Lease Contract with the Village of New Denver for the New Denver recycling depot for the term of June 14, 2020 to June 15, 2025;

AND FURTHER, that the costs be paid from Service No. A118 – West Sub-region Recycling.

AND FURTHER, that although no rental fees are charged by the Village of New Denver, the RDCK will be responsible for utilities charges incurred.

**Carried**

**DIRECTORS ABSENT** Director McFadden, Director Casley and Director Deboon left the meeting at 3:01 pm PST.

**9. CENTRAL SUB-REGION RECYCLING SERVICES**

The DRAFT letter to the City of Nelson responding to their request for a review of how communities that collect recycling at the curbside are being taxed for recycling services, has been received.

**10. EXTENDED PRODUCER RESPONSIBILITY PROGRAM CONCERNS**

Amy Wilson, Resource Recovery Manager will provide an update on the letter being drafted from the Board to the Province to address Extended Producer Responsibility (EPR) program concerns and to seek direction from the Committee on the focus of the letter.

Suggested framework for the letter includes:

- Recycle BC (RBC) Printed Paper and Packaging (PPP) collection costs RDCK taxpayers approximately $1M annually beyond RBC program incentives.
- High cost of Industrial, Commercial, and Institutional PPP recycling.
- High cost of Household Hazardous Waste management in RDCK.
- Low to no service for many EPR programs in remote areas.
- Concern about how to prepare for new EPR programs such as mattresses, tanks, batteries when there is little to no funding for capital infrastructure and low compensation for on-going operational costs.

**POINT OF ORDER** Director Davidoff called a point of order for allowing the following recommendation to be put to vote.

*That the RDCK submit an invoice in the amount of $1,000,000 to the Province of British Columbia, RecycleBC and any other appropriate entities to recoup the annual costs paid by RDCK ratepayers for recycling costs beyond RBC program incentives that should be fully funded.*

Chair Popoff ruled the motion out of order.

Director Davidoff challenged Chair Popoff's ruling on the point of order.

**Moved** and seconded,
And Resolved:

The Chair was sustained by the simple majority.

**Carried**

**11. DRAFT 2024-2028 FINANCIAL PLANS: SERVICES S187 & A117**

The following revised Draft 2024-2028 Financial Plans have been received:

a. Service S187: Central Resource Recovery
b. Service A117: Recycling Program - Central Subregion

**12. PUBLIC TIME**

The Chair called for questions from the public and members of the media 3:45 pm PST /4:45 pm MST.

**13. ADJOURNMENT**

**Moved** and seconded,
And resolved:

The Joint Resource Recovery Committee meeting adjourn at 3:45 pm PST /4:45 pm MST.

**Carried**

CERTIFIED CORRECT

Director W. Popoff, Chair
February 14, 2024
Joint Resource Recovery Committee meeting

## BOARD RESOLUTIONS AS ADOPTED AT THE FEBRUARY 14, 2024 JOINT RESOURCE RECOVERY COMMITTEE MEETING

**RECOMMENDATION #1**
That the Board direct Staff to apply to the Local Government Climate Action Program (LGCAP) fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas (LFG) management at the Creston and Ootischenia Landfills;

AND FURTHER that the RDCK request Fortis BC partner with the RDCK to complete a feasibility study in support of its long term strategy to implement Landfill Gas management.

**RECOMMENDATION #2**
That the Board authorize the renewal of the Lease Contract with the Village of Salmo for the Salmo Recycling Depot for the term of July 1, 2020 to June 31, 2025 with proposed rental fees of $566.80 (plus GST) per month; subject to renewal of insurance requirements;

AND FURTHER, that the costs be paid from Service No. A117 – Central Sub-region Recycling.

**RECOMMENDATION #3**
That the Board authorize the renewal of the Lease Contract with the Village of New Denver for the New Denver recycling depot for the term of June 14, 2020 to June 15, 2025;

AND FURTHER, that the costs be paid from Service No. A118 – West Sub-region Recycling.

AND FURTHER, that although no rental fees are charged by the Village of New Denver, the RDCK will be responsible for utilities charges incurred.

# Committee Report

| | |
|---|---|
| **Date of Report:** | April 10, 2024 |
| **Date & Type of Meeting:** | April 17, Joint Resource Recovery Committee |
| **Author:** | AJ Evenson, Senior Project Manager |
| **Subject:** | WEST SUBREGION TRANSFER STATION UPGRADE-CONTRACT AWARD |
| **File:** | 01-0600-2-2023 Projects-2023 Resource Recovery Projects-NAK-ROS-SLO |
| **Electoral Area/Municipality** | West Subregion |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to request a financial plan amendment and a loan authorization bylaw to advance on the West Transfer Station Upgrade projects and to also request that the contract for the Nakusp, Rosebery and Slocan Transfer Station Upgrades be awarded to North Mountain Construction Ltd.

## SECTION 2: BACKGROUND/ANALYSIS

The 2021 Resource Recovery Plan (RRP) outlines plans to move forward with upgrading the Rosebery and Slocan transfer stations, and transitioning the Nakusp landfill to a transfer station in the coming years.

Engineering consultant Sperling Hansen Associates (SHA) completed the detailed design for the Nakusp, Rosebery and Slocan sites in February 2024 and the tender package was posted to BCBid on February 26, 2024. The opportunity closed on March 28, 2024 with 3 bids received as follows:

| | North Mountain | MarWest | Kettle River |
|---|---|---|---|
| **Nakusp** | $1,322,227.25 | $2,176,174.19 | $2,799,683.11 |
| **Rosebery** | $543,298.00 | $970,547.60 | $1,403,597.05 |
| **Slocan** | $712,475.00 | $806,421.51 | $1,696,039.68 |
| **Total** | **$2,578,000.25** | **$3,953,143.30** | **$5,899,319.84** |

SHA and staff recommend awarding to North Mountain Construction Ltd as they are the low valid bidder and have extensive experience with civil projects of similar size and complexity.

The project is estimated to start in late April with completion by late November 2024. Detailed schedules for each site identified below:

**MILESTONES DATES:**

**Nakusp**

| | |
|---|---|
| Construction Commencement: | 30 April, 2024 |
| Substantial Performance: | 20 June, 2024 |
| Total Performance: | 30 June, 2024 |

**Rosebery**

| | |
|---|---|
| Construction Commencement: | 2 July, 2024 |
| Substantial Performance: | 20 August, 2024 |
| Total Performance: | 30 August, 2024 |

**Slocan**

| | |
|---|---|
| Construction Commencement: | 1 September, 2024 |
| Substantial Performance: | 20 November, 2024 |
| Total Performance: | 30 November, 2024 |

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

**Included in Financial Plan:** ☒ Yes ☐ No **Financial Plan Amendment:** ☒ Yes ☐ No

**Debt Bylaw Required**: ☒ Yes ☐ No **Public/Gov't Approvals Required:** ☒ Yes ☐ No

As per table below (excluding GST), the total bid by North Mountain is slightly lower than Sperling Hansen's engineer's pre-tender estimate (including a 10% contingency) resulting in all three sites coming in below the combined budgeted total in West Resource Recovery Service S188. The pre-tender estimates were received after the Draft 2024 Financial Plan was presented to the West Resource Recovery Committee. It was deemed prudent to wait until construction tenders were received before requesting a potential financial plan amendment.

| | RDCK Total Budget | RDCK Construction Only Budget | Engineer's Pre-Tender Estimate | North Mountain | MarWest | Kettle River |
|---|---|---|---|---|---|---|
| **Nakusp** | $1,426,940 | $1,196,940 | $1,559,822 | $1,322,202 | $2,176,174 | $2,799,683 |
| **Rosebery** | $488,050 | $358,050 | $544,388 | $543,298 | $970,548 | $1,403,597 |
| **Slocan** | $717,240* | $587,240 | $499,675 | $712,475 | $806,422 | $1,696,040 |
| **Total** | **$2,632,230** | **$2,142,230** | **$2,603,885** | **$2,577,975** | **$3,953,143** | **$5,899,320** |

**includes funds in CAP973-100 Slocan Transfer Station Washroom project*

The above amounts are for construction only and do not include the estimated cost for compactors, bins, power upgrades, or consulting as noted below. Also presented below is a 5% contingency on construction costs to cover potentially unforeseen project costs and operational costs for alternative operations during site closures.

| **Other Costs** | |
|---|---|
| Compactors & Bins (4 x $100,000) | $ 400,000 |
| Consulting (Design and construction admin) | $ 175,000 |
| Power Upgrades (3 X $50,000) | $ 150,000 |
| **Total Other Costs** | **$ 725,000** |
| Low Valid Bid - Construction | $ 2,577,975 |
| 5% Contingency | $ 128,899 |
| **Total Estimated Project Costs** | **$ 3,431,874** |
| Total Capital Expenditure Budget | $ 2,632,230 |
| Deficit | $ (799,644) |

The RDCK 2024 Financial Plan calls for the Nakusp and Slocan projects to be funded by long term borrowing and the Rosebery project was to be funded by regular reserves. Additionally, $336,782 in Growing Communities Fund grant money was received for these projects, and was used to offset some of the borrowing for the Nakusp project.

The West Waste Regular reserve has an expected balance of $3,077,740 at year end of 2024 and the West Waste Stabilization Reserve will have $2,163,260. Staff recommend using reserves to fund the additional cost for the projects to proceed in 2024. The proposed amendments to the RDCK 2024 Financial Plan are as follows:

- Increase Transfer From Reserves revenue account by $799,644 to a total of $1,331,694
- Increase of Capital Expenditures account for:
    - Nakusp (CAP1116-100) by $311,617 to a total of $1,738,557
    - Rosebery (CAP1120-100) by $262,102 to a total of $750,152
    - Slocan (CAP1425-100) by $225,925 to a total of $943,165

The 2021 Resource Recovery Plan underwent public consultation and was approved by the Province in 2023. The RRP included the scope and cost for the Nakusp and Slocan transfer station upgrades, including the intention for long term borrowing for each project for a value of up to $1,103,448 (Nakusp) and $1,545,899 (Slocan). Provisions in section 407(2) of the Local Government Act (LGA), section 24(7) of the Environmental Management Act (EMA), and B.C. Reg 261/2004 (Regional District Liabilities Regulation) define when regional district loan authorization bylaws are exempt from approval of the electors. The EMA provisions state regional district bylaws adopted for the purpose of preparing or implementing a waste management plan do not require assent or approval of the electors.

Based on the direction of the RRP and the 2024 Financial Plan staff prepared the Loan Authorization Bylaw No. 2962 (Attachment A) for consideration of first, second and third readings by the Board to expedite the long term borrowing process to ensure funds can be attained as part of fall 2024 borrowing. Due to the two projects being in the same service (S188 West Waste) their funding can be combined into one borrowing process for a total of $1,763,398 to be repayed over a 25 year term.

The following table summarizes the total project costs and method of funding for each project.

| Site | Nakusp | Rosebery | Slocan |
|---|---|---|---|
| Total Project Cost | $1,738,557 | $750,152 | $943,165 |
| Borrowing | ($1,090,158) | - | ($673,240) |
| Growing Communities Grant Funding | ($336,782) | - | - |
| Reserves | ($311,617) | ($750,152) | ($269,925) |

The Nakusp and Slocan projects could increase the portion of their funding from borrowing up to the values from the RRP. However, since the West Waste reserves have sufficient capacity, staff recommend maintaining the long term borrowing values in the 2024 Financial Plan to limit loan repayment costs.

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

As described in section above.

### 3.3 Environmental Considerations

None at this time.

### 3.4 Social Considerations:

Construction activities at these sites will have an impact on the public's access of the sites, as there could potentially be disruption of service or modification of provided services while the sites are under construction.

Both Rosebery and Slocan are expected to experience service disruption during construction. This may include temporary bins or redirection to the nearest waste facility. Hours of operation could be adjusted to accommodate volumes and traffic.

Nakusp would not likely impact services at the landfill, as the proposed transfer area is outside of the current waste acceptance areas. Construction could take place while maintaining access to the active face, waste transfer bins, wood waste, yard & garden, and metal drop off areas.

### 3.5 Economic Considerations:

None at this time.

### 3.6 Communication Considerations:

None at this time.

### 3.7 Staffing/Departmental Workplace Considerations:

This project is in the work plan for project management, resource recovery and corporate administration staff.

### 3.8 Board Strategic Plan/Priorities Considerations:

- Manage our assets and service delivery in a fiscally responsible manner
- Reduce operational costs
- Innovate to reduce the impact of waste
- Implement the RDCK Resource Recovery Plan

## SECTION 4: OPTIONS & PROS / CONS

**OPTION 1:**

**RECOMMENDATION #1:**

That the Board approve an amendment to the 2024 Financial Plan for the West Waste Service S188 Transfer from Reserves to increase by $799,644 and Capital Expenditures accounts to increase by the following amounts for the West Transfer Station Upgrades projects:

- Nakusp (CAP1116-100) $311,617
- Rosebery (CAP1120-100) $262,102
- Slocan (CAP1425-100) $225,925

**RECOMMENDATION 2:**

That the Upgrades at the Nakusp and the Slocan Transfer Stations Bylaw No. 2962, 2024 be read a FIRST, SECOND, and THIRD time by content.

**RECOMMENDATION #3:**

That the Board authorize staff to enter into a Services Agreement with North Mountain Construction Ltd for the Nakusp, Rosebery and Slocan Transfer Station Upgrades in the amount of $2,577,975.29 not including GST; AND FURTHER that the Board Chair and Corporate Officer be authorized to sign the necessary documents; AND FURTHER that the costs be paid from Service S188 West Sub-Region Resource Recovery

**PROS:**

- Work can start in late April and be completed and paved prior to the arrival of winter.
- Pricing received is competitive and very close to the engineer's estimate.
- A local contractor (based out of Nelson) is the low valid bidder.
- Advancing on the loan authorization bylaw allows for adequate time to acquire long term borrowing funds in 2024.

**CONS:**

- Higher than originally anticipated construction costs requiring a financial plan amendment.

**OPTION 2: That the Board direct staff to reject all buds received due to exceedance of current budget and re-issue the tender later in the year.**

**PROS:**

- May result in additional bids leading to lower overall construction costs.

**CONS:**

- Would result in additional consulting time and costs.
- Would result in additional project management time and costs.
- Scope of work would not be completed in 2024, extending into 2025 which may result in additional costs.
- May not result in additional bids or lower overall construction costs.

## SECTION 5: RECOMMENDATIONS

**RECOMMENDATION #1:**

That the Board approve an amendment to the 2024 Financial Plan for the West Waste Service S188 Transfer from Reserves to increase by $799,644 and Capital Expenditures accounts to increase by the following amounts for the West Transfer Station Upgrades projects:

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Respectfully submitted,

AJ Evenson, Senior Project Manager

## CONCURRENCE

Resource Recovery Manager
General Manager of Environmental Services
General Manager of Finance
Chief Administrative Officer

**ATTACHMENT**: West Waste Management Subregion Refuse Disposal/Recycling Service (Nakusp & Slocan Transfer Stations) Loan Authorization Bylaw No. 2962, 2024

## REGIONAL DISTRICT OF CENTRAL KOOTENAY

# Bylaw No. 2962

A bylaw to authorize the borrowing of the estimated cost of One Million Seven Hundred Sixty Three Thousand Three Hundred Ninety Eight Dollars ($1,763,398) for the upgrades at the Nakusp and the Slocan Transfer Stations.

WHEREAS the Regional Board of the Regional District of Central Kootenay has established West Waste Management Subregion Refuse Disposal/Recycling Local Service Area Establishment Bylaw No. 1070, 1994, a service to provide refuse disposal and recycling within the West Waste Management Subregion Refuse Disposal/Recycling Local Service Area;

AND WHEREAS it is deemed desirable and expedient to upgrade the Nakusp ($1,090,158) and Slocan ($673,240) Transfer Stations, which includes construction and operational equipment costs;

AND WHEREAS the estimated cost of the upgrades to the Nakusp and Slocan Transfer Stations including expenses incidental thereto is the sum of One Million Seven Hundred Sixty Three Thousand Three Hundred Ninety Eight Dollars ($1,763,398), of which the sum of $1,763,398 is the amount of debt intended to be borrowed by this bylaw;

AND WHEREAS the maximum term for which a debenture may be issued to secure the debt created by this bylaw is for a term not to exceed twenty five (25) years;

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

**1** The Regional Board is hereby empowered and authorized to undertake and carry out or cause to be carried out the upgrades to the Nakusp ($1,090,158) and Slocan ($673,240) Transfer Stations, serving the West Waste Management Subregion Refuse Disposal/Recycling Local Service Area, generally in accordance with plans on file in the regional district office and to do all things necessary in connection therewith and without limiting the generality of the foregoing:

(a) To borrow upon the credit of the Regional District a sum not exceeding One Million Seven Hundred Sixty Three Thousand Three Hundred Ninety Eight Dollars ($1,763,398).

(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 upgrades to the Nakusp and Slocan Transfer Stations.

**2** The maximum term for which debentures may be issued to secure the debt created by this bylaw is twenty five (25) years.

**3** This bylaw may be cited as **"West Waste Management Subregion Refuse Disposal/Recycling Service (Nakusp & Slocan Transfer Stations) Loan Authorization Bylaw No. 2962, 2024"**.

| | | | |
|---|---|---|---|
| READ A FIRST TIME this | 18th | day of | April , 2024 |
| READ A SECOND TIME this | 18th | day of | April , 2024 |
| READ A THIRD TIME this | 18th | day of | April , 2024 |

I hereby certify that this is a true and correct copy of the **"West Waste Management Subregion Refuse Disposal/Recycling Service (Nakusp & Slocan Transfer Stations) Loan Authorization Bylaw No. 2962, 2024"** as read a third time by the Regional District of Central Kootenay Board on the 18th day of April, 2024.

Mike Morrison, Corporate Officer

RECEIVED the approval of the Inspector of Municipalities this day of , 2024.

ADOPTED this day of , 2024.

Aimee Watson, Board Chair

Mike Morrison, Corporate Officer

# Committee Report

| | |
|---|---|
| **Date of Report:** | March 20, 2024 |
| **Date & Type of Meeting:** | April 17, 2024 Joint Resource Recovery Committee |
| **Author:** | AJ Evenson, Senior Project Manager and Alayne Hamilton, Environmental Projects Lead |
| **Subject:** | HB TAILINGS FACILITY 2024 EROSION CONTROL WORKS-CONTRACT AWARD |
| **File:** | 12-6300-HBD-01 |
| **Electoral Area/Municipality** | Central Sub-Region |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to request that the contract for the HB Tailings Facility 2024 Erosion Control Works be awarded to Brenton Industries Ltd.

## SECTION 2: BACKGROUND/ANALYSIS

As part of the HB Remediation and Closure project, an amended *Mines Act* permit had to be applied for to include all roads and on-site materials sources that would be used in the project. The 2021 amended *Mines Act* permitted area now includes the tailings facility, a sand and gravel borrow above the landfill site entrance, a till borrow that surrounds the Central Compost Facility, a number of landfill and dam access roads, and a riprap quarry. At the time of the application, the RDCK's intent was to apply for removal of the permitted areas from the borrows and landfill related roads as soon as possible after the site stabilized as the permit limits the RDCK's ability to use those areas for other non-mining uses, including borrowing for landfill needs, and storage for compost facility feedstock and finished compost.

In April 2023, some ditching around the permitted area were damaged in an extreme weather event (50 – 60 mm of rain in 24 hours). The damage was worsened by the lack of established vegetation on the site due to seeding in the fall of 2022 on completion of the HB Remediation and Closure project. Repair works were undertaken in April, May, and August 2023, within the existing available budgets, and recent inspections have indicated that the repairs were successful. Additional seed was applied to areas with poor vegetation establishment in May and August, including in the borrow areas.

In September 2023, the RDCK applied to remove the *Mines Act* permitted area from the borrows and landfill site roads. The application included descriptions of the areas to be removed, as well as an explanation that as the areas were privately owned, they should not be held to the *Mines Act* requirement for full reclamation of the site as the areas would be disturbed again in the immediate future as part of ongoing landfill and compost facility operations.

In December 2023, another extreme weather event that included significant warming and heavy rain-on-snow (>100 mm of rain in 48 hours) caused damage to the Till Borrow. On an upper bench of the borrow, a very fine clay layer began deeply eroding, and some minor sloughing from an upper slope occurred. The source of heavy flows onto the top bench of the borrow is Iron Mountain to the east, and small finger drainages through the forest that form during extreme events. Through discussions with the sites Qualified Professionals, it was determined that repair works should be undertaken to correct the sloughing and erosion before the issue worsened.

On January 3, 2024, the Ministry responded to the RDCK's September application to remove the permitted area from the borrows and landfill site roads. The Ministry stated that in order to remove the permitted area from the landfill roads and borrows, the RDCK will need to demonstrate that the areas meet Section 10.7.6 of the Health, Safety, and Reclamation Code (Code) which requires that the land and access roads be left in a manner that ensures long-term physical stability. In order to meet this Code section and successfully remove the permitted area, the erosion and sloughing in the Till Borrow needs to be addressed.

SRK Consulting (Canada) Inc. was asked to provide engineering support to mitigate the erosion and sloughing at the Till Borrow. Concepts for upgrades were discussed on a conference call on January 10, 2024, with the RDCK and SLR Consulting (Canada) Ltd. (SLR), the sites Qualified Environmental Professional. Figure 1 on the following page outlines the final design, which includes the following scopes of work:

**Interception Ditch**

- An approximate 200 m long, shallow (0.6 m final depth) interception ditch will be excavated along the perimeter of the borrow area to direct surface water (and any shallow seepage) away from the borrow area.
- Based on test pits excavated in support of the 2020 HB Remediation and Closure Plan, it is estimated that the lacustrine (very fine clay) material could be present in the upper 100 m of the channel. If present, a layer of geotextile will be placed over the exposed lacustrine and 0.2 m of non-lacustrine soils placed over top.
- The entire channel is to be lined with an erosion control blanket.

**Slough Repair**

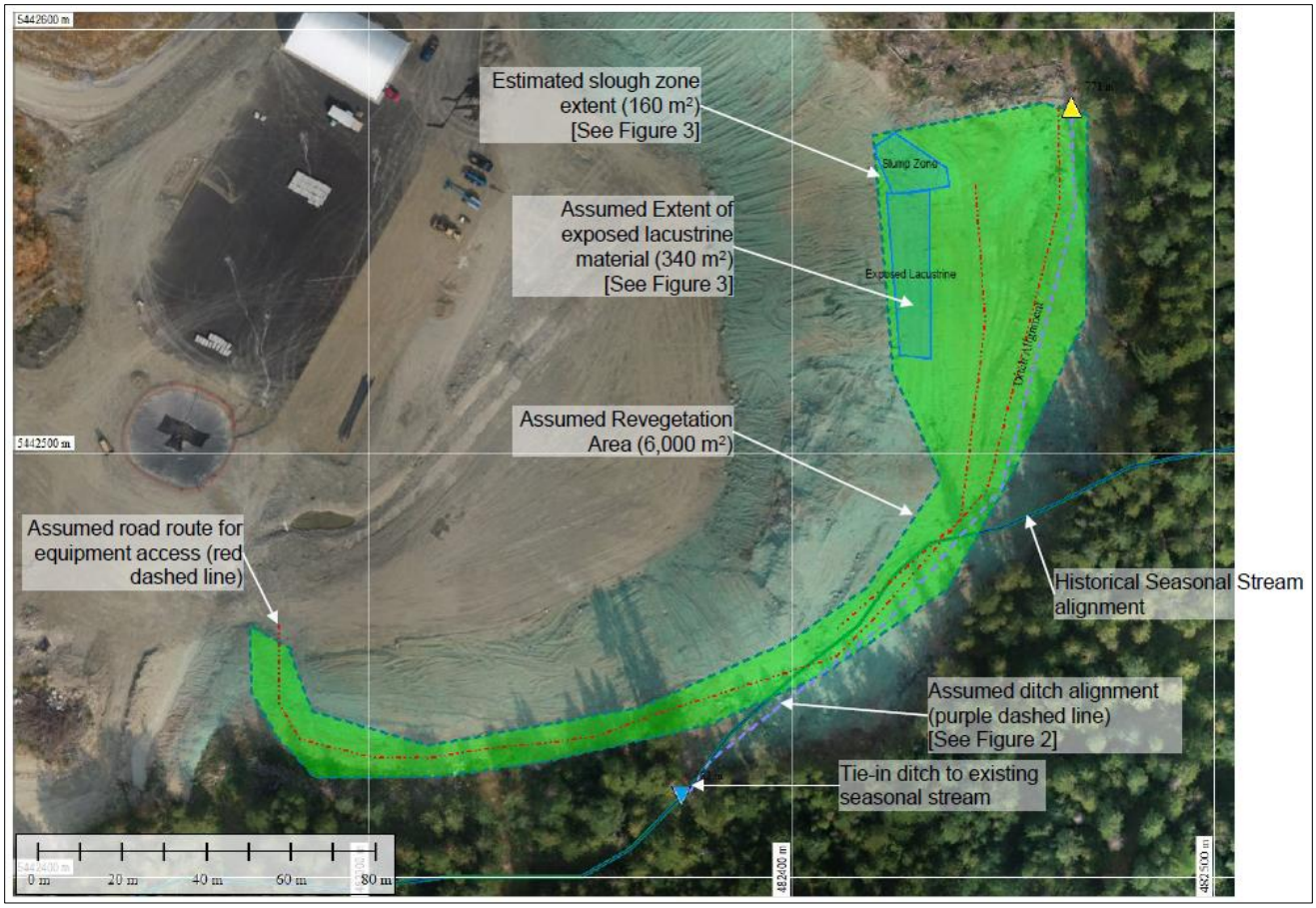
- Soft material from the slough at the northeast corner of the Till Borrow area is assumed to be removed and locally disposed.
- A layer of geotextile will be placed over the excavation area and the area will be covered by layer of coarse fill (imported ¾ inch minus road crush).
- A total of 80 $m^3$ of soft material/coarse material are assumed to be required.

