

**REGIONAL DISTRICT OF BULKLEY-NECHAKO****WASTE MANAGEMENT COMMITTEE****AGENDA**

Thursday, March 11, 2021

<u>PAGE NO.</u>		<u>ACTION</u>
	<u>CALL TO ORDER</u>	
	<u>AGENDA</u> – March 11, 2021	Approve
	<u>SUPPLEMENTARY AGENDA</u>	Receive
	<u>MINUTES</u>	
3-5	Waste Management Committee Meeting Minutes – June 4, 2020	Receive
	<u>REPORTS</u>	
6-19	Alex Eriksen, Director of Environmental Services -Agricultural Plastic Recycling – Clean Farms Pilot Program Budget	Recommendation
20	Alex Eriksen, Director of Environmental Services -Committee Roles & Responsibilities - Clarification	Receive
21-22	Alex Eriksen, Director of Environmental Services -Waste Characterization and Recycling Feedstock Inventory Scope - Update	Receive
23-62	Alex Eriksen, Director of Environmental Services -Cost Recovery Implementation – 2018 Board Motion	Receive
	<u>VERBAL REPORTS</u>	
	1. RDBN Advocacy - Community Engagement	
	2. Items - Future Meetings	

<u>PAGE NO.</u>	<u>CORRESPONDENCE</u>	<u>ACTION</u>
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63-65	Lakes District News – Jan. 