**Exposed Lacustrine**

- A 4-hour allowance for an excavator and dozer is included to complete minor grading of the exposed lacustrine material present at the top of the borrow slope near the northeast corner of the borrow area.
- A layer of geotextile is assumed to be placed over an area of 340 $m^2$. The geotextile covered with a 0.5 m thick layer of soil either excavated from the interception ditch or from the composting biosolids stockpile west of the Compost Facility, if testing reveals it meets industrial land standards and can be land applied.

**Hydroseeding**

- The full area of disturbance, assumed to be roughly6,000 $m^2$, will be hydroseeded.




The final design and implementation measures were tendered out on BCBid on February 16, 2024 and closed on March 6, 2024 with the following 4 bids received:

| | |
|---|---|
| Brenton Industries | $87,490.84 |
| Dynamic Landscaping | $115,666.22 |
| Marwest | $121,089.58 |
| Kays Contracting | $127,640.00 |

The project is estimated to start in May 2024 with completion by June 30, 2024 subject to weather conditions.

Staff are recommending that the project be awarded to Brenton Industries Ltd.

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

| | | | | | |
|---|---|---|---|---|---|
| **Included in Financial Plan:** | ☒ Yes | ☐ No | **Financial Plan Amendment:** | ☐ Yes | ☒ No |
| **Debt Bylaw Required**: | ☐ Yes | ☒ No | **Public/Gov't Approvals Required:** | ☐ Yes | ☒ No |

The Engineer's estimate from SRK Consulting (Canada) Inc. was $85,000 for the general contractor's scope of work with an additional $9,000 required for hydroseeding once the general contractor has demobilized from site. The total estimated budget not including consultant design, construction administration or project management fees is $94,000.

The RDCK obtained a quote from Interior Reforestation to hydroseed the 6000 $m^2$ of disturbed area in the amount of $8,351 which will be set up as a separate contract so that the RDCK is in control of the hydroseed schedule and can ensure optimal conditions for seed germination. Therefore, the total estimated cost not including consultant design, construction administration or project management fees is estimated at $95,841 ($87,490 + $8,351) not including GST.

Within the 2024-2028 Financial Plan, there is $126,000 in Service S187 Central Resource Recovery for this work, which also includes on-site engineering costs for the projected 10 day period for construction, two environmental monitoring site visits, and as-built reporting. Staff are recommending awarding the project to Brenton Industries, at a total cost of up to $87,490.84 not including GST.

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

None at this time.

### 3.3 Environmental Considerations

None at this time.

### 3.4 Social Considerations:

None at this time.

### 3.5 Economic Considerations:

None at this time.

### 3.6 Communication Considerations:

None at this time.

### 3.7 Staffing/Departmental Workplace Considerations:

This project is in the work plan for project management staff.

### 3.8 Board Strategic Plan/Priorities Considerations:

- Manage our assets and service delivery in a fiscally responsible manner
- Energy efficiency and environmental responsibility

## SECTION 4: OPTIONS & PROS / CONS

**OPTION 1: That the Board authorize staff to enter into a Services Agreement with Brenton Industries Ltd. for the HB Tailings Facility 2024 Erosion Control Works in the amount of $87,490.84 not including GST; AND FURTHER that the Board Chair and Corporate Officer be authorized to sign the necessary documents; AND FURTHER that the Board direct staff to include the funds in the 2024 Financial Plan for Service S187.**

**PROS:**

- Work can start in May and be completed and hydroseeded prior to the hot dry summer season.
- Pricing received is competitive and very close to the engineer's estimate.
- A local contractor (based out of Kaslo) is the low valid bidder who is willing to work with the RDCK to schedule the work during the ideal weather window.

**CONS:**

- None.

**OPTION 2: That the Board direct staff to defer the project to later in the year.**

**PROS:**

- May result in additional bids leading to lower overall construction costs.

**CONS:**

- Would result in additional consulting time and costs.
- Would result in additional project management time and costs.
- Risk of not completing scope in 2024.
- May not results in additional bids or lower overall construction costs.
- Completing the project earlier in the construction season could lead to greater vegetation establishment on the exposed surfaces.

## SECTION 5: RECOMMENDATIONS

That the Board authorize staff to enter into a Services Agreement with Brenton Industries Ltd. for the HB Tailings Facility 2024 Erosion Control Works in the amount of $87,490.84 not including GST;

AND FURTHER that the Board Chair and Corporate Officer be authorized to sign the necessary documents;

AND FURTHER that the costs be paid from Service S187 Central Sub-Region Resource Recovery.

Respectfully submitted,

Alayne Hamilton – Environmental Projects Lead

AJ Evenson – Senior Project Manager

## CONCURRENCE

Resource Recovery Manager – Amy Wilson
General Manager of Environmental Services – Uli Wolf
GM Finance, IT and Economic Development – Yev Malloff
Chief Administrative Officer – Stuart Horn

**ATTACHMENTS:**
**Attachment A: SRK Consulting (Canada) Inc. 2024 Erosion Control Scope of Work and Cost Estimate**

srk consulting

SRK Consulting (Canada) Inc.
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Vancouver, BC V6C 1S9
Canada

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+1 778 508 3584 fax
vancouver@srk.com
www.srk.com

ATTACHMENT A

**Revision B – Issued For Review**

# Memorandum

| | | | |
|---|---|---|---|
| **To** | Alayne Hamilton | **Client** | Regional District of Central Kootenay |
| **From** | Peter Mikes, P.Eng. | **Project** | CAPR003031 |
| **Cc** | | **Date** | January 29, 2024 |
| **Subject** | Till Borrow Erosion Control Upgrades – Cost Estimate Basis | | |

**File name:** HB_TillBorrow_Cost Est Basis_CAPR003031_RevB_For-Review.docx

## 1 Introduction

SRK Consulting (Canada) Inc. was asked to provide engineering support to mitigate ongoing erosion at the Till Borrow Area adjacent to the Central Landfill near Salmo BC. Concepts for upgrades were discussed on a conference call on January 10, 2024, with the RDCK and SLR Consulting (Environmental Consultant for the site). The final design and implementation measures remain at a conceptual level and will be finalized in the spring and fill includes several field-fits. This memorandum presents the basis for a high-level cost estimate prepared to implement the for the erosion mitigation works. In general, conservative assumptions were adopted throughout the estimate and the true cost is expected to be lower than presented in this document.

## 2 Project Scope and Assumptions

The project scope of work included in the cost estimate includes the following tasks. Figure 1 in Attachment 1 provides a site overview of the works.

1. **Mobilization-Demobilization**
   - Mobilization/Demobilization of the prime contractor is assumed to be based in Castlegar with the following equipment fleet assumed for costing purposes:
     - One 20 tonne excavator
     - One 220 horsepower (HP) dozer
     - One 40 tonne articulated rock truck
     - One pick-up truck
     - An allowance for 1 low-boy trailer loads of ancillary equipment/supplies is also included.
   - No mobilization-demobilization costs are included for hydroseeding as previous hydroseeding projects for the RDCK have not been charged mob/demob costs.

- An allowance of $3,000 is included for administrative requirements for the contractor (H&S Plan, etc.) and for a kick-off meeting.

2. **Site Set-up and Water Management**

   - An allowance of 10 hours is included for an excavator/dozer to construct an access road up to the top of the borrow area from the south side (around the perimeter).
   - Silt fencing is assumed to be installed across the borrow area downgradient from where an interception ditch will be installed at the top of the borrow area.
   - A $3,000 allowance for pumping/water management is included.

3. **Construction Works**

   - Interception Ditch
     - An approximate 200 m long, shallow (0.6 m final depth) interception ditch will be excavated along the perimeter of the borrow area to direct surface water (and any shallow seepage) away from the borrow area to the south.
     - Based on test pits excavated in support of the 2020 RCP, it is estimated that lacustrine material could be present in the upper 100 m of the channel. If present, a layer of geotextile will be placed over the exposed lacustrine and 0.2 m of non-lacustrine soils placed over top.
     - The entire channel is to be lined with an erosion control blanket.
   - Slough Repair
     - Soft material from the slough at the northeast corner of the Till Borrow area is assumed to be removed and locally disposed.
     - A layer of geotextile will be placed over the excavation area and the area will be covered by layer of coarse fill (imported ¾ inch minus road crush).
     - A total of 80 $m^3$ of soft material/coarse material are assumed to be required.
   - Exposed Lacustrine
     - A 4-hour allowance for an excavator and dozer is included to complete minor grading of the exposed lacustrine material present at the top of the borrow slope near the northeast corner of the borrow area.
     - A layer of geotextile is assumed to be placed over an area of 340 $m^2$, and the geotextile covered with a 0.5 m thick layer of soil either excavated from the interception ditch or from the biosolid stockpile west of the Compost Facility.

4. **Site Reclamation**

   Following completion of the above tasks, the borrow area will be reclaimed by:

   - Decommissioning the access road to the top of the borrow area (roughened). An 8-hour allowance is included for a dozer and excavator to complete the reclamation.

- An allowance for hydroseeding an area of 6,000 $m^2$ is included in the estimate.

5. **Indirect Costs**

- Workplan Finalization:
  - A one-day site visit in the Spring is assumed to be completed in the Spring by the EOR, an intermediate engineer (based in Nelson), and the Environmental Consultant (SLR) to ground truth the conceptual design and confirm the erosion mitigation strategy.
  - An allowance of 40 hours of engineering time is included to finalize the design and provide tendering support.
- The total project duration has been estimated to be 8 to 10 days. This schedule is based on the summation of the individual task durations that were calculated by dividing the project quantity by task productivity. This schedule assumes a minimum number of concurrent tasks and is therefore believed to be conservative.
- The following contractor costs are included in the estimate:
  - 15% mark-up for project management construction services (head office support, etc.)
  - A $1,000 allowance for miscellaneous supplies
  - One pick-up truck
  - No living-out allowance (accommodation and meals) or travel allowance have been included in the estimate. The contractor is assumed to be local (i.e. based in the Salmo/Castlegar/Nelson/Trail area)
- The following owner costs are included in the estimate:
  - A construction record report.
  - Two one day-site visits by the EOR based in Cranbrook BC.
  - Two one day site visits by an environmental monitor based in Nelson BC.
- Construction supervision is assumed to be provided by the RDCK.

# 3 Cost Data Inputs

## 3.1 Unit Rates

Unit rates used in the estimate were developed based on SRK's experience on other projects of similar size and complexity. Material relocation costs were also evaluated using built up unit rates, and productivity calculations that follow common estimation procedures that are routinely used by earthwork contractors. Equipment rates used for these calculations were obtained from either the BC Blue Book 2023-24 (RBHCA 2023) or local contractor rates provided in 2023 to the RDCK for work at the Central Landfill. Budgetary quotes for material costs were obtained either from supplier quotes or from RSMeans Online – a cost database service that provides up-to-date construction cost data.

Coarse fill was assumed to be purchased from an offsite source in Castlegar and imported to site.

## 3.2 Quantities

Project quantities have been estimated from the site topography and from GIS software Areas and distances for the construction works area summarized in the figures in Attachment 1.

## 3.3 Contingency

Each line item in the cost estimate was assigned an estimate class (i.e., Class 3, 4, or 5) based on the project definition and engineering for each task according to the guidance provided in Table 1, to estimate a range of potential costs. In addition, a 20% contingency has been applied to the direct costs. Other major assumptions are noted in Section 3.4.

**Table 1: Cost Estimation Class Definitions**

| | Class 3 | Class 4 | Class 5 |
|---|---|---|---|
| Type | Feasibility estimate | Pre-feasibility study estimate | Order of Magnitude Estimate |
| Expected Accuracy | 15% overrun to -12% underrun | 25% overrun to -15% underrun | 50% overrun to -20% underrun |
| Level of project definition | 10% to 40% | 1% to 15% | 0% to 2% |
| Level of Engineering Completed | 10% to 40% | 1% to 5% | |

## 3.4 Other Assumptions

Other assumptions used in the estimate are as follows:

- Contract management, administration, and requirements will be provided by the RDCK.
- Project schedule is dayshift only, 7 days per week, with 10 hours of useful work completed per day.
- 2023 costs were escalated to 2024 Canadian Dollars assuming a 5% inflation rate.

# 4 Cost Summary

Table 2 provides a summary of the resulting cost estimate. A detailed cost breakdown is provided in Attachment 2.

**Table 2: Cost Estimate Summary**

| Item | Description | Estimated Probable Cost | Estimated Underrun Cost | Estimated Overrun Cost |
|---|---|---|---|---|
| DIRECT COSTS | | | | |
| 1 | Mob/Demob | $9,000 | $7,000 | $12,000 |
| 2 | Staging, Access, and Water Management | $8,000 | $7,000 | $10,000 |
| 3 | Construction Works | $37,000 | $32,000 | $48,000 |
| 4 | Site Reclamation | $9,000 | $8,000 | $13,000 |
| SUBTOTAL – DIRECT COSTS | | $64,000 | $54,000 | $83,000 |
| INDIRECT COSTS | | | | |
| 5.1 | Work Plan Finalization | $16,000 | $13,000 | $21,000 |
| 5.2 | Contractor Costs | $13,000 | $11,000 | $15,000 |
| 5.3 | Owner Costs | $15,000 | $14,000 | $18,000 |
| SUBTOTAL – INDIRECT COSTS | | $44,000 | $38,000 | $54,000 |
| CONTINTENCY | | $13,000 | $11,000 | $17,000 |
| COST ESCALATION TO 2024: | | $5,000 | $5,000 | $7,000 |
| | **TOTAL COST:** | **$126,000** | **$107,000** | **$160,000** |

Sources:https://srk.sharepoint.com/sites/NACAPR003031/Internal/Till_Borrow_Erosion_Mitigations/HB_TillBorrow_Upgrade_CostEstimate_rev00.xlsx?web=1

The total base cost is estimated to be $126,000 including contingencies with a range between $107k to $160k. A breakdown of costs by consultant for the estimated probable cost is as follows:

- Prime Construction Contractor: $85,000
- Hydroseeding Contractor: $9,000
- Engineering & Environmental Consultants: $33,000

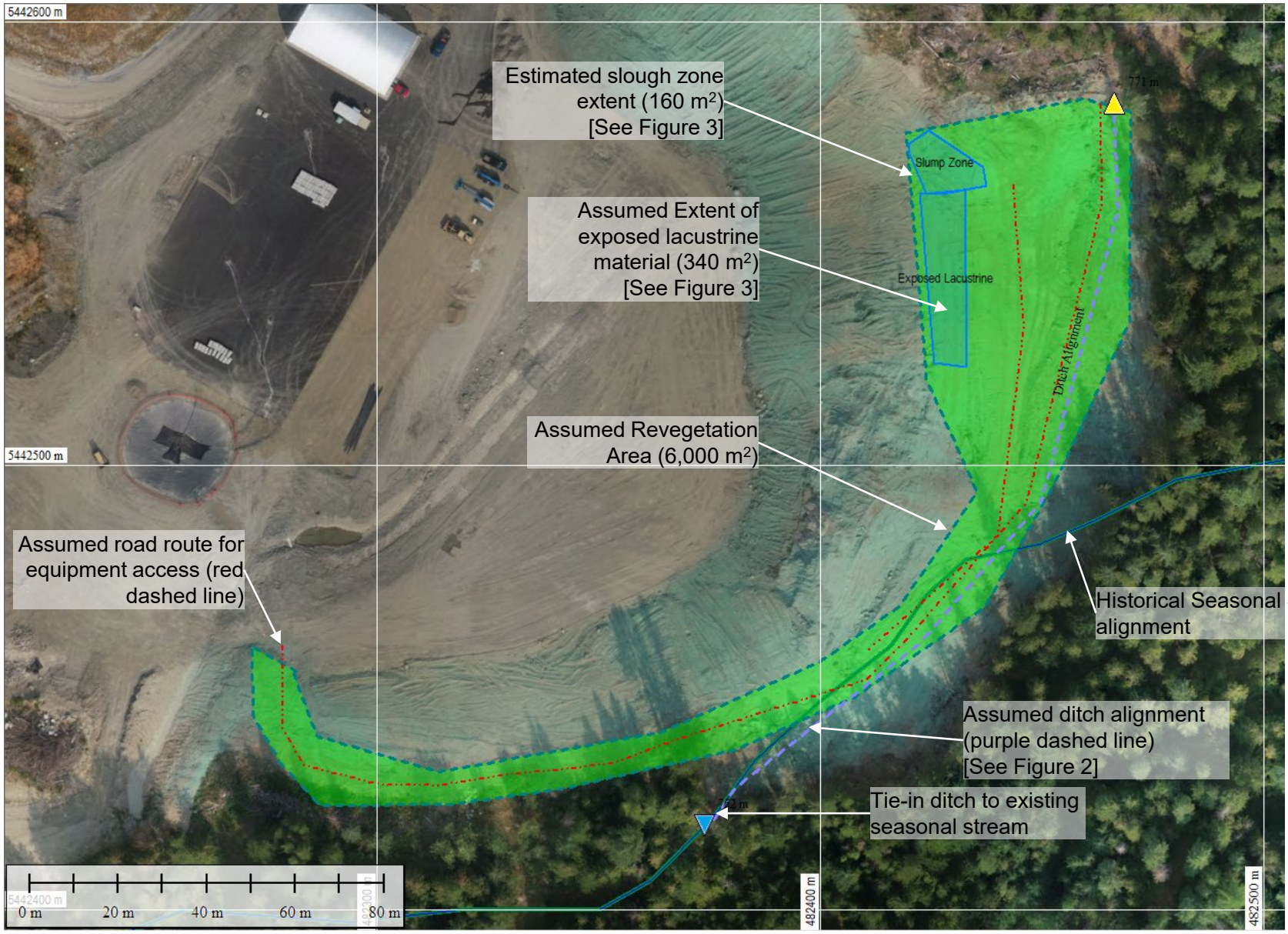
# 5 Closure

This memorandum, “Till Borrow Erosion Control – Cost Estimate Basis”, was prepared by:

ISSUED FOR REVIEW

Peter Mikes, P.Eng.
Principal Consultant

# Attachment 1 Figures




| | | | |
|---|---|---|---|
| srk consulting | | Till Borrow Erosion Cost Estimate | |
| | | **Conceptual Erosion Mitigation Measures** | |
| Job No: CAPR003031<br>Filename: TillBorrow_Erosion_Figure.pptx | 33 | HB Mine Tailings Facility | Date: January 2024 / Prepared by: P. Mikes / Figure: 1 |

srk consulting

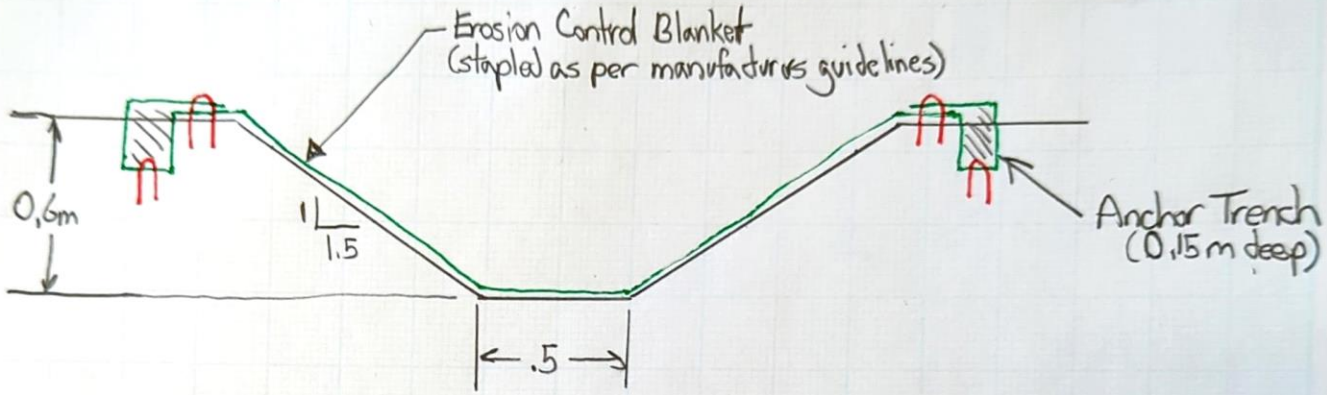
Project No. CAPR00 3031 Site HBTF

Prepared by PMikes Date Jan 29/24

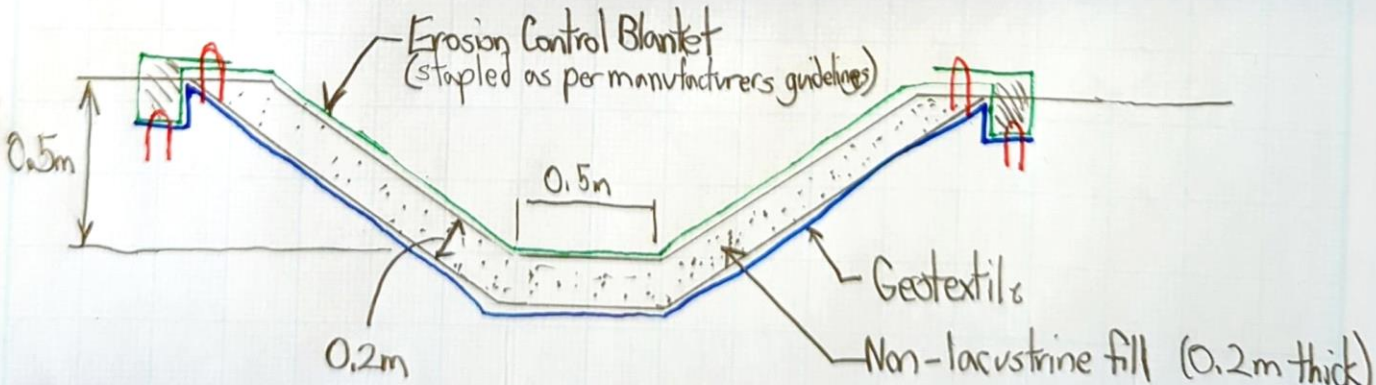
Approved by _____ Date _____

Figure 2

Subject Till Borrow Area Interception Ditch Sheet 1 of 1




A) Typical Section Where no lacustrine clay encountered




B) Typical Section where lacustrine clay is encountered.

Figure 2

srk consulting

Figure 3

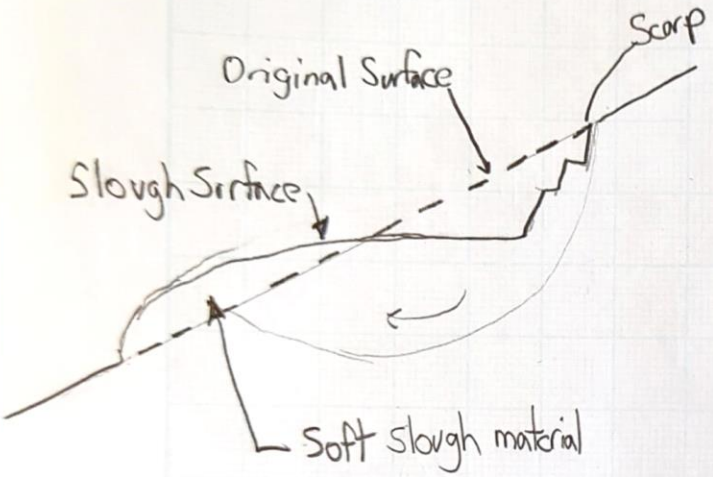
Project No. Cupr 00 3031 Site HBTF

Prepared by P. Mikes Date Jan 29/24

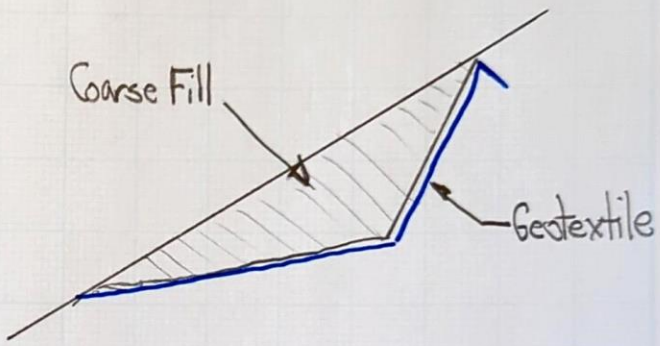
Approved by _____ Date _____

Subject Slough & Exposed Lacustrine Repairs Sheet 1 of 1

Before




After

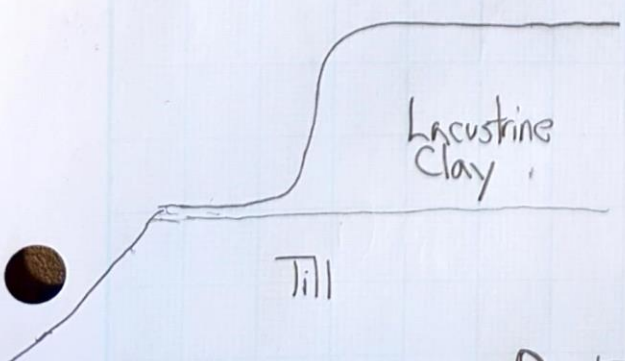



Repaired Slough Steps

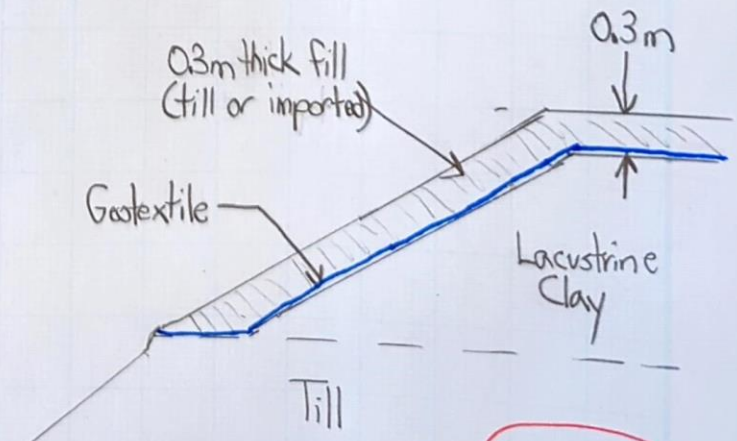
1. Remove soft slough material
2. Place Geotextile
3. Backfill slope with coarse fill (3/4" minus road crush)

A) Slough Repair

Before




After




B Exposed Lacustrine Repair

Figure 3

# Attachment 2 Cost Estimate Details

# Cost Estimate - North Embankment Upgrades

Project: HB Till Borrow Area
Project No.: CAPR003031
Client: Regional District of Central Kootenay
Date of Submission: January 20, 2024
File Location: https://srk.sharepoint.com/sites/NACAPR003031/Internal/Till_Borrow_Erosion_Mitigations/HB_TillBorrow_Upgrade_CostEstimate_rev00.xlsx?web=1

| Area | Task | Description | Class | Quantity | Unit | Unit Rate | Estimated Cost | Subtotal Cost | Comments/Source |
|---|---|---|---|---|---|---|---|---|---|
| **Direct Costs** | | | | | | | | | |
| **1** | **Mobilization and Demobilization** | | | | | | | **$ 9,000** | |
| **1.1** | **Mobilization and Demobilization** | | | | | | | | |
| | | Prime Contractor | 5 | 1 | ls | $6,000 | $6,000 | | Estimate |
| | | Subcontractor - Hydroseeding | 5 | 1 | ls | $0 | $0 | | IR has not charged mob on recent RDCK projects. |
| **1.2** | **Administration Requirements** | | | | | | | | |
| | | Site Specific H&S Plan, orientations, EHSC, CEMP, Traffic Mgmt Plan, etc. | 3 | 1 | ls | $2,000 | $2,000 | | Estimate |
| **1.3** | **Kick-off Meetings** | | 3 | 1 | ls | $1,000 | $1,000 | | One meeting |
| **2** | **Site Set-up, Water Management/Sediment Control** | | | | | | | **$ 8,244** | |
| **2.1** | **Site Set-up** | | | | | | | | |
| | | Construct a perimeter road to allow for rock truck access to top of Till Borrow Area | 4 | 10 | hrs | $390.00 | $3,900 | | Dozer, excavator. |
| **2.2** | **Sedimentation control** | | | | | | | | |
| | | Silt Fencing - Allowance for 1 row across Borrow Area | 3 | 150 | m | $8.96 | $1,344 | | |
| **2.3** | **Water Management** | | | | | | | | |
| | | Allowance for sump and potential pumping borrow area | 3 | 1 | ls | $3,000 | $3,000 | | Assuming a trash pump/hose on site and would be available during construction works. |
| **3** | **Construction Works** | | | | | | | **$ 37,445** | |
| **3.1** | **Interception Ditch** | | | | | | | | |
| | | Excavatate ditch, spoil locally. | 4 | 250 | m3 | $23.62 | $5,893 | | Multiplied cost by 4 to account for smaller excavtor (used the "Trench estimate |
| | | Geotextile: Supply and Install in upper portion to cover exposed lacustrine | 3 | 657 | m2 | $6.22 | $4,086 | | |
| | | Cover Geotextile with excavated till/coarse fill. | 4 | 70 | m3 | $11.81 | $821 | | Assumed same cost as ditch excavation |
| | | TRM: Supply and install TRM along entire channel | 3 | 1,096 | m2 | $8.77 | $9,620 | | |
| **3.2** | **Slough Repair** | | | | | | | | |
| | | Coarse Fill: Purchase | 3 | 80 | m3 | $19.11 | $1,529 | | Dynamic cost - assumed from Castlegar |
| | | Coarse Fill: Import to Site | 5 | 80 | m3 | $32.71 | $2,617 | | Assumes haul cost only - loaded for free at quarry |
| | | Excavate soft material, place at toe | 3 | 80 | m3 | $6.36 | $509 | | Spoiled at toe |
| | | Geotextile: Supply and install | 4 | 160 | m2 | $6.22 | $995 | | |
| | | Coarse Fill: Place over geotextile | 5 | 80 | m3 | $34 | $2,733 | | loaded at compost facilty, 1 rock truck, spread at top by excavator |
| **3.3** | **Exposed Lacustrine** | | | | | | | | |
| | | Grade area: to allow for geotextile installation. | 3 | 4 | hrs | $180.00 | $720 | | |
| | | Geotextile: Supply and install | 4 | 340 | m2 | $6.22 | $2,115 | | Quantity assumes 50% extra needed to be screened; 80m3/hr assumed produ |
| | | Cover geotextile with excavated till or biosolids. | 5 | 170 | m3 | $34 | $5,807 | | Steel plate and sand bags. |
| **4** | **Site Reclamation** | | | | | | | **$ 9,120** | |
| **4.1** | **Borrow Area Site Access Decommissioning** | | | | | | | | |
| | | Misc. excavator/dozer allowance to decommision/landform | 3 | 8 | hrs | $390 | $3,120 | | |
| **4.2** | **Revegetation** | | | | | | | | |
| | | Hydroseeding: Reclaim Borrow Area | 5 | 6,000 | m2 | $1.00 | $6,000 | | |
| **DIRECT COST TOTAL** | | | | | | | | **$ 63,810** | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Indirect Costs** | | | | | | | |
| Indirects costs are based on the following weeks on-site for construction | | **10** | **days** | | | | Note: using Class 3 for indirects because the 10 day schedule is conservative. |
| **1.1 Work Plan Finalization** | | | | | | **$ 15,660** | |
| Site Visit - EOR | 5 | 8 | hrs | $250 | $2,000 | | |
| Site Visit - Int. Eng. | 5 | 8 | hrs | $145 | $1,160 | | |
| Site Visit - Environmental Consultant | 5 | 8 | hrs | $250 | $2,000 | | |
| Site Visit - Travel Expenses | 3 | 1 | ls | $500 | $500 | | |
| Engineering Design Finalization | 4 | 32 | hrs | $250 | $8,000 | | |
| Tendering Support | 5 | 8 | hrs | $250 | $2,000 | | |
| **6.1 Contractor Costs** | | | | | | **$ 12,808** | |
| Project Management and Construction Services | 3 | 15% | of | $63,810 | $9,571 | | Based on 2021 construction project of similar scope. |
| Misc. contractor supplies | 5 | 1 | ls | $1,000 | $1,000 | | |
| Pick-up Trucks (1) | 3 | 10 | days | $225 | $2,237 | | |
| **6.2 Owner Oversight Costs** | | | | | | **$ 15,400** | |
| Asbuilt Reporting | 3 | 1 | ls | $7,500 | $7,500 | | |
| Site Engineer | 3 | 0 | days | $1,740 | $0 | | |
| Site Engineer Living Out Allowance/Accommodations/Vehicle | 3 | 0 | days | $480 | $0 | | |
| Engineer of Record Site visits | 3 | 2 | ea. | $2,250 | $4,500 | | |
| Engineer turnaround (1 staff every 2 weeks) | 3 | 0 | ea. | $3,160 | $0 | | Contingency |
| Environmental Monitor visits | 3 | 2 | ea. | $1,700 | $3,400 | | estimated based recent visits |
| **INDIRECT COST TOTAL** | | | | | | **$ 43,868** | |
| **Other** | | | | | | **$ 18,146** | |
| Recommended contingency | | 20% | of direct costs | | $ 12,762 | | |
| Cost Escalation to 2024: | | 5% | of direct & indirect costs | | $ 5,384 | | |
| **TOTAL COSTS** | | | | | | **$ 125,824** | |

# Quantity Inputs

Project: HB Till Borrow Area
Project No.: CAPR003031
Client: Regional District of Central Kootenay
Date of Submission: January 20, 2024
File Location: https://srk.sharepoint.com/sites/NACAPR003031/Internal/Till_Borrow_Erosion_Mitigations/HB_TillBorrow_Upgrade_CostEstimate_rev00.xlsx?web=1

**Notes**

1 Dimensions in bold are the ones used in the model
2 Quantities highlighted yellow require confirmation, or additional work.
3 Globall mapper file: HB-Asbuilt.gmw
4 Quanties scaled from draft drawings (marked-up pdf) saved at:

| | Item | Quantity | Unit | Adjustment Factor | Length (m) | Width (m) | Depth (m) | Area (m2) | Volume (m3) | Source and assumptions |
|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **Mobilization and Demobilization** | | | | | | | | | |
| **2** | **Water Management/Sediment Control** | | | | | | | | | |
| **1** | **Sedimentation Control** | | | | | | | | | |
| 1 | Silt Fencing | | | | **150** | | | | | Length from GlobalMapper |
| **2** | **Road establishment** | | | | | | | | | |
| 1 | Road Area | | | | 300 | 6 | | **1,800** | **0** | Length from GlobalMapper |
| **3** | **Construction Works** | **Qnty** | **Unit** | **Adj. Factor** | **Length** | **Width** | **Depth** | **Area** | **Volume** | |
| **1** | **Interception Ditch** | | | | | | | | | *See Conveyance Worksheet for Calculations* |
| 1 | Option 1 - Excavation | | | | 180 | | | | 228 | |
| | Option 2 - Excavation | | | | 200 | | | | **250** | |
| | Geotextile - Option 2 | | | | | | | **657** | | |
| | Geotextile Protection fill | | | | | | | | **70** | |
| | Erosion Control Blanket | | | | | | | **1,096** | | |
| **2** | **Slough Repair** | | | | | | | | | |
| 1 | Slump Zone | | | | | | 0.5 | **160** | **80** | Area from Autocad;fill volume assumes an average 0.5 m thick |
| | | | | | | | | | | |
| **3** | **Exposed Lacustrine** | | | | | | | | | |
| | Exposed lacustrine Area | | | | | | | 340 | | Area estimated from GlobalMapper |
| | Fill overgeotextile | | | | | | 0.5 | 340 | **170** | Assumed boisolids or local salvage from elsewhere in borrow. |
| **4** | **Decommissionining and Revegetation** | **Qnty** | | **Adj. Factor** | **Length** | **Width** | **Depth** | **Area** | **Volume** | |
| **1** | **Reclaim Borrow Area Decommissioning** | | | | | | | | | |
| | Revegetation area | | | | | | | 6,000 | | Area estimated from GlobalMapper |

# Unit Rates

**Project: HB Till Borrow Area**
**Project No.: CAPR003031**
**Client: Regional District of Central Kootenay**
**Date of Submission: January 20, 2024**
**File Location: https://srk.sharepoint.com/sites/NACAPR003031/Internal/Till_Borrow_Erosion_Mitigations/HB_TillBorrow_Upgrade_CostEstimate_rev00.xlsx?web=1**

| | | | | |
|---|---|---|---|---|
| **Material Unit Rates** | | | | **Source** |
| **ID** | *Description* | *Rate* | *Unit* | *File Path* |
| M.02 | Culvert: 150 mm dia. HDPE | $20 | m | RSMeans 2023 Q2 (Whitehorse); Material only |
| M.03 | Erosion Control Blanket | $4.13 | m2 | RSMeans 2023 Q2 (Whitehorse); Material only - 312514160060: Synthetic erosion control, polyethylene, 3D g |
| M.04 | Non Woven Geotextile | $3.9 | m2 | RSMeans 2023 Q2 (Whitehorse); Material only (3341231900110) |
| M.07 | Road Crush 3/4 inch minus | $19.11 | m3 | Dynamic 2023 price |
| M.08 | Silt Fencing | $2.80 | m | RSMeans 2023 Q2 (Whitehorse); Material only |
| M.09 | Steel plate: For Seepage Wier | $500.00 | m2 | RSMeans 2023 Q2 (Whitehorse); Material only (51223650100) Steel plate 6mm, schop fabricated, incl shop p |

| **Equipment Rates** | | | | | **Source** |
|---|---|---|---|---|---|
| **ID** | *Type* | *Model* | *Rate Used in Estiamte* | *Unit* | *File Path* |
| E.01 | Excavator | CAT 330 | $305 | hr. | BC Bluebook 2023-24 |
| | Excavator | JD 160 | $180 | hr. | Dynamic 2023 rate plus 10 dollars |
| | Excavator | CAT mini excavator | $130 | hr. | Custom dozer 2023 rate plus 5 dollars |
| E.02 | Truck | Std Tandem Haul Truck (12 yd3) | $160 | hr. | BC Bluebook 2023-24 |
| E.03 | Truck | CAT 740 | $339 | hr. | BC Bluebook 2023-24 |
| | | Tri Dump Truck + Pup | $180 | hr. | Dynamic 2023 rate plus 10 dollars |
| E.04 | Loader | CAT 966 | $281 | hr. | BC Bluebook 2023-24 |
| | Dozer | Dynamic small Dozer | $210 | hr. | Dynamic 2023 rate plus 10 dollars |
| E.05 | Dozer | CAT D6R | $293 | hr. | BC Bluebook 2023-24 |
| E.06 | Dozer | CAT D8R | $386 | hr. | BC Bluebook 2023-24 |
| E.07 | Compactor | CAT CP563 (Class 7 - 12-13.99 tons) | $195 | hr. | BC Bluebook 2023-24 |
| E.08 | Compactor | Walk-behind vibrating (30 in) | $16 | hr. | BC Bluebook 2023-24 |
| E.09 | Grader | CAT 140M (Class 6 - 200-248 FWHP) | $214 | hr. | BC Bluebook 2023-24 |
| E.16 | Support | Pick-up Truck (1.5T) 4x4 | $23 | hr. | Iyon Kechika Contracting Ltd. - 2023 Equipment List ($250/day) |
| E.17 | Support | Water Truck (5,000 gal) | $174 | hr. | BC Bluebook 2023-24 |
| E.18 | Support | Mobile Treatment Center | $35 | hr. | Iyon Kechika Contracting Ltd. - 2023 Equipment List ($350/day) |
| | | | | hr. | |

| **Labour Rates** | | | | **Source** |
|---|---|---|---|---|
| **ID** | *Role* | *Rate* | *Unit* | Note: Heavy Equipment operator rates are included in the equipment rates |
| L.01 | Engineer - Site Engineer | $145 | hr. | HB contract rate for sTu |
| | Engineer - EOR | $250 | hr. | HB contract rate for Peter |
| L.02 | Environmental consultant | $250 | hr. | Est. |

# Committee Report

| | |
|---|---|
| **Date of Report:** | March 26, 2024 |
| **Date & Type of Meeting:** | April 17, 2024 Joint Resource Recovery Committee |
| **Author:** | Alayne Hamilton, Environmental Project Lead |
| **Subject:** | HB TAILINGS FACILITY – ENGINEERING CONTRACT INSURANCE MODIFICATION REQUEST |
| **File:** | 12-6300-HBD-01 |
| **Electoral Area/Municipality** | Central Sub-Region |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to outline a proposed insurance modification for SRK Consulting (Canada) Inc. (SRK) for the current HB Tailings Facility engineering support and Engineer-of-Record consulting services agreement.

## SECTION 2: BACKGROUND/ANALYSIS

Under the *Mines Act* and the Health, Safety and Reclamation Code for Mines in British Columbia (Code), all tailings facilities are required to have an Engineer-of-Record (EOR). The EOR should be a qualified and competent engineer with experience commensurate with the consequence classification and complexity of the facility. The EOR holds the professional responsibility for the facility design, and is responsible for evaluating the adequacy of the as-built facility relative to the design, as well as all applicable standards, criteria, and guidelines. The EOR is also required to report on annual Dam Safety Inspections, participate in Dam Safety Reviews and risk assessments, and provide Quantitative Performance Objectives and monitoring frequencies which are required to ensure the facility is functioning as designed.

On top of EOR tasks that are required under the Code, as part of the active-care phase of the closure project, there is significant post-closure monitoring and surveillance occurring at the site, as well as numerous permit-related reporting tasks that require engineering support.

SRK Consulting (Canada) Inc. has been acting in the EOR role and providing engineering consulting services for the RDCK since 2016. Their 2024 Scope of Work was approved by the Board in December; however, in going to execute the Scope Change Letter in late January and requesting updated insurance as theirs was soon to expire, some issues with insurance coverage were noted.

SRK's 2021 Consulting Services Agreement contains the following insurance requirements:

> *"During the Term of this Agreement, take out and maintain commercial general liability insurance, and if applicable professional liability insurance or environmental impairment liability insurance, against claims for bodily injury, death or property damage arising out of this Agreement or the provision of the Services in a form acceptable to the Chief Financial Officer of the RDCK, in the amount of $2,000,000 per occurrence"*

The contract language was from an older template which did not define the deductible amounts, and the amount determined for professional liability does not meet the requirements of the RDCK's Insurance Policy (Policy). For a contract of this risk level (High Risk) for Commercial General Liability (CGL), $2,000,000 of coverage with a $5,000 deductible is required. For Professional Errors and Omissions Liability (PEOL), $5,000,000 per occurrence and

$10,000,000 in aggregate coverage with a $50,000 deductible is required. SRK initially provided a PEOL insurance policy with $2,000,000 per occurrence and $2,000,000 in aggregate, and a $500,000 deductible. SRK has recently agreed to increase the per occurrence and in aggregate amounts to $5,000,000 but is not able to increase the in aggregate amount to the $10,000,000 required in the Policy for High Risk contracts. Although the PEOL insurance provided by SRK meets the requirements of the contract language, it does not meet the deductible requirements or the in aggregate coverage amounts in the Policy. SRK has provided adequate CGL insurance that meets the requirements of the Policy.

Staff requested that SRK provide the appropriate deductible the PEOL insurance as per the RDCK's Policy. SRK's counsel indicated that the PEOL deductible amounts are significantly lower than they are required to provide on any other contract, and are beyond what their insurers would typically agree to. SRK does work across British Columbia on higher consequence dams and tailings facilities, and it seems the RDCK's coverage is well beyond what is typically required for this firm for this kind of tailings facility work. Staff have also heard similar comments and concerns from other large consulting firms around the RDCK insurance requirements.

As SRK's contract is considered High Risk under the RDCK's Insurance Policy, Board approval of an insurance modification is required. The modification request is to increase the deductible amount on the PEOL insurance from $50,000 to $500,000, and decrease the aggregate coverage amount from $10,000,000 to $5,000,000.

SRK is a large multinational firm with over 45 permanent offices in 20 countries; as such, they have the appropriate financial capacity to cover the additional deductible amount, should a claim ever be made. The purpose of the insurance deductible amounts listed in the Policy is to ensure that contractors and consultants do not assume a deductible or self-insurance limit that exceeds their financial abilities. Given SRK's size and their capacity to self-insure for the deductible, staff do not have concerns with the deductible increase.

Under the Municipal Insurance Association of BC (MIABC) recommended insurance coverage guidance document, high risk activities should meet all or a majority of the following conditions:

- A large number of members of the public are present or will utilize the end product;
- New construction over $3 million in project costs; and/or
- High risk of bodily injury to others, damage to, destruction or loss of property, or loss of income or additional expenses anticipated or likely.

As the closure construction project is now completed and the risks associated with the Facility have now been reduced as low as practicable, staff feel that SRK's scope of work does not pose a dam safety risk or meet any of the above MIABC high risk items so a reduction of the insurance requirements is reasonable. Staff also reviewed a number of other documents from other regional districts or municipalities in BC for EOR or dam safety engineering services, and were unable to find other examples where the PEOL coverage was as high as the RDCK's.

Staff feel that RDCK business interests are best served by increasing the insurance deductible requirements in SRK's agreement, and are a requesting that the Board support the modification of the PEOL deductible from $50,000 to $500,000. Staff are also requesting that the Board support a decrease in the aggregate coverage amount from $10,000,000 to $5,000,000 to more closely align with the risks of SRK's remaining work in 2024 before the contract expires on November 16th.

Should the Board approve the insurance deductible and coverage modification, there is no additional cost to the RDCK and this subject is not further discussed in Section 3.1 Financial Considerations.

Should the Board not approve the insurance modification, works at the Facility would need to be paused while a procurement process was initiated to secure a new consulting firm that can meet the RDCK's insurance requirements. Recent procurements for senior engineers with significant dam safety experience have not been successful, and of the three other contracts that the RDCK has in place with senior dam engineers, none were able to meet the RDCK insurance requirements. Not having an EOR in place during the procurement process to find a replacement would be a serious contravention of the Code requirements, and pausing other permit-related tasks at the Facility could result in fines and/or Orders.

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

| | | | | | |
|---|---|---|---|---|---|
| **Included in Financial Plan:** | ☒ Yes | ☐ No | **Financial Plan Amendment:** | ☐ Yes | ☒ No |
| **Debt Bylaw Required**: | ☐ Yes | ☒ No | **Public/Gov't Approvals Required:** | ☐ Yes | ☒ No |

None at this time.

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

None at this time.

### 3.3 Environmental Considerations

None at this time.

### 3.4 Social Considerations:

None at this time.

### 3.5 Economic Considerations:

None at this time.

### 3.6 Communication Considerations:

None at this time.

### 3.7 Staffing/Departmental Workplace Considerations:

The HB Tailings Facility post-closure process will continue to be the focus of the Environmental Projects Lead with support from the Resource Recovery Manager.

### 3.8 Board Strategic Plan/Priorities Considerations:

None at this time.

## SECTION 4: OPTIONS & PROS / CONS

**Option 1:** **That the Board accept the insurance deductible modification for SRK Consulting (Canada) Ltd.'s Professional Errors and Omissions Liability insurance to increase the deductible from $50,000 to $500,000; AND FURTHER, that the Board also accept the modification to the Professional Errors and Omissions Liability coverage to reduce the in aggregate amount from $10,000,000 to $5,000,000.**

**PROS:**

- Allows HB Closure Project to proceed under current timelines.

- Allows legal negotiations with Teck to start with support from SRK, if needed, prior to the Financial Plan being adopted.

**CONS:**

- None noted.

**Option 2: That the Board does not approve the insurance modification for SRK Consulting (Canada) Ltd.'s Professional Errors and Omissions Liability insurance.**

**PROS:**

- None noted.

**CONS:**

- The contract would likely need to be cancelled, and an RFP initiated to find an engineering firm that could provide adequate insurance coverage.
- RDCK would be out compliance with Code requirements for having an EOR in place.
- Important works at the Facility would need to be paused, and the RDCK would not meet permitting and reporting timelines, which carries the risk of fines and other penalties.
- Possibility of not finding a new engineering firm that could meet the high insurance requirements, as there are a very few senior engineers taking on this level of work in the Province currently.

## SECTION 5: RECOMMENDATIONS

That the Board accept the insurance deductible modification for SRK Consulting (Canada) Ltd.'s Professional Errors and Omissions Liability insurance to increase the deductible from $50,000 to $500,000;

AND FURTHER, that the Board also accept the modification to the Professional Errors and Omissions Liability coverage to reduce the in aggregate amount from $10,000,000 to $5,000,000.

Respectfully submitted,

Alayne Hamilton – HB Tailings Facility Technologist

## CONCURRENCE

Resource Recovery Manager – Amy Wilson
General Manager of Environmental Services – Uli Wolf
Chief Administrative Officer - Stuart Horn

**ATTACHMENTS: None**

# Committee Report

| | |
|---|---|
| **Date of Report:** | March 5, 2024 |
| **Date & Type of Meeting:** | April 17 2024, Joint Resource Recovery Committee |
| **Author:** | Nathan Schilman, Environmental Technologist |
| **Subject:** | 2024 CKISS INVASIVE PLANT MANAGEMENT PROPOSAL |
| **File:** | 12-6300-01 |
| **Electoral Area/Municipality** | All regions/Sub-regions |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to present the management options and recommendations provided by the Central Kootenay Invasive Species Society (CKISS) for invasive plant management at the HB Tailings site and Resource Recovery facilities in 2024.

## SECTION 2: BACKGROUND/ANALYSIS

The Central Kootenay Invasive Species (CKISS) has been providing invasive plant management solutions to the RDCK since 2019. Their approach to invasive plant management includes education and outreach, monitoring of invasive plant populations, and control of invasive plants through the use of herbicides and mechanical control methods. Prior to 2019, the RDCK did not have a formal invasive management program in place for Resource Recovery facilities, which allowed for invasive plants to spread and develop a large seed bank on some sites.

Controlling invasive plant populations is necessary for many reasons. The BC Weed Control Act legislation states that any occupier of land must control noxious weeds. Further, it is the intent of the RDCK, through a properly managed invasive control program, to reduce or eliminate the spread of invasive species to neighboring agricultural or forested lands. The HB Tailings Site has a permit requirement that an invasive plant management program must be in place. RDCK compost facilities and compost feed stocks (yard & garden waste) require weed control and adequate staff training so that finished compost products are not contaminated with invasive plants or seed.

The goal in invasive plant management is to continually reduce invasive plant populations, however this can be a challenge given the nature of Resource Recovery sites – frequent soil disturbances (at landfills), the transportation of invasive plants to our sites for disposal, and constant vehicular traffic (which can bring invasive seed into the site) creates opportunity for invasive plants to grow and spread. As such, it can be assumed that invasive plant management will be required at these sites on an on-going basis. However with proper education of Resource Recovery staff and site contractors, and diligent annual monitoring and control campaigns, the reduction of invasive plant populations should occur over time.

There are two main methods of managing invasive plant species – chemical control and mechanical control.

Chemical control involves the use of herbicide on live plants to eradicate them. The herbicides applied on Resource Recovery sites are chosen based on the plants they are designed to control, and also chosen based on their toxicity – as much as possible, the least toxic ('safest') herbicide available is used on RDCK Resource

Recovery sites. Herbicide toxicity, as well as safety precautions and usage directions, is referenced on each chemical's Safety Data Sheets which are prepared by the manufacturer.

Pesticides are very carefully regulated in Canada through the Pest Management Regulatory Agency (PMRA) through a program of premarket scientific assessment, enforcement, education and information dissemination. The PMRA of Health Canada has the mandate to protect human health and the environment by minimizing the risks associated with pest control products, while enabling access to pest management tools, namely, these products and sustainable pest management strategies.

Pesticides imported into, or sold or used in Canada are regulated nationally under the Pest Control Products Act (PCP Act) and Regulations. The PMRA is responsible for administering this legislation, registering pest control products, re-evaluating registered products and setting maximum residue limits under the Food and Drugs Act (FDA).

Mechanical control involves physical removal of invasive species by mowing, hand-pulling, or excavation. Mechanical control is the preferred method for some invasive species which are tolerant to or unaffected by herbicide treatment (i.e. Scotch Broom). Other invasive species, especially those with creeping root systems (i.e. Canada Thistle) are difficult to control with mechanical methods. Mechanical control is typically more time-consuming and needs to be done multiple times throughout the growing season, so can be more costly than chemical control. Mechanical control, if done improperly, or timed incorrectly, can sometimes result in an increase of invasive plant populations due to seed/plant fragment spreading, so care must be taken if this method is used. Mowing is also considered a High-Risk Activity under the Wildfire Act at most sites, due to the proximity to forested land – if wildfire danger rating is 'extreme', mowing would not be an option.

The management of the invasive control program would be most successful through CKISS. CKISS can offer a complete program including training, monitoring, coordination of control programs, and reporting, and they are the only organization in the Regional District that provides these services. While it's possible that an invasive plant management program could be managed by RDCK staff, doing so would require a significant time commitment including specific training and additional hours to manage, which would require the hiring of additional staff.

In 2023, CKISS conducted invasive plant management at 13 Resource Recovery facilities, the Creston Compost Facility, and the HB Tailings Facility. A summary report including all invasive management activities conducted through the year and a tabulation of all herbicide application data is provided at the end of each calendar year for RDCK reference. Please see Attachment A for more information.

Following invasive treatment at the Marblehead transfer station in the summer of 2023, several members of the public, site staff, and the Area Director voiced concerns over the use of herbicides to control the weeds. Concerns included general concerns about the use of chemical herbicides in the area, the lack of prior notification of treatment, and the potential impact of herbicides on local bee populations. Concerns were addressed via correspondence and an on-site meeting to discuss treatment options. Given the concerns expressed, Staff investigated options for transitioning away from chemical treatments to mechanical treatment methods at the Marblehead transfer station. Following discussion of the herbicide concerns with CKISS, an assessment of site specific conditions was conducted and CKISS concluded that mechanical treatment of weeds at Marblehead could be an effective option, if properly managed. Mechanical treatment at Marblehead is the CKISS recommended treatment for 2024.

While there has been some concern about the dangers of herbicide use in the RDCK, every effort is made by Staff, CKISS, and the pesticide applicator to mitigate any potential risks to the public, to wildlife, and to the environment. Generally speaking, once herbicides have dried on the plant or soil, they have a very low risk to people and wildlife. Some herbicides used on Resource Recovery sites emit an odor from when applied until they have dried, but are classified as being very low toxicity if inhaled. Herbicides are applied when the sites are closed to the public, and treatments are scheduled to allow an ample amount of time between application and public access to allow for the herbicide to dry, usually a minimum of 48 hours. The herbicide is applied in a targeted fashion (spot-spraying directly on invasive plants), rather than sprayed across the site (blanket-spraying). Herbicides are used very sparingly – in 2023, only 8L of herbicide was used across the entire RDCK to treat a total area of over 3.5 hectares. The applicator is fully certified for herbicide application as per the BC Integrated Pest Management Act, and has worked in the area for many years. Following application, signage is posted for two weeks in all treatment areas indicating the date and time of application, type of herbicide used, and contact information, as per the Integrated Pest Management Regulation, BC Reg 604/2004.

For 2024, CKISS has provided two options for invasive control. The recommended option (Option #1) primarily involves the use of herbicide, with mechanical control recommended at some facilities, or a mix of both herbicide use and mechanical control. The second option (Option #2) primarily involves the use of mechanical control methods, monitoring, and limited herbicide use. Option #1 would result in the most effective control of invasives and would be less expensive, while Option #2 could leave some sites vulnerable to poor invasive management and a risk to compost production and neighboring lands. Services such as mowing and excavation are not provided by CKISS, so alternative service providers would need to be sourced, if Option #2 is the preferred management choice. Please reference Attachment B for more information regarding 2024 recommendations for invasive control, and specific management plans for each Resource Recovery site.

Staff recommend proceeding with the lowest cost and most effective treatment options available, which is Option #1 provided by CKISS.

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

| | | | | | |
|---|---|---|---|---|---|
| **Included in Financial Plan:** | ☒ Yes | ☐ No | **Financial Plan Amendment:** | ☐ Yes | ☒ No |
| **Debt Bylaw Required**: | ☐ Yes | ☒ No | **Public/Gov't Approvals Required:** | ☐ Yes | ☒ No |

Cost for invasive plant management has been increasing over the years, mostly due to increases in labour costs, administration requirements, and herbicide costs. If we continue to work with CKISS on invasive plant control, costs should reduce as invasive populations decline and we reach a stable point of ongoing monitoring and management. If invasive programs are delayed or insufficiently managed, costs could be expected to increase over time.

As per the 2024 CKISS Invasive Plant Management Proposal (Attachment B), the following summarizes the costs of each option for invasive plant control at each site. The options given for most sites are either a chemical control option or mechanical control option, depending on the specific site conditions. At some sites, only one option is recommended, given the site-specific characteristics and invasive species present. As CKISS does not provide mowing or excavation services, Option 2 would involve additional costs not provided in the proposal. An estimate for these additional services has been included with Option 2 costs below.

Costs presented include project oversight and recommendations, project management, field technicians, herbicide applicator contractors (where applicable), travel expense, site assessments, reporting and project

administration. CKISS has recommended a training seminar to be offered to Resource Recovery staff and site contractors, to be delivered either in-person or online.

| Subregion | Site | Option 1 (Recommended) | Option 2 |
|---|---|---|---|
| **East - S186** | Boswell | $5,245.74 | $8,050.68 |
| | Crawford Bay | $5,926.28 | $5,926.28 |
| | Creston LF | $4,803.74 | $3,168.98 |
| | **Total** | **$15,975.76** | **$17,145.94** |
| **Creston Compost** | **Total** | **$4,803.74** | **$5,168.98** |
| **Central - S187** | HB | $2,755.67 | $2,755.67 |
| | Central LF | $6,732.96 | $6,077.70 |
| | Balfour | $1,865.26 | $4,043.15 |
| | Kaslo | $2,817.14 | $4,066.20 |
| | Marblehead | $2,371.82 | $2,371.82 |
| | **Total** | **$16,542.85** | **$19,314.54** |
| **West - S188** | Burton | $1,972.83 | $2,352.78 |
| | Edgewood | $1,972.83 | $2,352.78 |
| | Ootischenia LF | $2,755.67 | $4,301.81 |
| | Slocan | $2,809.46 | $3,989.36 |
| | Nakusp LF | $2,940.09 | $4,686.01 |
| | **Total** | **$12,450.88** | **$17,682.74** |
| | **Training Workshop** | **$1,351.50** | **$1,351.50** |
| | **2024 Program Total** | **$51,124.73** | **$60,663.70** |

The cost of continuing with the CKISS recommended treatment options, which primarily involves the use of herbicide (with the exception of mechanical control at Marblehead and Crawford Bay) is estimated at $51,124.73. The cost of moving to mechanical control methods at most sites (with the exception of HB) is estimated at $60,663.70. Please reference Attachment B for more details.

Available budgets in the RDCK Draft 2024-2028 Financial Plan are as follows:

| Subregion | 2024 Budget | Option 1 (Recommended) | Option 1 +/- | Option 2 | Option 2 +/- |
|---|---|---|---|---|---|
| **East - S186** | $16,000.00 | $15,975.76 | $24.24 | $17,145.94 | -$1,145.94 |
| **Creston Compost** | $4,000.00 | $4,803.74 | -$803.74 | $5,168.98 | -$1,168.98 |
| **Central - S187** | $16,000.00 | $16,542.85 | -$542.85 | $19,314.54 | -$3,314.54 |
| **West - S188** | $9,000.00 | $12,450.88 | -$3,450.88 | $17,682.74 | -$8,682.74 |
| Training Workshop | | $1,351.50 | | $1,351.50 | |
| **Total** | **$45,000.00** | **$51,124.73** | **-$4,773.23** | **$60,663.70** | **-$14,312.20** |

Staff will work with CKISS to investigate the ability to keep costs within allocated budgets. There may be capacity within the Contracted Services Account in each Service to fund minor excess costs. If not, staff will return to the Committee later in the year to request a financial plan amendment.

Staff recommend proceeding with Option #1 (Recommended).

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

Weed Control Act: As per Section 2 of the BC Weed Control Act, an occupier of land, or person responsible for land must control noxious weeds growing or located on said land/premises. As such, the RDCK has a legal obligation to control noxious weeds present at our resource recovery facilities.

Integrated Pest Management Regulation: This act sets out rules and regulations in regards to the application of herbicides to control invasive plants, including public notification, certification of pesticide applicators, and record keeping. CKISS ensures that they, and any sub-contractors (pesticide applicators) follow all applicable aspects of this regulation.

### 3.3 Environmental Considerations

Invasive species are generally non-native to a specific location, and have the potential to cause damage to the environment, wildlife, human economy and human health, and therefore should be controlled through an Invasive Plant Management program.

Some herbicides have the potential to cause damage to human health, wildlife, and waterways, if handled or applied improperly or incorrectly. While there has been public concern surrounding the use of herbicides on some resource recovery facilities, when used correctly by a certified pesticide applicator, there is a very low risk to humans, wildlife, and the environment. As per the Board resolution passed in 2019, the herbicide glyphosate (common name: RoundUp) is not used on any RDCK facilities.

Missing timely mechanical treatments and/or improper mechanical treatments has the potential to compound invasive infestation problems.

A lack of sufficient training for Resource Recovery Staff and Contractors could result in the inadvertent spread of invasives – for example, allowing for noxious weeds to be disposed of with yard & garden waste, or disturbance of knotweed infestation areas.

### 3.4 Social Considerations:

Use of chemical control methods is unfavorable to some communities. More costly mechanical control methods result in more cost to communities/taxpayers. Use of contractors to provide control (mowing, excavation, hand-pulling) provides business to locals.

### 3.5 Economic Considerations:

Improper or inadequate control methods, and/or creating conditions for invasive plants to spread will result in increased control costs to the RDCK in the future.

### 3.6 Communication Considerations:

As there has been some public concern raised in regards to herbicide use in some communities, increased communication and public notification may be needed for those communities, should chemical treatment options be chosen.

### 3.7 Staffing/Departmental Workplace Considerations:

Some Resource Recovery staff members have expressed concern with working on sites where chemical treatments had been conducted, even though the application followed best practices and legislative requirements. While there is generally low risk to staff to be in vicinity of recently treated areas, some staff may still request to be off work after sites are sprayed. This may impact whether or not a site can be open on scheduled days. Every effort is made to spray a site when it is closed and on a day that gives the maximum amount of time between spraying and next day the site is open, usually a minimum of 48 hours.

Moving to in-house management of invasive plants at Resource Recovery sites would require additional staff resources and training.

The RDCK's Environmental Technologist will lead this program, with support from the Environmental Projects Lead.

### 3.8 Board Strategic Plan/Priorities Considerations:

None

## SECTION 4: OPTIONS & PROS / CONS

**OPTION 1: That the Board authorize Staff to proceed with Central Kootenay Invasive Species Society's 2024 Option #1 (Recommended) treatment options for all sites, which involves the use of herbicides and/or mechanical treatments to control invasive species dependent on site specific conditions.**

**PROS:**

- More effective control of invasive species overall.
- Lower cost to RDCK.

**CONS:**

- Potential for concern from public and site staff regarding use of chemical herbicide.

**OPTION 2: That the Board direct Staff to proceed with Central Kootenay Invasive Species Society's 2024 Option #2, which involves the use of mechanical control methods at most sites, with herbicide use at the HB Tailings Facility.**

**PROS:**

- Limited herbicide use at Resource Recovery sites across the RDCK.

**CONS:**

- Increased cost, especially where knotweed is present on the sites. May be limited in control efficacy and/or could result in further spread of invasive species if not done correctly or completely. Some areas may present a challenge in finding local personnel/equipment to do mechanical treatments.

## SECTION 5: RECOMMENDATIONS

That the Board direct Staff to proceed with Central Kootenay Invasive Species Society's 2024 Option #1 (Recommended) treatment options for all sites, which involves the use of herbicides and/or mechanical treatments to control invasive species dependent on site specific conditions.

Respectfully submitted,

Nathan Schilman - Environmental Technologist

## CONCURRENCE

Chief Administrative Officer - Stuart Horn
Environmental Services Manager – Uli Wolf
Resource Recovery Manager – Amy Wilson

**ATTACHMENTS:**
**Attachment A: CKISS RDCK Resource Recovery Invasive Plant Management Report for 2023**
**Attachment B: CKISS RDCK Resource Recovery Invasive Plant Management Proposal for 2024 & Detailed Cost Breakdown**

# Resource Recovery Facilities Invasive Plant Management Report 2023

## Regional District of Central Kootenay

Contract No: 2023-025-ENV

**Prepared for:** **Regional District of Central Kootenay**
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January 2023

## Acknowledgements

CKISS acknowledges that we are privileged to live and work in the unceded territories of the Ktunaxa, Syilx, Secwépemc, and Sinixt First Nations.

This document was prepared by the Central Kootenay Invasive Species Society. This project was managed by Kalenna Olynyk, Field Program Manager, with the assistance of the Assistant Field Program Managers, Nerissa Abbott and Molly Tilden, and Invasive Species Technicians: James Schafers, Eric Waldie, Ellen Carpenter and Samantha Boucher. Executive Director, Erin Bates provided guidance on the program

We would like to acknowledge the contribution and efforts of the Regional District of Central Kootenay for taking action to prevent and mitigate the impacts of invasive species.

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# 1. Goals and Objectives

| Facility | Goals and Objectives |
|---|---|
| Balfour Transfer Station | ▪ Chemical control of knotweed and Himalayan blackberry. |
| Boswell Transfer Station | ▪ Mechanical control of Himalayan blackberry in wet areas and chemical control outside of wet areas. |
| Burton Transfer Station | ▪ Chemical control of hoary alyssum and other priority species found. |
| Crawford Bay Transfer Station | ▪ Mechanical control of scotch broom. |
| Creston Landfill | ▪ Chemical control of scentless chamomile and other priority species along access roads and high-use areas. |
| Creston Compost Facility | ▪ Inventory and invasive plant assessment of the area surrounding the compost facility. |
| Edgewood Transfer Station | ▪ Chemical control of hoary alyssum and other priority species found. |
| HB Tailings Site | ▪ Initial inventory, invasive plant assessment, and treatment estimate of the full HB tailings dam area and tailings surface, and both borrow areas.<br>▪ Control all invasive plants along the access road. |
| Kaslo Transfer Station | ▪ Chemical control of knotweed.<br>▪ Monitor for blueweed and scotch broom, and control if found. |
| Marblehead Transfer Station | ▪ Chemical control priority invasive plants found within active areas of the Transfer Station. |
| Nakusp Landfill | ▪ Chemical control of blueweed, knotweed and hoary alyssum. |
| Ootischenia Landfill | ▪ Chemical control of knotweed, hoary alyssum and other high-priority species. |
| Salmo (Central) Landfill | ▪ Inventory and assessment of all disturbed areas.<br>▪ Chemical control of scentless chamomile, hoary alyssum and poison hemlock. |
| Slocan Transfer Station | ▪ Chemical control of knotweed. |

# 2. Methodology

CKISS worked with RDCK to develop the annual invasive species management work plan. Invasive plant management activities were developed in accordance with RDCK's priorities, the CKISS Operational Framework, the Invasive Plant Strategy for BC and an Integrated Pest Management approach. When applicable, the Invasive Plant Pest Management Plan for the Southern Interior of British Columbia (FLNRO PMP 402-06478-19/24) was followed.

CKISS conducted field activities from May 1st to November 15th. Data were collected in a digital format using mobile devices and spatial data collection software. All survey, mechanical and chemical treatment data were uploaded to the BC Government InvasivesBC database (IBC) by December 15th. Invasive plant inventories and surveys were conducted in accordance with the BC Government IBC Reference Guide and treatment methods and recommendations followed current best practices. CKISS continually reviews our methodology to ensure current and science-based invasive plant management strategies.

# 3. Summary of Activities

In the spring of 2023, CKISS met with RDCK staff to discuss the work plan, access and safety for each of the resource recovery facilities. CKISS communicated with the RDCK and provided notifications of planned staff and contractor visits to the RDCK resource recovery properties.

Invasive plant management activities occurred at 13 resource recovery facilities, including the HB Mines Tailings Facility and the Creston Compost Facility. Thirty-two invasive plant species were identified. No provincial prevent or Early Detection Rapid Response (EDRR) plants were found in 2023.

In 2023, invasive plant management activities were focused on controlling previously identified invasive plants and monitoring for new species. Specific activities included surveys, inventories, mechanical treatment, chemical treatment and treatment monitoring. Herbicide treatments were conducted by qualified herbicide contractors: Kootenay Weed Control or Morrow Bioscience Ltd. Prior to herbicide treatment, herbicide notification signs were installed and remained on site for two weeks.

## 3.1 Balfour Transfer Station

In 2023, seven invasive plant species were surveyed at the Balfour Transfer Station (Table 1). Dead knotweed stems were found in an organic waste pile however no living plants were found in previously treated areas. On September 18th, Himalayan blackberry was found and chemically controlled on the east side of the Transfer Station. Plants were spot-treated with herbicide using a backpack sprayer.

Table 1. Invasive plants surveyed at the Balfour Transfer Station in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Japanese knotweed | 3. Contain | Provincially Noxious | No |
| Hoary alyssum | 3. Contain | Regionally Noxious | Yes |
| Himalayan blackberry | 4. Strategic Control | | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | No |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |

Of the plants found in 2023, one is a priority to contain, and the other six plants are a priority to strategically control in this region. Three of the plants found are listed as “Noxious Weeds” under the

*BC Weed Control Act*. Landowners are legally required to manage these listed invasive plant species on their property.

## 3.2 Boswell Transfer Station

On June 14th, CKISS staff mechanically controlled Himalayan blackberry along the margins of the Boswell Transfer Station, primarily concentrated on the South and East perimeters of the site, and the area behind the recycling centre. Staff focused on removing plants in wet areas, where chemical treatment could not be used. Himalayan blackberry roots were severed below the root crown. Plants were removed across a 300 $m^2$ area and 120 kg of plant material was removed from the site. Precautions were taken to avoid dislodging and spreading viable plant parts during removal. Plant material was disposed of directly at the Creston Landfill for deep burial.

Due to the large size of the infestation, and limited time, a full site mechanical treatment was not completed. CKISS staff estimated that 50 $m^2$ of regional district-owned land requires further treatment.

On October 11th, a Morrow BioScience Ltd. chemically treated Himalayan blackberry at the Boswell Transfer Station using a backpack applicator to spot-treat the plants. The contractor flagged a 10 m PFZ around wet areas and did not treat within the PFZ, but treated all other plants within the Transfer Station.

## 3.3 Burton Transfer Station

In 2023, 11 invasive plants were identified within the Burton Transfer Station and identified (Table 2). Of the species identified, one is priority contain and it was found outside of its containment boundary. Nine of the plants found are a priority to strategically control, and one species has insufficient information to determine a priority. Three species are listed as “Noxious Weeds” under the BC Weed Control Act. Landowners are legally obligated to manage these species on their property.

Cheatgrass was present in 2022 but was not found at the Burton Transfer Station in 2023.

Table 2. Invasive plants surveyed at the Burton Transfer Station in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Hoary alyssum | 3. Contain – Outside of containment | Regionally Noxious | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| Queen Anne's lace | 4. Strategic Control | | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Sulphur cinquefoil | 4. Strategic Control | | Yes |
| Yellow hawkweed species | 4. Strategic Control | | Yes |
| Common comfrey | 5. Insufficient Information | | Yes |
| Cheatgrass | 5. Insufficient Information | | No |

Hoary alyssum was found outside of containment at the Burton Transfer Station. The goal for this species is to eradicate all occurrences outside of its containment boundary. On July 25th, Morrow BioScience chemically treated hoary alyssum, spotted knapweed and common tansy found throughout the site. The primary areas treated included high-traffic areas, such as road edges, around gates, structures, and bins.

## 3.4 Crawford Bay Transfer Station

In 2023, scotch broom was mechanically controlled at the Crawford Bay Transfer Station. Many patches of scotch broom were found throughout a two ha area, primarily behind the mulch pile, along an old road, and extending back into the forest behind the Station. Scotch broom is a priority to contain and, as the Transfer Station experiences heavy traffic from the public and therefore it has a high potential to be the source of scotch broom spreading to new locations.

On June 6th and June 13th, mechanical treatment of Scotch broom occurred throughout a 350 $m^2$ area. The plants were cut at the base of the stem. Plant material with seeds was double-bagged and disposed of directly at the Transfer Station. CKISS requested additional material be disposed of at the transfer station however due to the volume of scotch broom removed, non-reproductive plant materials were transported and disposed of at the Creston Landfill for deep burial. Given the distance and time needed to transport plant material from Crawford Bay to Creston for disposal, CKISS was limited in the amount of time able to be spent onsite conducting removal. By strategically disposing of some plant material at the Transfer Station, we were able to enhance efficiency and dispose of a greater quantity of plants than if they were limited to transporting only what could fit in the back of the vehicles.

Due to the large size of the infestation, a full-site treatment was not complete. Treatment was focused on high-traffic areas closest to the Transfer Station. The plants remaining on site were located in the forested area surrounding the Station.

## 3.5 Creston Landfill

In 2023, 13 invasive plant species were identified in the Creston Landfill (Table 3). Two of the species identified are a priority to contain, 10 species are a priority to strategically control, and one of the species has insufficient information to determine a priority listing. Three of the species identified are listed as “Noxious Weeds” under the *BC Weed Control Act*. Landowners are legally obligated to manage these species on their property.

In 2021, blueweed was chemically but has not been found since. Similarly, yellow hawkweed, spotted knapweed, and Dalmatian toadflax were last found and chemically treated in 2022, but were not found in 2023.

On July 31st and August 1st, Morrow BioScience Ltd. chemically treated nine invasive plant species at the Creston Landfill. Treatment focused on scentless chamomile and priority invasive plants along access roads and other high-use areas. Plants were spot-treated using a backpack applicator.

Table 3. Invasive plants surveyed at the Creston Landfill in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Blueweed | 2. Eradicate | Regionally Noxious | No |
| Common tansy | 3. Contain | Regionally Noxious | Yes |
| Scentless chamomile | 3. Contain | Provincially Noxious | Yes |
| Spotted knapweed | 3. Contain | Provincially Noxious | No |
| Bull thistle | 4. Strategic Control | | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Dalmatian toadflax | 4. Strategic Control | Provincially Noxious | No |
| Hoary alyssum | 4. Strategic Control | Regionally Noxious | Yes |
| Mullein | 4. Strategic Control | | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Sulphur cinquefoil | 4. Strategic Control | | Yes |
| Wormwood | 4. Strategic Control | | Yes |
| Yellow hawkweed species | 4. Strategic Control | | No |
| Curled dock | 5. Insufficient Information | | No |
| Sheep sorrel | 5. Insufficient Information | | No |
| Western goat's-beard | 5. Insufficient Information | | Yes |

## 3.6 Creston Compost Facility

In 2023, CKISS conducted an inventory of invasive plants around the Creston Compost Facility. Fifteen invasive plant species were identified (Table 4). Three of these species are a priority to contain, 11 species are a priority to strategically control, and one species identified has insufficient information to determine a priority listing. Five of the species identified are listed as “Noxious Weeds” under the *BC Weed Control Act*. Landowners are legally obligated to manage these species on their property.

Following the surveys, Morrow BioScience Ltd. chemically treated nine invasive plant species surrounding the Creston compost facility. Plants were spot-treated using a backpack applicator.

Table 4. Invasive plants surveyed at the Creston Compost Facility in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Common tansy | 3. Contain | Regionally Noxious | Yes |
| Scentless chamomile | 3. Contain | Provincially Noxious | Yes |
| Spotted knapweed | 3. Contain | Provincially Noxious | Yes |
| Bull thistle | 4. Strategic Control | | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |

| | | | |
|---|---|---|---|
| Common burdock | 4. Strategic Control | | Yes |
| Dames rocket | 4. Strategic Control | | Yes |
| Hoary alyssum | 4. Strategic Control | Regionally Noxious | Yes |
| Mullein | 4. Strategic Control | | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Sulphur cinquefoil | 4. Strategic Control | | Yes |
| Wormwood | 4. Strategic Control | | Yes |
| Cheat grass | 5. Insufficient Information | | Yes |

## 3.7 EDGEWOOD TRANSFER STATION

In 2023, 12 invasive plant species were identified at the Edgewood Transfer Station (Table 5). Two of these plants are a priority to contain, nine are a priority to strategically control, and for one, there is insufficient information to determine a priority. Four species are listed as “Noxious Weeds” under the *BC Weed Control Act*. Landowners are legally required to manage these listed invasive plant species on their property.

Table 5. Invasive plants surveyed at the Edgewood Transfer Station in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Hoary alyssum | 3. Contain – Outside Containment | Regionally Noxious | Yes |
| Meadow knapweed | 3. Contain | | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| Bull thistle | 4. Strategic Control | | No |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Field bindweed | 4. Strategic Control | | No |
| Mullein | 4. Strategic Control | | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Sulphur cinquefoil | 4. Strategic Control | | Yes |
| Common comfrey | 5. Insufficient Information | | No |
| Western goat's-beard | 5. Insufficient Information | | Yes |

Hoary alyssum is a priority to eradicate and manage at the Edgewood Transfer Station as this species was found outside of its regional containment zone.

Bull thistle was found at the Edgewood Transfer Station in 2022, but not in 2023. Common comfrey and Field bindweed were last found at the Edgewood Transfer Station in 2021, but were also not found in 2023.

On July 25th, Morrow BioScience Ltd. chemically treated hoary alyssum, common tansy, meadow knapweed, and spotted knapweed at the Edgewood Transfer Station. Plants were spot-treated using a backpack applicator over an area of 471 $m^2$. The contractors noted that last year's treatment was effective and they were able to do a full site treatment of the species listed above, which were primarily located in high-traffic areas.

## 3.8 HB Tailings Site

On June 6th, 2023, CKISS inventoried the HB mines tailings site and access roads for invasive plants. Fourteen invasive plant species were identified during the inventory (Table 6). One plant identified, scentless chamomile, is a priority to eradicate, 11 species are a priority to strategically control, and 2 species have insufficient information to assign a priority. Five of the species identified are considered "Noxious Weeds" under the *BC Weed Control Act*. Landowners are legally required to manage these listed invasive plant species on their property.

Table 6. Invasive plants surveyed at HB Tailings Site in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Scentless chamomile | 2. Eradicate - Outside Containment | Provincially Noxious | Yes |
| Bull thistle | 4. Strategic Control | | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Dalmatian toadflax | 4. Strategic Control | Provincially Noxious | No |
| Mullein | 4. Strategic Control | | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Sulphur cinquefoil | 4. Strategic Control | | Yes |
| Yellow hawkweed species | 4. Strategic Control | | Yes |
| Curled dock | 5. Insufficient Information | | Yes |
| Flat peavine | 5. Insufficient Information | | No |
| Western goat's-beard | 5. Insufficient Information | | Yes |

Despite the high level of disturbance at this site, CKISS noted that invasive plant establishment is currently minimal. Most invasive plants were found along the perimeter of the site, with a few plants found along the road. Limited access to the southern portion of the tailings area, where rock blasting took place, prevented a complete inventory of the site. Nevertheless, based on what was visible from a distance, CKISS observed soil disruption and the presence of invasive plants in this area.

Scentless chamomile is a concern at this site, as it is a priority to eradicate and is found in small quantities. Unfortunately, scentless chamomile could not be treated in 2023 as the plants were found in the tailings area and could not be accessed safely (Figure 1).

On July 27th, Kootenay Weed Control chemically treated nine invasive species. The chemical treatment focused on the access road to the main HB tailings site, beginning at the HB tailings sign and stopping at the end of the access road. Herbicide was applied as a spot treatment using a handgun sprayer.

Figure 1. Scentless chamomile locations within the HB Tailings facility in 2023.

## 3.9 KASLO TRANSFER STATION

In 2023, 10 invasive plant species were identified at the Kaslo Transfer station (Table 7). One species is a priority to eradicate, two species are a priority to contain, five species are a priority to strategically control, and two species have insufficient information to determine a priority. Seven species are listed as “Noxious Weeds” under the *BC Weed Control Act*. Landowners are legally required to manage these listed invasive plant species on their property.

Blueweed was not present in 2022 and reappeared in 2023. Hoary alyssum was also found in 2023 and is outside of its regional containment area.

Ongoing treatment of giant knotweed is showing good results with the infestation decreasing from a continuous dense patch in 2018 to a few medium-density patches in 2023.

On August 8th, Kootenay Weed Control chemically treated nine invasive plant species including blueweed, hoary alyssum and giant knotweed. Plants were treated using a handgun sprayer, focused on high-priority species. Low-priority species were treated in high-use areas as time permitted.

Table 7. Invasive plants surveyed at the Kaslo Transfer Station in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Blueweed | 2. Eradicate | Regionally Noxious | Yes |
| Hoary alyssum | 3. Contain - Outside Containment | Regionally Noxious | Yes |
| Giant knotweed | 3. Contain | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| Common comfrey | 5. Insufficient Information | | Yes |
| Curled dock | 5. Insufficient Information | | Yes |

## 3.10 Marblehead Transfer Station

In 2023, 11 invasive plant species were identified at the Marblehead Transfer Station (Table 8). Ten of the species identified are a priority to strategically control and one species has insufficient information to determine a priority listing. Four species are listed as “Noxious Weeds” under the *BC Weed Control Act* and are legally required to be controlled.

Table 8. Invasive plants surveyed at the Marblehead Transfer Station in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Mullein | 4. Strategic Control | | Yes |
| Orange hawkweed | 4. Strategic Control | Regionally Noxious | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Yellow hawkweed species | 4. Strategic Control | | Yes |
| Flat peavine | 5. Insufficient Information | | Yes |

On July 31st, Kootenay Weed Control, chemically treated all 10 invasive plant species. Herbicide was applied using a handgun sprayer, as a spot treatment to invasive plants in high-traffic areas including roadsides, around bins, and other structures.

## 3.11 NAKUSP LANDFILL

In 2023, four invasive plant species were identified at the Nakusp Landfill (Table 9). Blueweed is a priority to eradicate, Himalayan blackberry and hoary alyssum were found outside of their regional containment area and Japanese knotweed is a priority to contain. Three of the species identified are listed as “Noxious Weeds” under the BC Weed Control Act and are legally required to be controlled.

The Japanese knotweed infestation has improved since it was first identified in 2019. It was initially a dense, continuous occurrence. In the subsequent years, knotweed appeared disturbed and was spread to new locations within the landfill, including along the Northern fence line. Knotweed has been controlled for several years and in 2023, knotweed was no longer found along the Northern fence line, and only a few individual plants were present throughout the site.

Along the Northern fence line, blueweed has spread from only two individual plants in 2019 to a few medium-density patches in 2023. Throughout the rest of the landfill, the blueweed infestation has improved from several high-density patches in 2019, to only sporadic individual plants present in 2023.

The hoary alyssum infestation has not changed from when it was first observed in 2019. It is still present in medium density along the Northern fence line, and low density throughout the rest of the site.

The Himalayan blackberry infestation has not changed significantly since it was first observed in 2019. This may be because it was last chemically treated in 2020.

On August 1st, Kootenay Weed Control chemically treated all four invasive plant species. A backpack sprayer and a handgun sprayer were used to spot-treat invasive plants.

Table 9. Invasive plants surveyed at the Nakusp Landfill in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Blueweed | 2. Eradicate | Regionally Noxious | Yes |
| Hoary alyssum | 3. Contain - Outside Containment | Regionally Noxious | Yes |
| Himalayan blackberry | 3. Contain - Outside Containment | | Yes |
| Japanese knotweed | 3. Contain | Provincially Noxious | Yes |

## 3.12 OOTISCHENIA LANDFILL

In 2023, eight invasive plant species were identified at the Ootischenia Landfill (Table 10). Three of the species are a priority to contain, and five of the species are a priority to strategically control. Five of the species identified are listed as “Noxious Weeds” under the BC Weed Control Act and are legally required to be controlled.

Himalayan blackberry was found in 2023 after not being present in 2022. Ongoing treatment of bohemian knotweed is showing good results as the patch has decreased from a dense patch in 2019, to two individual plants.

On July 30th, Kootenay Weed Control chemically treated eight invasive plant species including knotweed, Himalayan blackberry and hoary alyssum. A handgun sprayer was used to apply herbicide to the plants. Additionally, contractors removed and bagged a few clumps of immature fruit from the Himalayan blackberry before treating the plants.

Table 10. Invasive plants surveyed at the Ootischenia Landfill in 2023.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| Bohemian knotweed | 3. Contain | Provincially Noxious | Yes |
| Himalayan blackberry | 3. Contain | | Yes |
| Hoary alyssum | 3. Contain | Regionally Noxious | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |

## 3.13 Central (Salmo) Transfer Station

In 2022, the Central (Salmo) Transfer Station underwent significant soil disturbance from construction activities. In 2023, CKISS staff conducted an invasive species inventory of all disturbed areas. During this inventory, 17 invasive plant species were identified (Table 11). Three of the species are a priority to eradicate, one species is a priority to contain, 10 species are a priority to strategically control, and three species have insufficient information to determine a priority listing. Five of the species identified are listed as “Noxious Weeds” under the BC Weed Control Act and landowners are legally required to control these species on their properties.

Table 11. Invasive plants surveyed at the Central (Salmo) Transfer Station.

| Invasive Plant | Priority | BC Weed Control Act Listing | Invasive Plant Found |
|---|---|---|---|
| North Africa grass | 2. Eradicate | | Yes |
| Poison hemlock | 2. Eradicate | | Yes |
| Scentless chamomile | 2. Eradicate | Provincially Noxious | Yes |
| Hoary alyssum | 3. Contain | Regionally Noxious | Yes |
| Canada thistle | 4. Strategic Control | Provincially Noxious | Yes |
| Chicory | 4. Strategic Control | | Yes |
| Common burdock | 4. Strategic Control | | Yes |
| Common tansy | 4. Strategic Control | Regionally Noxious | Yes |
| Dames rocket | 4. Strategic Control | | Yes |
| Mullein | 4. Strategic Control | | Yes |
| Oxeye daisy | 4. Strategic Control | | Yes |
| Spotted knapweed | 4. Strategic Control | Provincially Noxious | Yes |
| St. John's-wort | 4. Strategic Control | | Yes |
| Yellow hawkweed species | 4. Strategic Control | | Yes |
| Common comfrey | 5. Insufficient Information | | Yes |
| Curled dock | 5. Insufficient Information | | Yes |
| Western goat's-beard | 5. Insufficient Information | | Yes |

This was the first year that North Africa grass was found at this location. North Africa grass is a priority to eradicate and is a relatively new invader to this region. It quickly outcompetes native perennial grasses, leading to rapid reductions in biodiversity and increased soil erosion[1]. This plant is being actively treated on provincial jurisdictions and by other Land Managers in the region.

In 2022, a few patches of scentless chamomile were found near the compost facility at the Central (Salmo) Transfer Station. In 2023, a few sporadic individual plants were found around the main transfer area and access road. CKISS suspects that soil containing scentless chamomile may have been spread around the property during soil disturbance and construction in 2022.

The poison hemlock infestation has improved since it was first identified at the Transfer Station. Poison hemlock has been chemically controlled several times. In 2019, poison hemlock plants were originally found in many patches or clumps and in 2023, were found in two isolated patches.

On July 25th, Kootenay Weed Control chemically treated six invasive plant species, including poison hemlock, scentless chamomile and hoary alyssum. A backpack applicator and handgun sprayer were used to spot-treat these invasive plants. Treatment was focused on high-priority species and high-use areas such as the entrance of the Transfer Station, around bins, tire piles, and 3-4 metres on either side of the access road for 900 metres.

On August 24th, Kootenay Weed Control chemically controlled poison hemlock and four other invasive plant species. Kootenay Weed Control noted that most poison hemlock plants were dead from the previous treatment. They mechanically removed a couple of poison hemlock plants that were within 6 m of a wet ditch and could not be treated with herbicide.

## 3.14 Slocan Transfer Station

In 2023, Morrow BioScience Ltd. was contracted by CKISS to control knotweed at the Slocan Transfer Station. Morrow BioScience Ltd. scheduled the chemical treatment several times and needed to reschedule due to weather or staffing levels. CKISS communicated closely with Morrow BioScience Ltd. regarding this site in an attempt to ensure treatments occurred. Unfortunately, due to reasons beyond CKISS' control, Morrow BioScience Ltd. was unable to control knotweed at the Slocan Transfer Station and CKISS was not provided enough time to hire a different contractor to complete the work.

## 3.15 Treatment Monitoring

CKISS monitors a minimum of 10% of all treated sites. Sites that received monitoring were picked at random. In 2023, senior CKISS staff monitored six of 17 RDCK Resource Recovery Facility treatment sites. Four of the monitored treatments showed an average efficacy of 90-100%, and two of the monitored treatments showed an average of 80-89% efficacy.

[1] Sheinost, P., Stannard, M., Prather, T. (2008). Ventenata Plant Guide. *USDA-NRCS Pullman Plant Materials Center USA*. http://plants.usda.gov/plantguide/pdf/pg_vedu.pdf

# 4. Recommendations

CKISS recommends that RDCK staff and contractors follow best management practices to prevent the introduction and spread of invasive species at resource recovery facilities and to manage priority invasive plants within the specific facilities.

Prevention is the most cost-effective way to manage invasive species[2] and reduce the impacts of invasive plants on RDCK properties. Specifically, CKISS recommends that RDCK staff and contractors receive annual invasive plant training, including identification of priority plants, review best management practices and training on disposing of invasive plants within the resource recovery facilities.

On December 18th, 2023, CKISS provided the RDCK with site-specific recommendations for 2024. This document contained property-specific recommendations at the HB Tailings Site and the 12 resource recovery facilities.

Thank you RDCK for working with CKISS to reduce the impacts of invasive species. We appreciate your support and hope to continue this partnership in 2024 and beyond.

# 5. 2023 Data

Data collected during the season is attached in a spreadsheet submitted with this report.

[2] Cuthbert, R. N., Diagne, C., Hudgins, E. J., Turbelin, A., Ahmed, D. A., Albert, C., Bodey, T. W., Briski, E., Essl, F., Haubrock, P. J., Gozlan, R. E., Kirichenko, N., Kourantidou, M., Kramer, A. M., & Courchamp, F. (2022). Biological invasion costs reveal insufficient proactive management worldwide. *Science of The Total Environment*, *819*, 153404. https://doi.org/10.1016/j.scitotenv.2022.153404

# Invasive Plant Management Budget

## Regional District of Central Kootenay

# HB Tailings and Resource Recovery Sites 2024

The RDCK has requested CKISS to provide a proposal to conduct management of invasive plants on RDCK Resource Recovery sites in 2024. Due to concerns raised by RDCK staff and members of the public in 2023 regarding the application of herbicides, CKISS was requested to include budget options to exclude chemical control methods for any sites/species where alternative methods could reasonably be expected to be effective. We have clearly indicated which option we are recommending for each site, based on our experience and industry-standard best practices for maximum efficacy and cost-effective management. Any proposed herbicide treatments will not include the use of glyphosate, as per the RDCK Board resolution passed in 2019, and will be completed only by licensed, experienced contractors who meet all regulatory requirements. CKISS will work closely with RDCK staff to develop the project scope and associated work plans as needed.

Staff training for all front-line resource recovery staff is highly recommended in order to prevent invasive plant spread and improve public awareness. With that in mind we have included budget sufficient to prepare, coordinate and deliver one half-day workshop (can be virtual) in 2024. The cost for this training is proportionally included in the budget options provided for each site.

All invasive plant work proposed below includes detailed data collection, entry of all data into the provincial InvasivesBC database, and a brief summary report with recommendations and budget for the following year.

## 2024 Recommendations and Budget, With Treatment Options

### Balfour Transfer Station

In 2023, knotweed and Himalayan blackberry were planned for targeted herbicide treatments. The blackberry was treated, but live knotweed was not found at the time of treatment. Dead knotweed stalks were found in the organic waste disposal pile, indicating that either staff or public were unaware of best practices to prevent knotweed spread.

**Recommendations for 2024:**

1. Monitoring, and follow-up control (likely), of Himalayan blackberry and knotweed regrowth
    - Himalayan blackberry: mechanical control with proper disposal is considered effective, and also cost-effective, on small infestations. This technique is recommended for follow-up treatment at Balfour.
    - Knotweed: the only recommended control for knotweed is herbicide application according to Best Management Practices. To reduce public concern with spraying, wipe-on foliar application is recommended (additional cost due to time-consuming process required). The only alternative option for knotweed management is complete excavation and deep burial. Due to the high likelihood of missing rhizome fragments, which will result in eventual regrowth, this option is unlikely to fully control the knotweed without follow-up treatment in future years. CKISS does not provide excavation service and we are not able to estimate cost for this option.

**Options for 2024**

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Balfour Transfer Station | CKISS- all recommended monitoring, herbicide control, training and reporting<br>**$1,865.26** | CKISS- monitoring, training and report, with blackberry mechanical control only:<br>**$2,043.15**<br>**+**Additional cost for excavation & disposal: unknown |

## Boswell Transfer Station

In 2023, an extensive Himalayan blackberry infestation was controlled with a combination of herbicide, along with mechanical treatment in wet areas where herbicide could not be applied. Approximately 50m$^2$ of infested area remained on the site after planned control work was completed in 2023.

**Recommendations for 2024:**

1. Follow-up control of Himalayan blackberry
    - Option 1 (Recommended): Due to the size and established nature of the infestation at Boswell, we recommend continuing with a combined treatment approach in 2024. Follow-up herbicide application should be planned for the majority of the infestation, with mechanical control in wet areas which are not suitable for herbicide use.
    - Option 2: Mechanical control with proper disposal is considered effective for this species, and if no herbicide is preferred, we have provided this as a second option on its own. Although it is difficult to predict the extent of regrowth after the previous year's treatment, it is safe to assume that mechanical control of the entire site will require significant effort, which is reflected in the budgeted cost.

**Options for 2024**

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Boswell Transfer Station | CKISS- chemical and mechanical control, training and reporting<br>**$5,245.74** | CKISS - Mechanical control on full site, training and reporting<br>**$8,050.68** |

## Burton Transfer Station

In 2023, hoary alyssum was controlled with herbicide at the site.

**Recommendations for 2024:**

Follow-up control of hoary alyssum with the goal of eradication on the site.

- Option 1 (recommended): Herbicide control is the most effective method for hoary alyssum, as it can provide season-long control of seed germination and avoids soil disturbance. For these reasons, herbicide control is our recommended approach for this site in 2024.
- Option 2: Mechanical control with proper disposal along with seeding of disturbed soil is considered effective on small hoary alyssum infestations. This technique may be sufficient for follow-up treatment at Burton. This can be completed by the CKISS field crew, if the herbicide option is not preferred.

**Options for 2024**

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Burton Transfer Station | CKISS- chemical control, training and data/ reporting<br>**$1,972.83** | CKISS- mechanical control and seeding (one day, 2- person crew), training and reporting<br>**$2,352.78** |

## Crawford Bay Transfer Station

In 2023, an extensive Scotch broom infestation was partially treated by mechanical removal. Due to the need to transport all plant material to a landfill, combined with ferry schedules, and landfill hours, full control was not achieved within the budgeted time.

**Recommendations for 2024:**

Finish initial Scotch broom control and control regrowth on previously treated areas.

- Option 1 (recommended): Mechanical control is a very effective method for Scotch broom, and is the best option for this site. We estimate that four crew-days will be required.
- Option 2: N/A

**Options for 2024**

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Crawford Bay Transfer Station<br>115523 | CKISS- mechanical control, training and data/ reporting<br>**$5,926.28** | Not required<br>(Option 1 does not require herbicide) |

## Creston Landfill

In 2023, extensive infestations of a variety of high, medium and low priority invasive plants (common tansy, scentless chamomile, hoary alyssum, along with ten lower priority species) were treated with herbicide. Treatments targeted areas of high traffic and disturbance. Two of the highest priority species on the site, blueweed and spotted knapweed, were not found in 2023 indicating good efficacy of the previous control. The management goal on this site is to reduce the density and prevent further spread from the site; full eradication of all species is unlikely but ongoing control will meet the RDCK's obligations under the Weed Control Act. We anticipate that after two more years of targeted treatment the site may be sufficiently improved to move to a monitoring schedule and/or minimal control of priority species.

**Recommendations for 2024:**

Monitor the site and continue invasive plant control in areas with high density of high and medium priority invasive plants, focussing on areas that are at risk of public access or disturbance.

- Option 1 (recommended): Follow-up monitoring and herbicide treatment is recommended as the most cost-effective control option to reduce invasive plants on the site and prevent off-site spread.
- Option 2: Follow-up monitoring survey by CKISS, along with biweekly mowing of all infested areas from mid May until September (approximately seven times over the season), including roadsides, public access areas, and perimeter areas. This option will reduce seed set and invasive plant spread; however, it will not reduce the invasive plant density on the site and should be considered an annual maintenance task for the foreseeable future. Some species will adapt their morphology to flower and set seed below mowing height. CKISS does not provide mowing services, so alternate arrangements would need to be made by RDCK.

**Options for 2024**

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Creston Landfill | CKISS- monitoring, herbicide control, training and data/ reporting<br>**$4,803.74** | CKISS- monitoring, training and data/ reporting only:<br>**$1,168.98**<br>+ Additional cost for biweekly mowing May-September |

## Creston Compost Facility

In 2023, the composting facility area within the Creston Landfill site received a full baseline inventory, and priority species/areas were spot-treated with herbicide. Similar to the landfill area, the composting site was found to have several priority species including common tansy, scentless chamomile, and spotted knapweed, along with 12 lower priority species in high densities. Perimeter areas in particular were found to have high densities of invasive plants, and recent disturbance will likely result in additional regrowth in 2024.

**Recommendations for 2024:**

Monitor the site and continue invasive plant control in areas with high density of high and medium priority invasive plants, focussing on areas that are at risk of public access or disturbance.

- Option 1 (recommended): Follow-up monitoring and herbicide treatment is recommended as the most cost-effective control option to reduce invasive plants on the site and prevent off-site spread.
- Option 2: Follow-up monitoring by CKISS, along with biweekly mowing of all infested areas from mid May until September (approximately seven times over the season), including roadsides, public access areas,

and perimeter areas. This option will reduce seed set and invasive plant spread; however, it will not reduce the invasive plant density on the site and should be considered an annual maintenance task for the foreseeable future. Some species will adapt their morphology to flower and set seed below mowing height. CKISS does not provide mowing services, so alternate arrangements would need to be made by RDCK.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Creston Compost Facility | CKISS- monitoring, herbicide control, training and data/ reporting<br>**$4,803.74** | CKISS- monitoring, training and data/ reporting only:<br>**$1,168.98**<br>+ Additional cost for biweekly mowing May-September |

## Edgewood Transfer Station

In 2023, hoary alyssum was controlled with herbicide at the site.

**Recommendations for 2024:**

Follow-up control of hoary alyssum with the goal of eradication on the site.

- Option 1 (recommended): Herbicide control is the most effective method for hoary alyssum, as it can provide season-long control of seed germination and avoids soil disturbance. For these reasons, follow-up herbicide control is our recommended approach for this site in 2024.
- Option 2: Mechanical control with proper disposal along with seeding of disturbed soil is considered effective on small hoary alyssum infestations. This technique may be sufficient for follow-up treatment at Burton. This can be completed by the CKISS field crew, if the herbicide option is not preferred.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Edgewood Transfer Station | CKISS- chemical control, training and data/ reporting<br>**$1,972.83** | CKISS- mechanical control and seeding (one day, 2- person crew), training and reporting<br>**$2,352.78** |

## HB Tailings Site

In 2023, a comprehensive invasive plant inventory was completed at this site. The majority of species are relatively low priority; however, scentless chamomile was found during this year's surveys which is a high priority species the Salmo area and has not been previously identified on this site. It was likely spread into the HB site from the Central Transfer Station /Landfill areas above.

**Recommendations for 2024:**

Control of scentless chamomile, and other invasive plants along access roads and higher use areas is recommended. Herbicide application is the most effective control option for this species.

**Estimated budget for 2024: $2,755.67**

## Kaslo Transfer Station

In 2023, priority species including giant knotweed, blueweed and hoary alyssum were controlled by herbicide application at the Kaslo transfer station, along with six lower priority species in high traffic areas. The giant knotweed is now very sparse and stunted after three consecutive years of treatment.

**Recommendations for 2024:**

Monitor the site and follow-up control of priority species.

- Option 1 (recommended): Monitoring surveys by CKISS staff, and herbicide treatment of priority species along with additional treatments of lower priority species in high traffic areas if time allows.
- Option 2: as discussed under the Balfour Transfer Station, the only alternative option for knotweed management is complete excavation and deep burial. Due to the high likelihood of missing rhizome fragments, which will result in eventual regrowth, this option is unlikely to fully control the knotweed without follow-up treatment in future years. CKISS does not provide excavation service and we are not able to estimate cost for this option. Blueweed and hoary alyssum (and any Scotch broom regrowth) may be controlled by mechanical treatment, which can be completed by the CKISS field crew.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Kaslo Transfer Station | CKISS- monitoring, herbicide control, training and data/ reporting<br>**$2,817.14** | CKISS- monitoring, mechanical treatment, training and report:<br>**$2,066.20**<br>+ Additional cost for excavation & disposal: unknown |

## Marblehead Transfer Station

In 2023, ten species of low priority invasive plants (i.e., common tansy, Canada thistle, burdock, spotted knapweed) were treated with herbicide to reduce density and prevent off-site spread. This was the third consecutive season of treatments on the site, and it is likely that regular mowing may suffice in future, since the species on the site are relatively low priority.

**Recommendations for 2024:**

Monitor the site and schedule biweekly maintenance mowing between May-September to suppress invasive plants.

- Option 1 (recommended): Monitoring surveys by CKISS staff, and biweekly mowing approximately seven times over the season to prevent seed set on invasive plant species.
- Option 2: not required – no herbicide proposed in Option 1

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Marblehead Transfer Station | CKISS- monitoring, training and data/ reporting<br>**$1,371.82**<br>+ Additional cost for biweekly mowing May-September | N/A |

## Nakusp Landfill

In 2023, follow-up herbicide treatment was completed targeting high priority species Japanese knotweed, blueweed, hoary alyssum, and Himalayan blackberry.

**Recommendations for 2024:**

Monitor the site and conduct follow-up treatments of high priority species.

- Option 1 (recommended): Monitoring by CKISS staff and herbicide control of all priority species. Since knotweed is present on site and herbicide is the best/only recommended control method, this would be the most cost-effective and efficacious option.
- Option 2: as discussed under the Balfour Transfer Station, the only alternative option for knotweed management is complete excavation and deep burial. Due to the high likelihood of missing rhizome fragments, which will result in eventual regrowth, this option is unlikely to fully control the knotweed without follow-up treatment in future years. CKISS does not provide excavation service and we are not able to estimate cost for this option. Blueweed, Himalayan blackberry and hoary alyssum may be controlled by mechanical treatment, which can be completed by the CKISS field crew.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Nakusp Landfill | CKISS- monitoring, herbicide control, training and data/ reporting<br>**$2,940.09** | CKISS- monitoring, mechanical treatment, training and data/ reporting:<br>**$2,686.01** + Additional cost for excavation & disposal: unknown |

## Ootischenia Landfill

In 2023, three high priority species (Bohemian knotweed, Himalayan blackberry, and hoary alyssum) were treated at Ootischenia Landfill, along with lower priority species throughout the landfill area. The Bohemian knotweed has been reduced to a few stunted stems over the past years of consistent treatment.

**Recommendations for 2024:**

Monitor the site and conduct follow-up control of high priority species and high traffic areas.

- Option 1 (recommended): Monitoring surveys by CKISS staff, and herbicide treatment of priority species along with additional treatments of lower priority species in high traffic areas if time allows.
- Option 2: as discussed under the Balfour Transfer Station, the only alternative option for knotweed management is complete excavation and deep burial. Due to the high likelihood of missing rhizome fragments, which will result in eventual regrowth, this option is unlikely to fully control the knotweed without follow-up treatment in future years. CKISS does not provide excavation service and we are not able to estimate cost for this option. Himalayan blackberry and hoary alyssum may be controlled by mechanical treatment, which can be completed by the CKISS field crew.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Ootischenia Landfill | CKISS- herbicide control, training and data/ reporting<br>**$2,755.67** | CKISS- monitoring, mechanical treatment, training and data/ reporting only:<br>**$2,301.81** + Additional cost for excavation & disposal: unknown |

## Central (Salmo) Transfer Station

In 2023, CKISS conducted a comprehensive inventory following significant site disturbance the previous year. Several extremely high priority species were identified: North Africa grass (regional EDRR species) is new to the site, and scentless chamomile and poison hemlock continue to re-occur in diminishing amounts.

**Recommendations for 2024:**

Control priority species with two passes of treatment recommended to maximize efficacy.

- Option 1 (recommended): Currently, the primary recommended treatment for North Africa grass is early season herbicide application (personal communication, Provincial Invasive Plant Agrologist). We strongly recommend treatment due to the high priority status of the species. In addition, herbicide treatment of poison hemlock is the best option, due its poisonous characteristics which pose a risk to staff during mechanical treatments. Scentless chamomile should be included in poison hemlock treatments, as herbicide is considered the most effective control option for this species and the timing aligns well.
- Option 2: Hand-pulling is reported to be effective for small patches of North Africa grass, if completed before seed set in early spring. Poison hemlock and scentless chamomile may be controlled by two passes of mechanical treatment in mid and late season, which can be completed by the CKISS field crew.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Central (Salmo) Transfer Station | CKISS- herbicide control (early season for NAG, two passes mid and late season for other species), training and data/ reporting<br>**$6,732.96** | CKISS- mechanical treatment (3 passes), training and data/ reporting only:<br>**$6,077.70** |

## Slocan Transfer Station

In 2023, planned herbicide treatment of the Bohemian knotweed patches at Slocan was not completed due to scheduling difficulties and the sub-contractor's time constraints.

**Recommendations for 2024:**

Mid-season (pre-flowering) control of Bohemian knotweed is recommended, with monitoring and a late season follow-up treatment if needed.

- Option 1 (recommended): Herbicide application is the only recommended treatment method for knotweed, so we recommend this option, with two passes as noted above.
- Option 2: as discussed under the Balfour Transfer Station, the only alternative option for knotweed management is complete excavation and deep burial. Due to the high likelihood of missing rhizome fragments, which will result in eventual regrowth, this option is unlikely to fully control the knotweed without follow-up treatment in future years. CKISS does not provide excavation service and we are not able to estimate cost for this option.

| Site | Option 1: Recommended | Option 2: No Herbicide |
|---|---|---|
| Slocan Transfer Station | CKISS- herbicide control (2 passes budgeted), training and data/ reporting<br>**$2,809.46** | CKISS- monitoring, mechanical treatment, training and data/ reporting only:<br>**$1,989.36** + Additional cost for excavation & disposal: unknown |

## Breakdown of Estimated Costs by Site

| Invasive Plant ID & Prevention Workshop | Rate | Estimated Amount | Item Cost |
|---|---|---|---|
| Education Coordinator: training workshop coordination, preparation, and delivery | $ 65.70 | 20.00 | $1,314.00 |
| Printed handouts and resources for workshop participants | $ 1.50 | 25.00 | $37.50 |
| Travel for program delivery (if needed for in person workshop): free of charge from CKISS Education Program | $0.68/km | 150.00 | $0.00 |
| **Total Workshop Cost (before taxes)** | | | **$1,351.50** |
| **Cost per site (14 sites), rounded to nearest $10** | | | **$100.00** |

## Balfour Transfer Station

### Option 1 (recommended)

| Description | Rate | Estimated Amount | Item Cost |
|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 |
| Contractor: herbicide application | $ 1,548.75 | 0.50 | $774.38 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 60.00 | $40.80 |
| Administration: 13% of project expense | | | $203.08 |
| **Total Site Cost (before taxes)** | | | **$1,865.26** |

### Option 2

| Rate | Estimated Amount | Item Cost |
|---|---|---|
| $ 90.30 | 2.00 | 180.6 |
| $ 77.30 | 3.00 | $231.90 |
| $ 48.50 | 3.00 | $145.50 |
| $ 46.00 | 22.00 | $1,012.00 |
| $ 1,548.75 | 0.00 | $0.00 |
| $ 100.00 | 1.00 | $100.00 |
| $ - | 0.00 | $0.00 |
| $ 0.68 | 220.00 | $149.60 |
| | | $223.55 |
| | | **$2,043.15** |

## Boswell Transfer Station

### Option 1 (recommended)

| Description | Rate | Estimated Amount | Item Cost |
|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | $180.60 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 40.00 | $1,840.00 |
| Contractor: herbicide application | $ 1,548.75 | 1.00 | $1,548.75 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 750.00 | $510.00 |
| Administration: 13% of project expense | | | $591.99 |
| **Total Site Cost (before taxes)** | | | **$5,245.74** |

### Option 2

| Rate | Estimated Amount | Item Cost |
|---|---|---|
| $ 90.30 | 2.00 | $180.60 |
| $ 77.30 | 3.00 | $231.90 |
| $ 48.50 | 3.00 | $145.50 |
| $ 46.00 | 112.00 | $5,152.00 |
| $ 1,548.75 | 0.00 | $0.00 |
| $ 100.00 | 1.00 | $100.00 |
| $ - | 0.00 | $0.00 |
| $ 0.68 | 1950.00 | $1,326.00 |
| | | $914.68 |
| | | **$8,050.68** |

## Burton Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 | $ 48.50 | 3.00 | $145.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 22.00 | $1,012.00 |
| Contractor: herbicide application | $ 1,548.75 | 0.50 | $774.38 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ 1.00 | 325.00 | $325.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 200.00 | $136.00 | $ 0.68 | 200.00 | $136.00 |
| Administration: 13% of project expense | | | $215.46 | | | $221.78 |
| **Total Site Cost (before taxes)** | | | **$1,972.83** | | | **$2,352.78** |

## Crawford Bay Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost |
|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 3.00 | $145.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 80.00 | $3,680.00 |
| Contractor: herbicide application | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 1350.00 | $918.00 |
| Administration: 13% of project expense | | | $670.28 |
| **Total Site Cost (before taxes)** | | | **$5,926.28** |

## Creston Landfill

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 3.00 | 270.9 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 4.00 | $309.20 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 6.00 | $291.00 | $ 48.50 | 7.00 | $339.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 2.00 | $92.00 |
| Contractor: herbicide application | $ 1,548.75 | 2.00 | $3,097.50 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ 1.00 | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 150.00 | $102.00 | $ 0.68 | 150.00 | $102.00 |
| Administration: 13% of project expense | | | $541.14 | | | $122.98 |
| **Total Site Cost (before taxes)** | | | **$4,803.74** | | | **$1,168.98** |

## Creston Compost Facility

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 3.00 | 270.9 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 4.00 | $309.20 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 6.00 | $291.00 | $ 48.50 | 7.00 | $339.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 2.00 | $92.00 |
| Contractor: herbicide application | $ 1,548.75 | 2.00 | $3,097.50 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ 1.00 | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 150.00 | $102.00 | $ 0.68 | 150.00 | $102.00 |
| Administration: 13% of project expense | | | $541.14 | | | $122.98 |
| **Total Site Cost (before taxes)** | | | **$4,803.74** | | | **$1,168.98** |

## Edgewood Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 | $ 48.50 | 3.00 | $145.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 22.00 | $1,012.00 |
| Contractor: herbicide application | $ 1,548.75 | 0.50 | $774.38 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ 325.00 | 1.00 | $325.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 200.00 | $136.00 | $ 0.68 | 200.00 | $136.00 |
| Administration: 13% of project expense | | | $215.46 | | | $221.78 |
| **Total Site Cost (before taxes)** | | | **$1,972.83** | | | **$2,352.78** |

## HB Tailings Site

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost |
|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 |
| Contractor: herbicide application | $ 1,548.75 | 1.00 | $1,548.75 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 80.00 | $54.40 |
| Administration: 13% of project expense | | | $305.52 |
| **Total Site Cost (before taxes)** | | | **$2,755.67** |

## Kaslo Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 | $ 48.50 | 3.00 | $145.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 22.00 | $1,012.00 |
| Contractor: herbicide application | $ 1,548.75 | 1.00 | $1,548.75 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ - | 1.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 160.00 | $108.80 | $ 0.68 | 250.00 | $170.00 |
| Administration: 13% of project expense | | | $312.59 | | | $226.20 |
| **Total Site Cost (before taxes)** | | | **$2,817.14** | | | **$2,066.20** |

## Marblehead Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost |
|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 10.00 | $485.00 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 |
| Contractor: herbicide application | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 200.00 | $136.00 |
| Administration: 13% of project expense | | | $146.32 |
| **Total Site Cost (before taxes)** | | | **$1,371.82** |

## Nakusp Landfill

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 | $ 48.50 | 8.00 | $388.00 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 22.00 | $1,012.00 |
| Contractor: herbicide application | $ 1,548.75 | 1.00 | $1,548.75 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ - | 1.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 320.00 | $217.60 | $ 0.68 | 700.00 | $476.00 |
| Administration: 13% of project expense | | | $326.74 | | | $297.51 |
| **Total Site Cost (before taxes)** | | | **$2,940.09** | | | **$2,686.01** |

## Ootischenia Landfill

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 | $ 48.50 | 8.00 | $388.00 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 22.00 | $1,012.00 |
| Contractor: herbicide application | $ 1,548.75 | 1.00 | $1,548.75 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ - | 1.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 80.00 | $54.40 | $ 0.68 | 200.00 | $136.00 |
| Administration: 13% of project expense | | | $305.52 | | | $253.31 |
| **Total Site Cost (before taxes)** | | | **$2,755.67** | | | **$2,301.81** |

## Central (Salmo) Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 14.00 | $1,082.20 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 12.00 | $582.00 | $ 48.50 | 3.00 | $145.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 94.00 | $4,324.00 |
| Contractor: herbicide application | $ 1,548.75 | 2.50 | $3,871.88 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ - | 0.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 90.00 | $61.20 | $ 0.68 | 600.00 | $408.00 |
| Administration: 13% of project expense | | | $763.08 | | | $687.70 |
| **Total Site Cost (before taxes)** | | | **$6,732.96** | | | **$6,077.70** |

## Slocan Transfer Station

| Description | Option 1 (recommended) Rate | Estimated Amount | Item Cost | Option 2 Rate | Estimated Amount | Item Cost |
|---|---|---|---|---|---|---|
| Executive Director: project oversight, client communications, recommendations | $ 90.30 | 2.00 | 180.6 | $ 90.30 | 2.00 | 180.6 |
| Field Program Manager: contractor and crew coordination, project management, site assessment & reporting | $ 77.30 | 3.00 | $231.90 | $ 77.30 | 3.00 | $231.90 |
| Assistant Field Program Manager: treatment/site monitoring, data management, reporting support | $ 48.50 | 5.00 | $242.50 | $ 48.50 | 3.00 | $145.50 |
| Field Technician: mechanical treatments, inventory support, data entry | $ 46.00 | 2.00 | $92.00 | $ 46.00 | 22.00 | $1,012.00 |
| Contractor: herbicide application | $ 1,548.75 | 1.00 | $1,548.75 | $ 1,548.75 | 0.00 | $0.00 |
| Portion of Training Workshop | $ 100.00 | 1.00 | $100.00 | $ 100.00 | 1.00 | $100.00 |
| Other: seed, overnight accommodation & meals for remote sites | $ - | 0.00 | $0.00 | $ - | 1.00 | $0.00 |
| Mileage: travel to work sites and disposal (CRA rate) | $ 0.68 | 150.00 | $102.00 | $ 0.68 | 150.00 | $102.00 |
| Administration: 13% of project expense | | | $311.71 | | | $217.36 |
| **Total Site Cost (before taxes)** | | | **$2,809.46** | | | **$1,989.36** |

# Committee Report

| | |
|---|---|
| **Date of Report:** | March 20, 2024 |
| **Date & Type of Meeting:** | April 17, Joint Resource Recovery Committee |
| **Author:** | Heidi Bench, Resource Recovery Projects Advisor |
| **Subject:** | LANDFILL GAS FEASIBILITY STUDY UPDATE |
| **File:** | 12-6300-20 |
| **Electoral Area/Municipality** | All areas |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is provide an update regarding landfill gas management feasibility study funding opportunities and to seek direction to apply for a Green Municipal Fund business case grant through the Federation of Canadian Municipalities.

## SECTION 2: BACKGROUND/ANALYSIS

In February 2024, Staff presented the results of the RDCK's 2023 Landfill Gas (LFG) Generation Assessments and a summary of existing and proposed regulatory frameworks related to LFG emissions, as well as how these are expected to impact the RDCK in coming years. Staff sought direction for a LFG management strategy at RDCK landfills, and at the February 14, 2024 Open Regular Board Meeting, the following resolution was passed:

**#67/24:** *That the Board direct Staff to apply to the Local Government Climate Action Program (LGCAP) fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas (LFG) management at the Creston and Ootischenia Landfills;*

*AND FURTHER that the RDCK request Fortis BC partner with the RDCK to complete a feasibility study in support of its long term strategy to implement Landfill Gas management.*

FortisBC staff reviewed the data available in the 2023 LFG Generation Assessments for both Creston and Ootischenia landfills. A FortisBC Program Manager and the renewable natural gas (RNG) team responded that the size of the RDCK landfills and quantities of LFG produced is not sufficient to make either landfill an economically viable candidate for an RNG project at this time. FortisBC is currently navigating the regulatory framework to pilot a project with a small landfill to sell carbon offset credits, which could have potential to make the collection and upgrading of LFG to RNG more economically viable for small landfills. They suggested reaching out again in six months for more information.

Upon initiating the application to use LGCAP funding for a feasibility study, Staff on the Community Sustainability team (who administers the RDCK's LGCAP funding) identified a new funding opportunity directly related to LFG management. The Green Municipal Fund (GMF) is a federally funded program that helps fund sustainability projects that help municipalities adopt climate solutions faster. New in 2024, the GMF Organic Waste-to-Energy grants support communities to reduce greenhouse gas emissions by generating energy from landfill gas and other organic waste streams.

Staff had previously been directed to complete a feasibility study that would identify options that could financially support LFG management at the Creston and Ootischenia landfills. The GMF program would provide funding for a much more fulsome business case study that would aim to:

- Determine the practicality and viability of available organic waste-to-energy systems for the Creston and Ootischenia landfills and identify a preferred system;
- Assess the potential environmental, social, and economic impacts and benefits;
- Quantify expected costs and potential revenue streams;
- Identify partnership opportunities;
- Define a proposed business model, including recommendations for project ownership, operations, and financing; and,
- Identify risks and mitigation options.

The estimated timeline from eligibility determination through grant award is four to six months. The GMF also offers additional funding for the design, construction, and commissioning of organic waste-to-energy systems if it is determined that there is a successful business case.

Staff are seeking direction to apply to the Federation of Canadian Municipalities (FCM) for a GMF Organic Waste-to-Energy business case grant.

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

| | | | |
|---|---|---|---|
| **Included in Financial Plan:** | ☐ Yes ☒ No | **Financial Plan Amendment:** | ☐ Yes ☒ No |
| **Debt Bylaw Required**: | ☐ Yes ☒ No | **Public/Gov't Approvals Required:** | ☐ Yes ☒ No |

Regional governments where the average population of member municipalities is less than 10,000 are eligible to qualify for a grant of up to 80 percent of eligible project costs, up to a maximum of $100,000. Based on discussions with two consultants, it is estimated that hiring a Qualified Professional to complete a business case study for Creston and Ootischenia landfills would cost up to $35,000.

If the RDCK were successful in obtaining GMF funding for 80% of this study, the remaining cost would be approximately $7,000, which could be covered by the RDCK's LGCAP funding in Service 100 – General Administration (Environmental Services). The grant is administered with 80% of the awarded value paid up front and the remaining 20% paid upon submission of interim and final reporting deliverables. As such, funding for this study would be paid from Service A102 – General Administration (Resource Recovery) until reimbursed by the grant funding. This would require a financial plan amendment, which Staff will request if successful in the grant application. Aside from Staff time, no additional costs would be incurred to the RDCK.

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

None at this time.

### 3.3 Environmental Considerations

None at this time.

### 3.4 Social Considerations:

None at this time.

### 3.5 Economic Considerations:

None at this time.

### 3.6 Communication Considerations:

None at this time.

### 3.7 Staffing/Departmental Workplace Considerations:

The Resource Recovery Projects Advisor would be responsible for the grant application and, if successful, the subsequent procurement of a consultant to conduct the business case, with input from the Resource Recovery Project Manager and General Manager of Environmental Services.

### 3.8 Board Strategic Plan/Priorities Considerations:

This aligns with the Board's strategic priority to innovate to reduce the impact of waste as well as the objective to incorporate energy efficiency and environmental responsibility by prioritizing environmental stewardship across all actions.

## SECTION 4: OPTIONS & PROS / CONS

**OPTION 1:** **That the Board direct Staff to apply for an Organic Waste-to-Energy business case grant from the Green Municipal Fund to assess viable waste-to-energy systems and business models for Creston and Ootischenia landfills; AND FURTHER that the balance of funding for this study, up to a maximum of $7,000, be covered by Local Government Climate Action Program funding in Service 100 – General Administration, should the grant application be successful.**

**PROS:**

- If successful in applying for the grant, the study would identify the most viable landfill gas management options including an evaluation of all environmental, social, and economic impacts, as well as partnership opportunities, and would define a business model along with quantification of costs and potential revenue streams.
- Would reduce the amount of LGCAP funds required, leaving these funds for other RDCK sustainability projects.

**CONS:**

- Would take some Staff resources to apply for the grant and, if successful, manage the project.

**OPTION 2:** **That the Board direct Staff to continue as per Resolution #67/24 and apply to the Local Government Climate Action Program fund for a grant to complete a feasibility study that would investigate options to financially support future Landfill Gas management at the Creston and Ootischenia Landfills;**

**PROS:**

- If successful in getting LGCAP funding, would identify opportunities to help fund the implementation of a LFG management system at Ootischenia landfill, as well as learn if there is any potential funding or revenue opportunities for the existing Creston LFG system.

**CONS:**

- Study would not be as fulsome as that which could be completed with the GMF grant.

- Potentially require more funding from the RDCK's LGCAP fund, leaving less funds for other RDCK sustainability projects.

## SECTION 5: RECOMMENDATIONS

**That the Board authorize Staff to apply for an Organic Waste-to-Energy business case grant from the Green Municipal Fund to assess viable waste-to-energy systems and business models for Creston and Ootischenia landfills;**

**AND FURTHER, that the balance of funding for this study, up to a maximum of $7,000, be covered by Local Government Climate Action Program funding in Service 100 – General Administration, should the grant application be successful.**

Respectfully submitted,

Heidi Bench – Resource Recovery Projects Advisor

## CONCURRENCE

Acting Resource Recovery Manager – Alayne Hamilton
General Manager of Environmental Services – Uli Wolf
Chief Administrative Officer – Stuart Horn

ATTACHMENTS: NONE

# Committee Report

| | |
|---|---|
| **Date of Report:** | April 9, 2024 |
| **Date & Type of Meeting:** | April 17, 2024 Joint Resource Recovery Committee |
| **Author:** | Larry Brown, Resource Recovery Operations Supervisor |
| **Subject:** | PURCHASE OF EAST, CENTRAL & WEST ROLL OFF BINS |
| **File:** | 06-2230-10-2024-054 ENV ROLLOFF BINS |
| **Electoral Area/Municipality** | East, Central and West Sub-regions |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to seek authorization to purchase six roll off bins for the collection and transport of waste from transfers station to the Ootischenia Landfill, Nakusp Landfill and Creston Landfill.

## SECTION 2: BACKGROUND/ANALYSIS

Roll off bins are used throughout the RDCK to collect and transport mixed waste, wood waste, and scrap metal from transfer stations to landfills or other locations for processing. All three subregions are in a position of needing asset replacement of roll off bins. An Invitation for Quote (ITQ 2024-054-ENV) for supply of up to six roll off bins was issued on March 13, 2024 and closed on April 2, 2024.

Four firms responded with quotations. Three quotations met all criteria and are considered qualified. The fourth quotation was not submitted by the closing time and is considered disqualified.

All qualified quotations were evaluated based on four criteria with points assigned accordingly.

1. Lowest overall cost to the RDCK (40 points),
2. Conformance to RDCK's specifications (30 points),
3. Delivery Date (20 points),
4. Warranty Offered (10 points).

The results of the quotation evaluation is as follows:

| Qualified Quotations | Points | Total Contract Price (excluding taxes) |
|---|---|---|
| Fusion West Manufacturing, North Battlefield SK | 99.27 | $103,444.62 |
| Dormel Containers, Delta, BC | 90 | $101,550.00 |
| Environmental Metal Works, Two Hills, AB | 64.53 | $117,637.98 |

While Dormel Containers had the lowest overall contract price Fusion West received more points based on the information submitted, notably the inclusion of a warranty.

Staff are requesting authorization to purchase six bins from the highest ranked quotation (Fusion West Manufacturing).

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

| | | | |
|---|---|---|---|
| **Included in Financial Plan:** | ☒ Yes ☐ No | **Financial Plan Amendment:** | ☐ Yes ☒ No |
| **Debt Bylaw Required**: | ☐ Yes ☒ No | **Public/Gov't Approvals Required:** | ☐ Yes ☒ No |

$40,000 is allocated in each of the sub-regions (West Waste Service S188, Central Waste Service S187, and East Waste Service S186) for a total of $120,000, Capital Expenditures, in the RDCK 2024 Financial Plan for the purchase of six waste roll off bins.

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

None at this time.

### 3.3 Environmental Considerations

None at this time.

### 3.4 Social Considerations:

None at this time.

### 3.5 Economic Considerations:

None at this time.

### 3.6 Communication Considerations:

None at this time.

### 3.7 Staffing/Departmental Workplace Considerations:

Not significant.

### 3.8 Board Strategic Plan/Priorities Considerations:

- Manage our assets and service delivery in a fiscally responsible manner

## SECTION 4: OPTIONS & PROS / CONS

**Option 1:** **Authorize staff to purchase six waste roll off bins up to a total value of $103,445, with the bins and cost to be evenly split by the West Waste Service S188 and Central Waste Service S187 and East Waste Service S186, Capital Expenditures.**

**PROS:**

- As the preferred quote is within budget it allows bins to be ordered as soon as final design is concluded

**CONS:**

- None noted

## SECTION 5: RECOMMENDATIONS

That the Board authorize staff to purchase six roll off bins from Fusion West Manufacturing up to a total cost of $103,445 (excluding GST) with the bins and cost to be evenly split by the West Waste Service S188 and Central Waste Service S187 and East Waste Service S186, Capital Expenditures.

AND FURTHER that the Chair and Corporate Officer be authorized to sign the necessary documents.

Respectfully submitted,

Larry Brown, Resource Recovery Operations Supervisor

## CONCURRENCE

Uli Wolf, General Manager Environmental Services
Amy Wilson, Resource Recovery Manager

**ATTACHMENTS: None**

# Committee Report

| | |
|---|---|
| **Date of Report:** | April 17, 2024 |
| **Date & Type of Meeting:** | April 17, 2024, Joint Resource Recovery Committee |
| **Author:** | Akane Norimatsu, Resource Recovery Technician |
| **Subject:** | KOKANEE CREEK MARINA RECYCLING DEPOT LEASE AGREEMENT |
| **File:** | 06-2230-10-2006 |
| **Electoral Area/Municipality** | Central Sub-Region |

## SECTION 1: EXECUTIVE SUMMARY

The purpose of this report is to present an update on the change of ownership of Kokanee Creek Marina Recycling Depot and obtain direction from the Joint Resource Recovery Committee for future operation of this depot.

## SECTION 2: BACKGROUND/ANALYSIS

Staff presented an update at the February 9, 2024 Central Resource Recovery Committee meeting regarding the lease agreement with Kokanee Creek Marine Ltd. for Kokanee Marina Recycling Depot. The owner of Kokanee Creek Marine Ltd. was not able to provide adequate insurance coverage for the snow removal service which is included in the agreement as the responsibility of the contractor. Further, Staff presented the costs associated with the operation of Kokanee Creek Marina Recycling Depot in 2023 to the Committee to consider the future operation of this depot.

As a result, the following resolution was passed at the February 15, 2024 Board meeting:

> *#57/24 That the Board direct staff not to enter into a Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot and permanently close the Kokanee Creek Marina Recycling Depot effective May 31, 2024.*

Staff prepared the site closure letter and notification to the public and the site staff at Kokanee Creek Marina was also informed regarding the permanent closure in mid February.

After the February Joint Resource Recovery Committee (JRRC) meeting site staff shared that Kokanee Creek Marine Ltd. had been sold to a new owner. Staff reached out to the new owner of Kokanee Marine Ltd., and inquired about their willingness to continue leasing the site to the RDCK to operate Kokanee Creek Marina Recycling Depot. The new owner confirmed that they are willing and able to continue the lease agreement with the RDCK and provide the required insurance coverage.

The RDCK is holding a referendum for the provision of three stream curbside collection services (Waste, Organics and Recycling) in Electoral Area F and H on May 11, 2024. The result may influence the decision to operate a Satellite Depot in Kokanee Creek as some users of this depot may fall within the proposed curbside services area.

Further, a Tipping Fee Assessment and Systems Efficiency Review is underway for the RDCK Resource Recovery System, and the detailed results from this study is expected to be presented at the JRRC meeting on May 15, 2024. One component of this study is to make suggestions as to where the RDCK could realize cost efficiencies by modifying services.

Staff recommend that the Board approves extending the Lease Agreement with the new owner until July 31, 2024 and return to the JRRC for direction on future operations of the Depot based new information at the June JRRC meeting.

## SECTION 3: DETAILED ANALYSIS

### 3.1 Financial Considerations – Cost and Resource Allocations:

| | | | |
|---|---|---|---|
| **Included in Financial Plan:** | ☒ Yes ☐ No | **Financial Plan Amendment:** | ☐ Yes ☒ No |
| **Debt Bylaw Required**: | ☐ Yes ☒ No | **Public/Gov't Approvals Required:** | ☐ Yes ☒ No |

Based on the direction of Board Resolution No. 57/24, staff reduced the 2024 operating budget associated with the Kokanee Depot in Service A117 Central Recycling by a total of approximately $30,500. That equates to approximately $4,350 per month. Extending the current lease and operations by two months would incur approximately $8,700 spread across a number of accounts (i.e. Salaries, Benefits, Contracted Services, and Rentals). Each account has some capacity for minor variation and staff feel this two month extension could be accommodated without a financial plan amendment. Should the Board later determine to maintain operations at the Kokanee Depot based on new information, a financial plan amendment may be required.

### 3.2 Legislative Considerations (Applicable Policies and/or Bylaws):

N/A

### 3.3 Environmental Considerations

N/A

### 3.4 Social Considerations:

N/A

### 3.5 Economic Considerations:

N/A

### 3.6 Communication Considerations:

If a decision is made to close operation of the Depot, the residents affected by the decision will be given sufficient notification in advance and alternative locations/options for recycling services will be identified.

### 3.7 Staffing/Departmental Workplace Considerations:

Staff are available operate the Depot should an extension of the lease be directed.

### 3.8 Board Strategic Plan/Priorities Considerations:

Manage our assets and service delivery in a fiscally responsible manner.

## SECTION 4: OPTIONS & PROS / CONS

**Option 1:** **That the resolution #57/24 being:**

**That the Board direct staff not to enter into a Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot and permanently close the Kokanee Creek Marina Recycling Depot effective May 31, 2024.**

**Be amended to read:**

**That the Board authorize staff to extend the Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot until July 31, 2024.**

**PROS:**

- Having the two month extension will give the RDCK time to determine the most cost efficient decision based on the results from the referendum in Electoral Area F and H as well as the finalized report from GHD for tipping fee/system efficiency study.

**CONS:**

- The cost savings from closing the depot for the two month extension period would not be realized.

**Option 2: No change to Board direction in Resolution No. 57/24, continue with site closure effective May 31, 2024.**

**PROS:**

- As of June 1, 2024, the RDCK will realize cost savings from halting operation of Kokanee Creek Marina Recycling Depot.

**CONS:**

- The results from the referendum in Electoral Area H and F as well as the tipping fee and system efficiency study may affect the decision of closing the depot permanently.

## SECTION 5: RECOMMENDATIONS

**That the resolution #57/24 being:**

**That the Board direct staff not to enter into a Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot and permanently close the Kokanee Creek Marina Recycling Depot effective May 31, 2024.**

**Be amended to read:**

**That the Board authorize staff to extend the Lease Agreement with Kokanee Creek Marine Ltd. for the lease of lands associated with the Kokanee Creek Marina Recycling Depot until July 31, 2024.**

Respectfully submitted,

Akane Norimatsu- Resource Recovery Technician

## CONCURRENCE

General Manager of Environmental Service – Uli Wolf
Resource Recovery Manager – Amy Wilson

# RCBC Information Services Report
# 2023 Summary – British Columbia

## Introduction

RCBC is pleased to provide this report about the results of the work our Information Services program has done in 2023. Since 1990, this program has been providing waste diversion and waste reduction information to British Columbia residents and businesses, and we continue to inform and educate the public about recycling programs and the circular economy.

The following report outlines the material requests and inquiry locations from our Contact Centre (phone/email/chat/text), Recyclepedia (web search widget), and Recyclepedia app (iOS and Android). In this report, you will find Recyclepedia data originating from our own webpage at www.rcbc.ca alongside the complete Recyclepedia data from all sources. External sites that host our search tool include Metro Vancouver, the Regional District of North Okanagan, the Squamish-Lillooet Regional District, the Regional District of Fraser-Fort George, the Resort Municipality of Whistler, the Stewardship Association of BC, Recycle BC, and Tire Stewardship BC. In 2023, two additional sites adopted Recyclepedia: the Regional District of Kootenay-Boundary and the District of Sechelt. Including data from all channels and all sites provides a more complete picture of our Information Services program because we maintain thorough and diligent processes to ensure the data is up to date.

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**Total Requests**
RCBC received a total of 290,050 inquiries across all 3 platforms in 2023.

**Total Number of Contact Centre Inquiries**
Our Contact Centre logged 33,732 interactions in 2023 in BC, representing 61,344 material requests across 4 interactive channels: phone, email, webchat, and SMS text.

**Recyclepedia Web Searches**
In 2023 there were 198,923 unique web searches on Recyclepedia. 111,345 originated from www.rcbc.ca and 87,578 originated from the 10 externally hosted client Recyclepedia widgets.

**Recyclepedia App Searches**
The smartphone Recyclepedia app for iPhone and Android had 29,783 searches.

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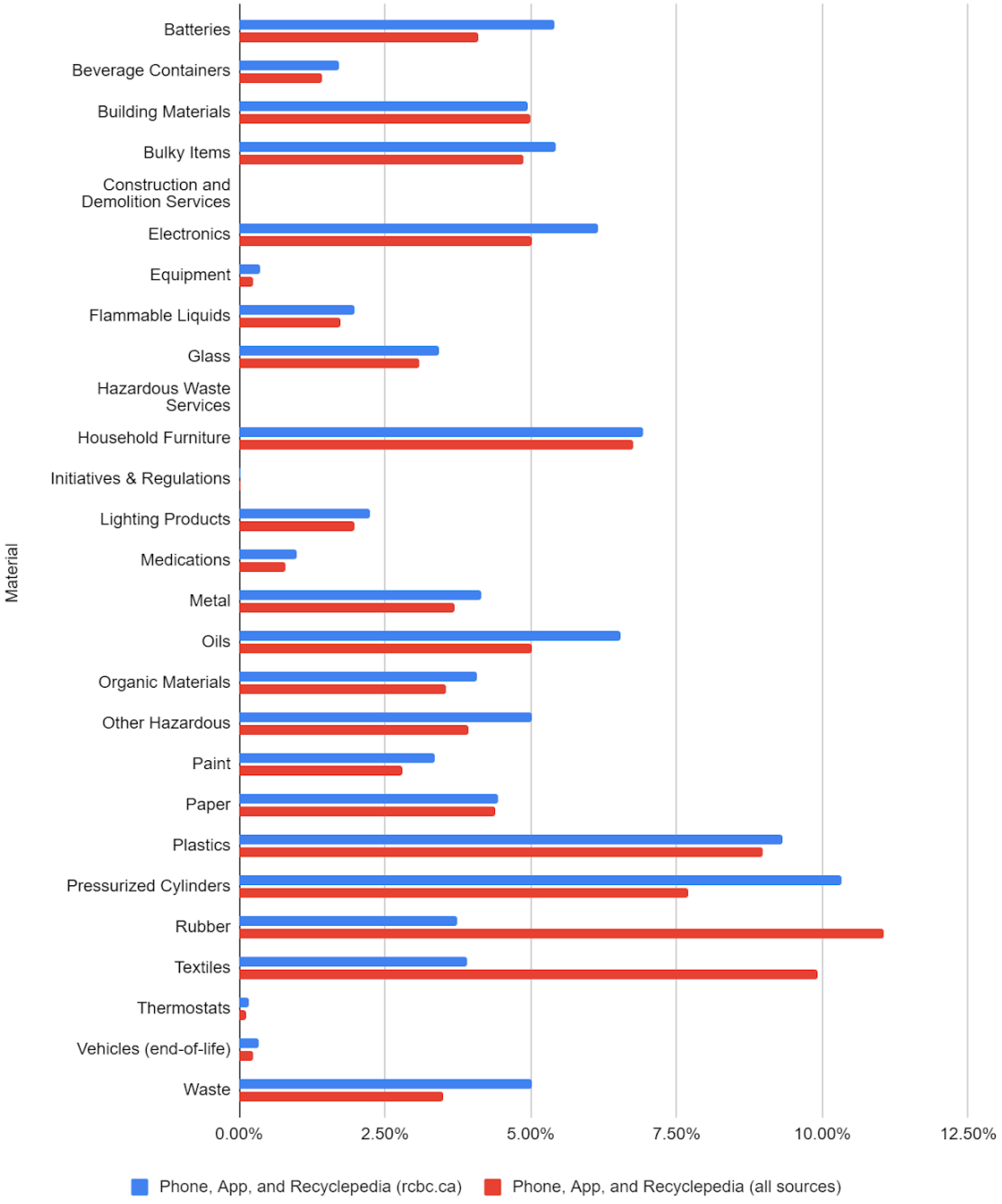
In comparison with 2022, total inquiries increased by 26.77%. Phone inquiries made up about 21% of total inquiries, down from 30% in 2022; app searches made up 10% of searches in 2023 compared to 15% the year prior; and Recyclepedia web searches increased to over 68% of inquiries in 2023 from 55% in 2022. Recyclepedia searches originating from rcbc.ca made up about 38% of total inquiries and 56% of Recyclepedia searches, with searches originating from other sites making up about 30% of total inquiries across platforms.

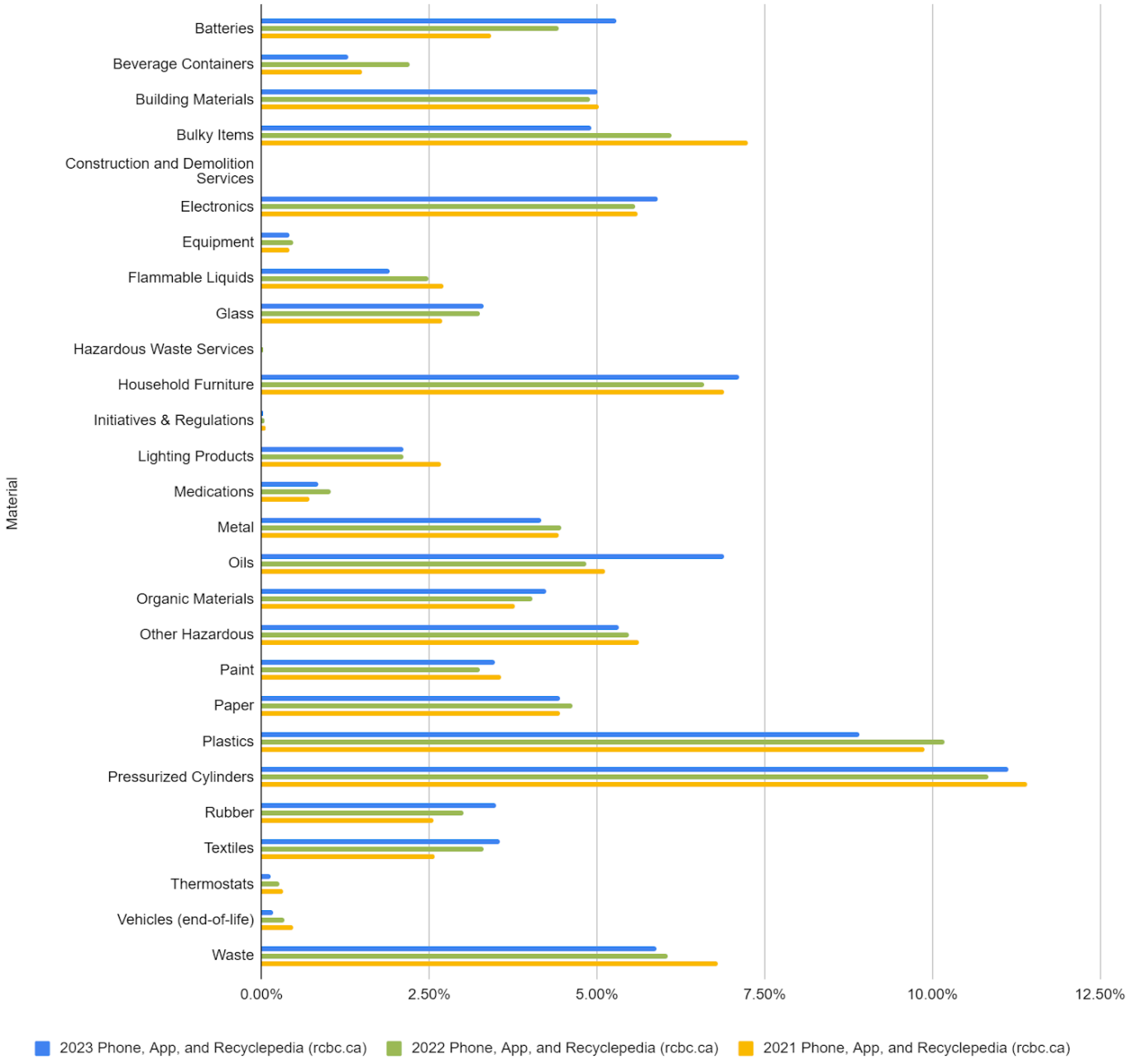
## Summary of Material Requests by Percentage for BC – 2023

The graph below displays a summary of total material requests, both originating solely from RCBC hosted sources and from all sources combined. Consistent with 2022, we again see in the all sources (red) graph a high percentage of searches for rubber products due to the use of the Recyclepedia widget on the TSBC website, and a high percentage of searches for textiles primarily originating from the Metro Vancouver Recycles site. Plastic, of all kinds, is also one of the most frequently asked about materials. In particular, inquiries for flexible plastic packaging material like stand-up pouches increased by 32% over 2022.



## Summary of Material Requests by Percentage for BC– 2021-2023

The graph below provides a comparison of material requests originating from the Contact Centre, the app, and the Recyclepedia search on rcbc.ca from 2021-2023. Notable trends include increases in the percentage of searches for batteries and oil products, and consistently high numbers of searches for pressurized cylinders and furniture items (which includes mattresses). Both pressurized cylinders and mattresses are targeted for future updates to the Recycling Regulation under the Five-Year Action Plan. Also notable is a decline in the number of searches for bulky items, a category which includes large and small appliances, electrical outdoor power equipment, and large electrical items like treadmills.



## Summary of Calls and Searches for BC – 2023

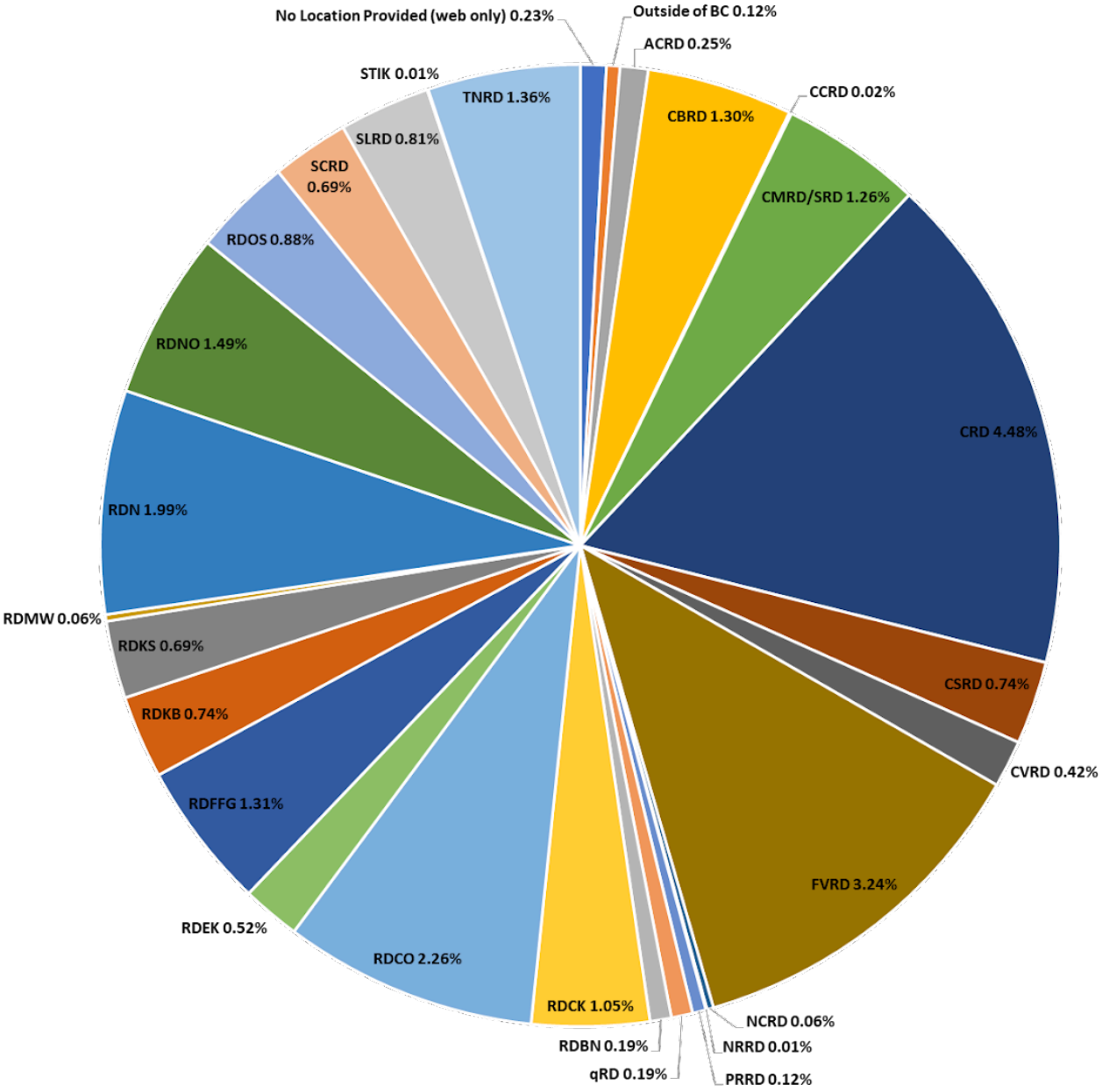
The table below shows the origin by Regional District for the phone calls and web searches we received in 2023. Note that data from the Comox Valley Regional District and Strathcona Regional District (labeled CMRD/SRD below) are combined because they share solid waste management services.

| Regional District | Number of Calls | Web Searches (rcbc.ca) | Web Searches (all sources) |
|---|---|---|---|
| **No Location Data** | n/a | 310 | 525 |
| **Outside of BC** | 35 | 185 | 245 |
| **ACRD** | 47 | 429 | 541 |
| **CBRD** | 66 | 2,016 | 2,970 |
| **CCRD** | 2 | 19 | 35 |
| **CMRD/SRD** | 170 | 2,127 | 2,773 |
| **CRD** | 511 | 7,896 | 9,904 |
| **CSRD** | 170 | 992 | 1,563 |
| **CVRD** | 60 | 745 | 927 |
| **FVRD** | 855 | 4,420 | 6,683 |
| **MV** | 29,711 | 71,080 | 141,259* |
| **NCRD** | 5 | 94 | 129 |
| **NRRD** | 3 | 21 | 27 |
| **PRRD** | 13 | 198 | 268 |
| **qRD** | 27 | 351 | 413 |
| **RDBN** | 33 | 290 | 408 |
| **RDCK** | 372 | 1,514 | 2,070 |
| **RDCO** | 312 | 3,854 | 4,944 |
| **RDEK** | 40 | 811 | 1,177 |
| **RDFFG** | 107 | 1,764 | 2,947 |
| **RDKB** | 108 | 1,092 | 1,607 |
| **RDKS** | 66 | 964 | 1,528 |
| **RDMW** | 9 | 98 | 136 |
| **RDN** | 299 | 3,120 | 4,327 |
| **RDNO** | 154 | 1,842 | 3,322 |
| **RDOS** | 243 | 1,449 | 1,804 |
| **SCRD** | 82 | 822 | 1,531 |
| **SLRD** | 48 | 661 | 1,845 |
| **STIK** | 0 | 10 | 27 |
| **TNRD** | 184 | 2171 | 2987 |
| **Grand Total:** | **33,732** | **111,345** | **198,923** |

*Includes 623 "All Cities" searches via MetroVancouverRecycles. These searches do not specify a particular town or city and cannot be attributed to a particular community, but encompass all Metro Vancouver communities.

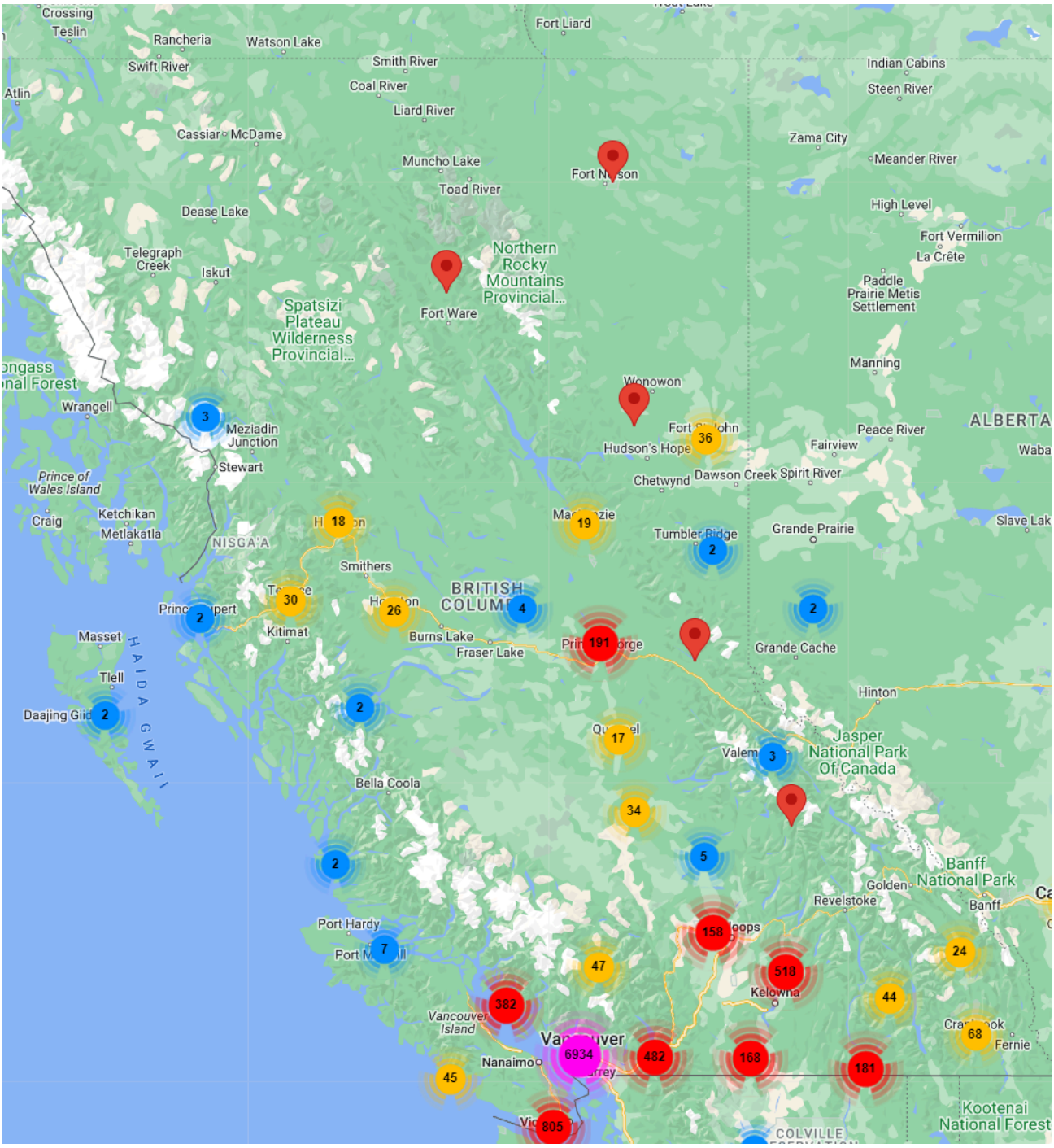
## Summary of Inquiry Locations for BC – 2023

This graph represents both phone calls and online Recyclepedia searches originating from www.rcbc.ca and all client Recyclepedia widgets; it excludes Metro Vancouver at 73.49% of inquiries. Approximately 68% of the BC population lives in three Regional Districts (Metro Vancouver, Fraser Valley Regional District, and Capital Regional District).



## Summary of Recyclepedia iOS and Android App Searches in 2023

This map shows all searches performed through our mobile apps in 2023. In terms of materials, the most searched item is Car & Light Truck Tires. Non-Reusable Clothing and Motor oil comprise the remainder of the top three search terms on the mobile apps.



# RCBC Recycling Hotline and Recyclepedia
## 2023 Summary – RDCK

**Total Hotline and Recyclepedia Inquiries = 2,882**

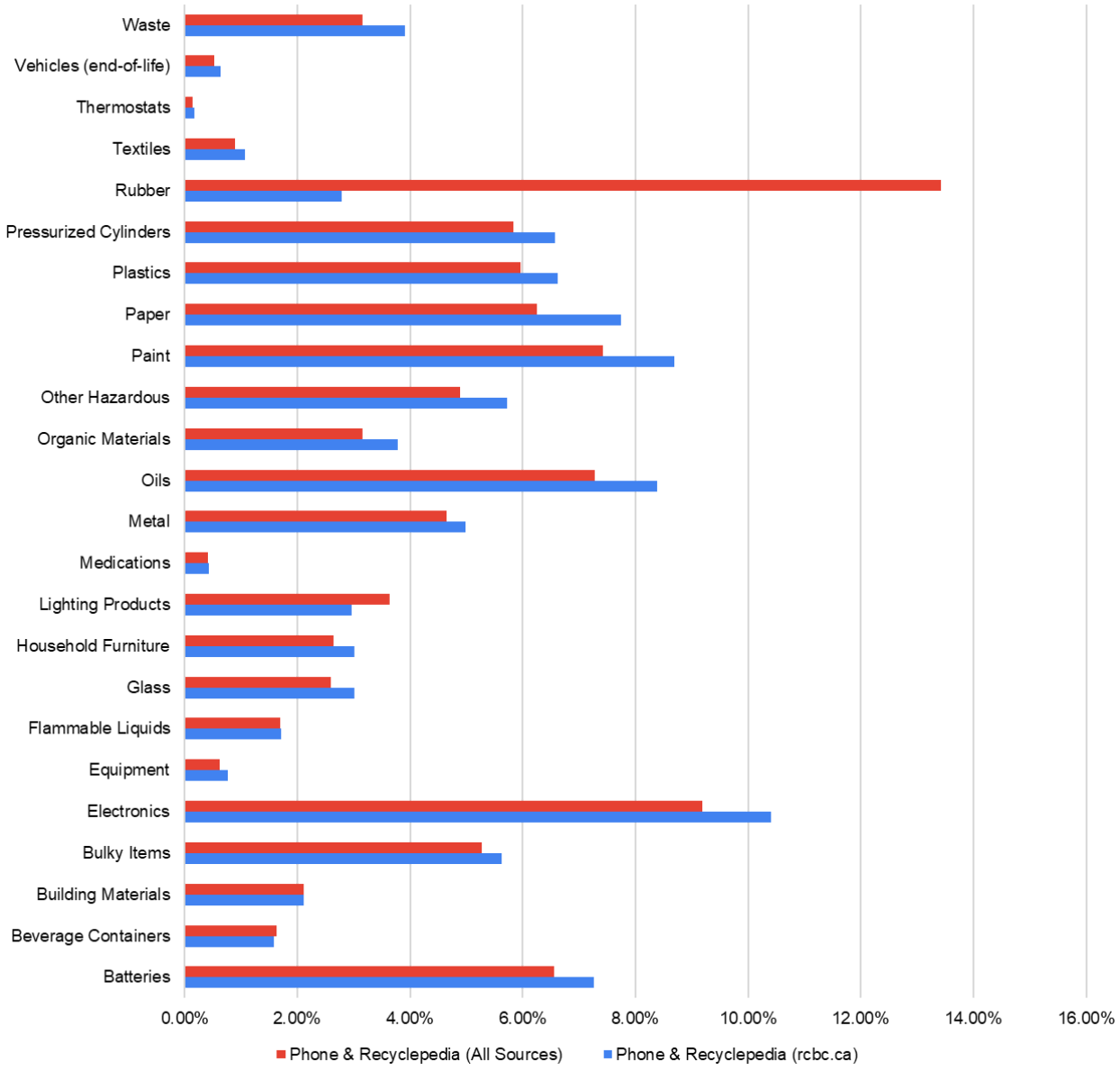
**Total Number of Hotline Enquiries**

The Recycling Hotline received 372 calls, representing 812 material requests.

**Recyclepedia Web Searches**

In 2023 there were 2,070 unique web searches on the Recyclepedia, 1,514 of which originated from www.rcbc.ca and 556 from externally hosted Recyclepedia widgets. Externally hosted Recyclepedia widgets include 6 local and regional governments, and 3 steward organizations including the Tire Stewardship BC location search. The TSBC widget accounts for the large number of searches for rubber products.

## Summary of Material Requests for the RDCK: 2023



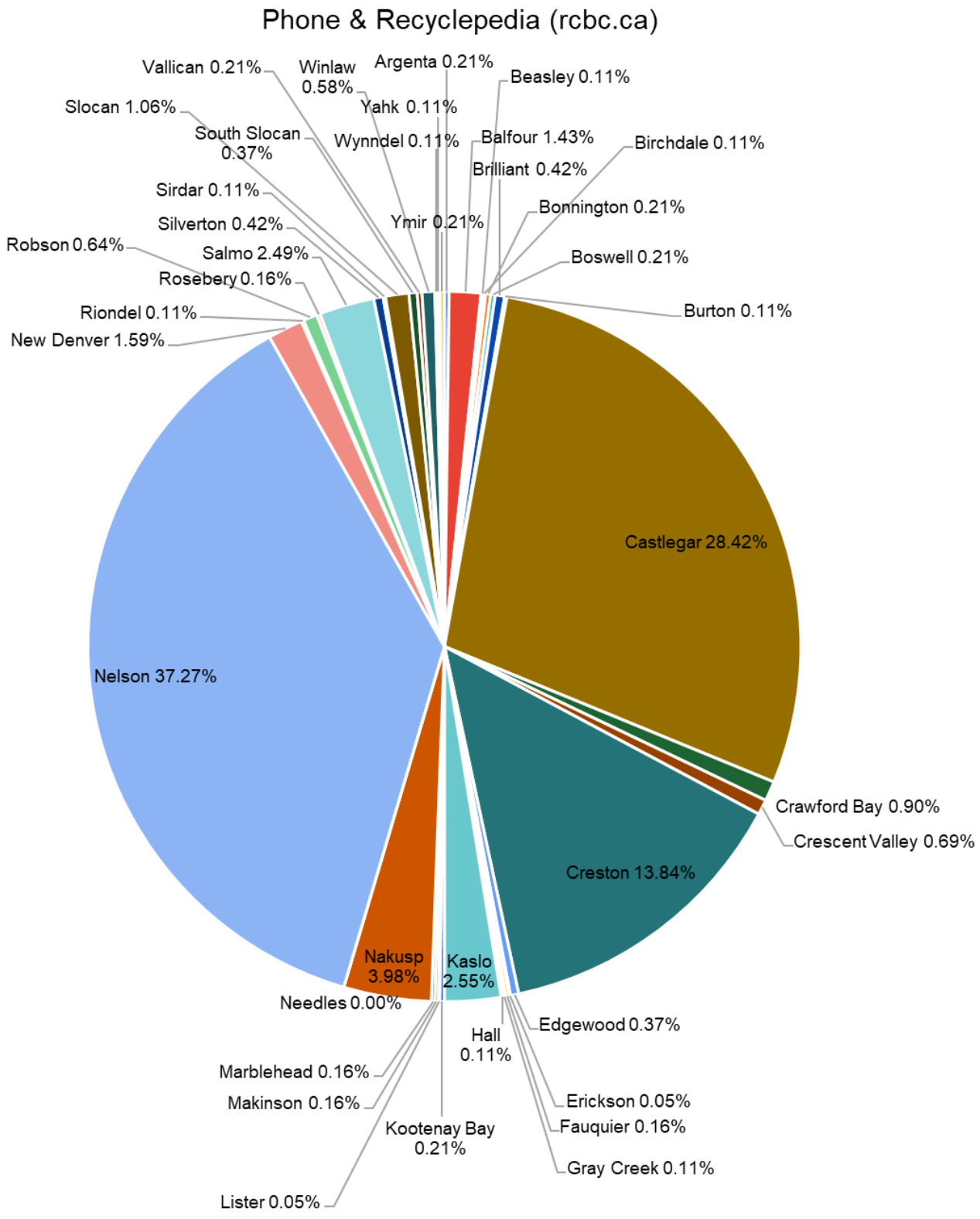
RECYCLING COUNCIL OF BRITISH COLUMBIA

# RCBC Recycling Hotline and Recyclepedia
## 2023 Summary – RDCK

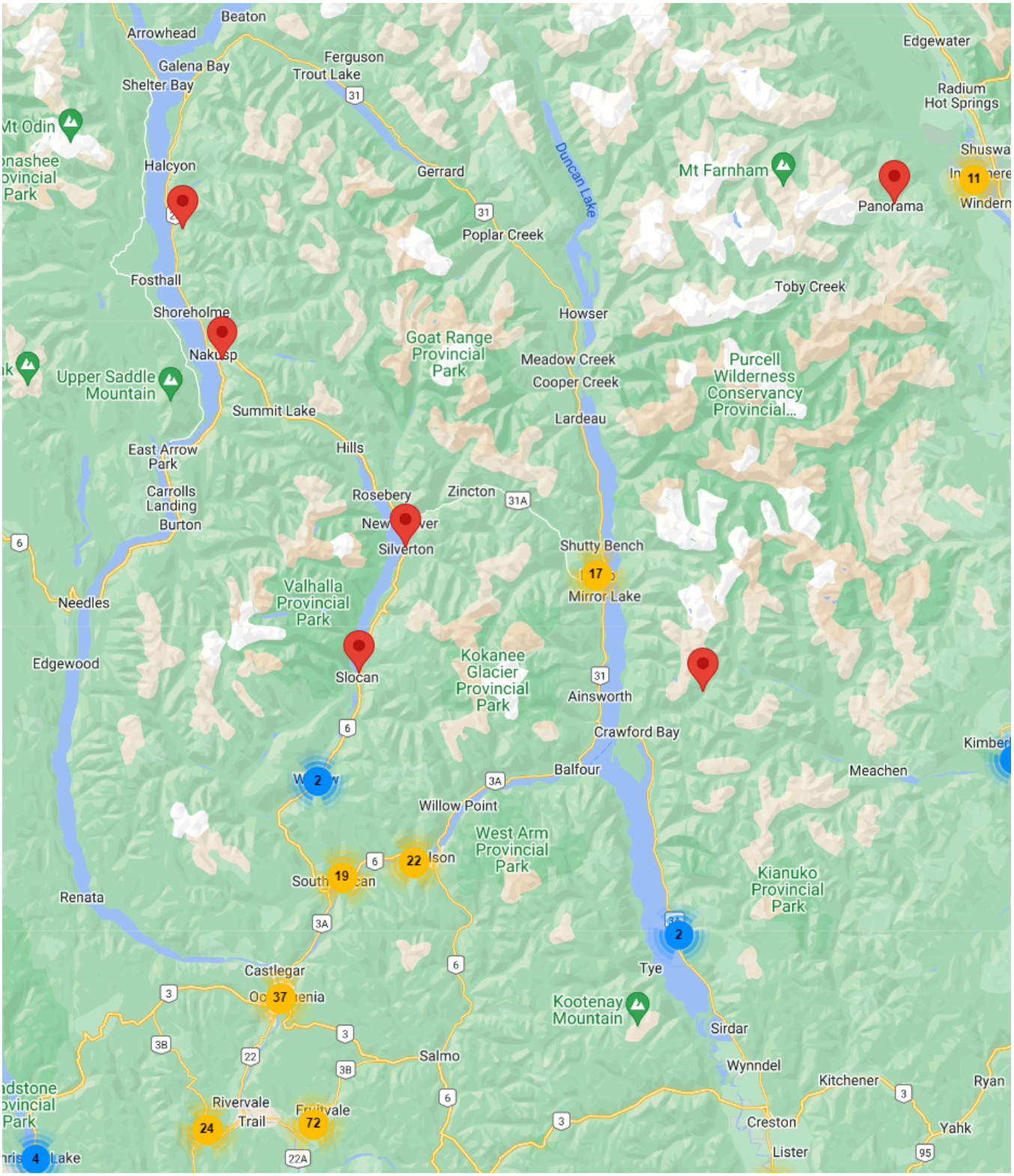
## Summary of Call Volumes for the RDCK: 2023

| City | Number of Calls | Number of Web Searches (rcbc.ca) | Number of Web Searches (all sources) |
|---|---|---|---|
| Argenta | 0 | 4 | 7 |
| Balfour | 9 | 18 | 28 |
| Beasley | 0 | 2 | 3 |
| Birchdale | 0 | 2 | 2 |
| Bonnington | 0 | 4 | 4 |
| Boswell | 0 | 4 | 5 |
| Brilliant | 3 | 5 | 7 |
| Burton | 0 | 2 | 3 |
| Castlegar | 79 | 457 | 620 |
| Crawford Bay | 3 | 14 | 23 |
| Crescent Valley | 4 | 9 | 12 |
| Creston | 49 | 212 | 346 |
| Edgewood | 0 | 7 | 10 |
| Erickson | 0 | 1 | 1 |
| Faquier | 0 | 3 | 3 |
| Gray Creek | 0 | 2 | 2 |
| Hall | 0 | 2 | 3 |
| Kaslo | 11 | 37 | 47 |
| Kootenay Bay | 2 | 2 | 2 |
| Lister | 0 | 1 | 1 |
| Makinson | 0 | 3 | 3 |
| Marblehead | 2 | 1 | 2 |
| Nakusp | 21 | 54 | 76 |
| Needles | 0 | 0 | 1 |
| Nelson | 156 | 547 | 687 |
| New Denver | 8 | 22 | 24 |
| Riondel | 1 | 1 | 2 |
| Robson | 2 | 10 | 11 |
| Rosebery | 1 | 2 | 2 |
| Salmo | 9 | 38 | 60 |
| Silverton | 2 | 6 | 13 |
| Sirdar | 0 | 2 | 2 |
| Slocan | 5 | 15 | 21 |
| South Slocan | 0 | 7 | 10 |
| Vallican | 0 | 4 | 4 |
| Winlaw | 3 | 8 | 12 |
| Wynndel | 0 | 2 | 2 |
| Yahk | 0 | 2 | 5 |
| Ymir | 2 | 2 | 4 |
| | | | |
| **Grand Total** | **372** | **1514** | **2070** |

## Distribution of Enquiries by City RDCK: 2023



## Recyclepedia App Searches - RDCK: 2023



**Date Range: January 1st, 2023 to December 31st, 2023**
**Material Request in RDCK -- Combined Media (Phone & Web Data)**

| Material | Phone | Web (rcbc.ca) | Web (all sources) |
|---|---|---|---|
| **Batteries** | **15** | **154** | **174** |
| Alkaline Batteries | 8 | 53 | 71 |
| E-bike & E-Scooter Batteries | 0 | 3 | 3 |
| Lead Acid Batteries | 6 | 71 | 71 |
| Other Batteries | 0 | 6 | 7 |
| Rechargeable Batteries | 1 | 21 | 22 |
| **Beverage Containers** | **17** | **20** | **30** |
| Beer Containers | 3 | 8 | 9 |
| Milk/Soy/Rice Containers | 5 | 2 | 3 |
| Non Alcoholic Refundable | 9 | 8 | 13 |
| Other Alcoholic Containers | 0 | 2 | 5 |
| **Building Materials** | **9** | **40** | **52** |
| Asbestos | 1 | 1 | 1 |
| Asphalt | 0 | 1 | 1 |
| Carpet | 2 | 3 | 3 |
| Concrete | 0 | 3 | 4 |
| Gypsum | 2 | 2 | 2 |
| Gypsum with Asbestos | 1 | 0 | 0 |
| Lumber | 0 | 1 | 2 |
| Mixed Construction Waste | 0 | 20 | 30 |
| Pallets | 0 | 3 | 3 |
| Reusable Building Materials | 3 | 0 | 0 |
| Roofing Shingles | 0 | 4 | 4 |
| Toilets | 0 | 2 | 2 |
| **Bulky Items** | **23** | **108** | **129** |
| Air Conditioners | 0 | 5 | 5 |
| Appliances Large | 5 | 17 | 23 |
| Appliances Small | 10 | 46 | 54 |
| Exercise Equipment | 0 | 17 | 18 |
| Fridge/Freezer | 3 | 7 | 10 |
| Outdoor Power Equipment | 2 | 8 | 9 |
| Smoke Alarms | 3 | 3 | 4 |
| Tools | 0 | 5 | 6 |
| **Electronics** | **43** | **199** | **222** |
| Car Electronics | 0 | 1 | 2 |
| Cartridges | 7 | 56 | 56 |
| CDs and DVDs | 7 | 10 | 10 |
| Cell Phones | 1 | 8 | 15 |
| Computers | 8 | 30 | 31 |
| Electronic Equipment | 1 | n/a | n/a |
| Electronic Musical Instrument | 0 | 2 | 2 |

| | | | |
|---|---|---|---|
| Electronic Thermometer | 0 | 4 | 4 |
| Home Audio and Video Systems | 6 | 9 | 9 |
| Personal Electronic Products | 0 | 18 | 24 |
| Photocopier | 0 | 1 | 1 |
| Storage Media | 9 | 37 | 39 |
| TV | 4 | 21 | 24 |
| Toys (Electronic/Electrical) | 0 | 2 | 5 |
| | | | |
| **Equipment** | **18** | **n/a** | **n/a** |
| Blue Box/Bags | 18 | | |
| | | | |
| **Flammable Liquids** | **11** | **29** | **38** |
| Flammable Liquids | 5 | 4 | 5 |
| Gasoline | 5 | 18 | 26 |
| Solvents | 1 | 7 | 7 |
| | | | |
| **Glass** | **30** | **40** | **45** |
| Eye Glasses | 1 | 27 | 27 |
| Glass Containers | 23 | 4 | 9 |
| Plate/Window Glass | 6 | 9 | 9 |
| | | | |
| **Household Furniture** | **21** | **49** | **55** |
| Child Car Seats | 4 | 23 | 24 |
| Furniture (Non Reusable) | 2 | 2 | 5 |
| Furniture (Reusable) | 1 | 0 | 0 |
| Hot Tubs | 0 | 4 | 4 |
| Mattress (Non Reusable) | 9 | 9 | 10 |
| Mattress (Reusable) | 0 | 5 | 6 |
| Reusable Household Items | 5 | 6 | 6 |
| | | | |
| **Lighting Products** | **22** | **47** | **83** |
| Commercial-use fixtures | 0 | 1 | 2 |
| Commercial-use lights | 4 | 13 | 27 |
| Light Strings | 0 | 1 | 1 |
| Non PCB Ballasts | 0 | 2 | 2 |
| Residential-use fixtures | 4 | 3 | 3 |
| Residential-use lights | 14 | 27 | 48 |
| | | | |
| **Medications** | **0** | **10** | **12** |
| Natural Health Product | 0 | 1 | 1 |
| Prescription Medication | 0 | 9 | 11 |
| | | | |
| **Metal** | **59** | **57** | **75** |
| Aluminum Scrap | 2 | 0 | 0 |
| Car Parts | 6 | 5 | 6 |
| Ferrous Metals | 45 | 29 | 33 |
| Mercury | 2 | 5 | 6 |
| Metal Drums (>25L) | 2 | 1 | 1 |
| Non-Ferrous Metals | 0 | 4 | 5 |

| | | | |
|---|---|---|---|
| Tin Cans | 2 | 13 | 24 |
| **Oils** | **52** | **143** | **158** |
| Fuel Oil | 8 | n/a | n/a |
| Oil | 24 | 120 | 130 |
| Oil Filters | 10 | 5 | 9 |
| Other Oil | 10 | 11 | 12 |
| P2 Oil Containers | 0 | 7 | 7 |
| **Organic Materials** | **60** | **28** | **31** |
| Christmas Trees | 0 | 1 | 1 |
| Fat/Grease | 16 | 19 | 21 |
| Food Scraps | 24 | 2 | 3 |
| Wood Material | 2 | 5 | 5 |
| Yard Trimmings | 18 | 1 | 1 |
| **Other Hazardous** | **72** | **61** | **69** |
| Antifreeze | 4 | 32 | 35 |
| Hazardous | 14 | 0 | 0 |
| Household Hazardous Waste | 51 | 12 | 14 |
| Pesticides | 0 | 8 | 8 |
| Pesticides-No Regulation | 3 | n/a | n/a |
| Pool Chemicals | 0 | 7 | 7 |
| Sharps | 0 | 2 | 5 |
| **Paint** | **47** | **155** | **167** |
| Paint | 34 | 131 | 143 |
| Paint Aerosols | 1 | 22 | 22 |
| Paint - No Regulation | 12 | n/a | n/a |
| Tree Marking Paint | 0 | 2 | 2 |
| **Paper** | **108** | **72** | **72** |
| Books Hard Cover | 20 | 22 | 22 |
| Books Soft Cover | 18 | 17 | 17 |
| Corrugated Cardboard | 18 | 9 | 9 |
| Mixed Waste Paper | 46 | 8 | 8 |
| Office Paper | 2 | n/a | n/a |
| Paper Cups & Cartons | 0 | 1 | 1 |
| Paper Packaging | 4 | 15 | 15 |
| **Plastics** | **73** | **81** | **99** |
| Car Parts (Plastic) | 0 | 3 | 3 |
| Other Flexible Plastic Packaging | 9 | 14 | 19 |
| P1 PET | 1 | 2 | 2 |
| P2 HDPE | 2 | 2 | 2 |
| P3 PVC | 1 | 3 | 3 |
| P4 LDPE | 1 | 0 | 0 |
| P5 PP | 5 | 6 | 6 |
| P6 Expanded PS | 1 | 3 | 8 |

| | | | |
|---|---|---|---|
| P6 PS | 1 | 4 | 4 |
| P7 Other | 17 | 9 | 12 |
| Plastic (Packaging) Foam | 8 | 20 | 24 |
| Plastic Bags and Overwrap | 1 | 10 | 11 |
| Plastic Packaging Containers | 24 | 5 | 5 |
| Soft Plastics | 2 | n/a | n/a |
| **Pressurized Cylinders** | **23** | **130** | **145** |
| Aerosol Cans (empty) | 2 | 21 | 30 |
| Butane Canisters | 12 | n/a | n/a |
| Fire Extinguishers | 2 | 19 | 20 |
| Oxygen & Acetylene Containers | 1 | n/a | n/a |
| Propane Tanks Disposable | 4 | 59 | 60 |
| Propane Tanks Refillable | 2 | 31 | 35 |
| **Rubber** | **11** | **54** | **376** |
| Bicycle Tires | 0 | 1 | 16 |
| Car and Light Truck Tires | 10 | 46 | 353 |
| Large Tires (web) | 1 | 6 | 6 |
| Other Rubber | 0 | 1 | 1 |
| **Textiles** | **0** | **25** | **26** |
| Clothing (Non Reusable) | 0 | 15 | 16 |
| Clothing (Reusable) | 0 | 10 | 10 |
| **Thermostats** | **0** | **4** | **4** |
| Mercury-containing Thermostats | 0 | 3 | 3 |
| Other Thermostat | 0 | 1 | 1 |
| **Vehicles (end-of-life)** | **7** | **8** | **8** |
| Cars | 7 | 8 | 8 |
| **Waste** | **91** | **n/a** | **n/a** |
| Garbage | 91 | | |
| **Grand Total -- 2023** | **Phone 812** | **Web (rcbc.ca) 1,514** | **Web (all sources) 2,070** |

If you have any questions or comments about this report, please contact us:

**Recycling Council of BC**
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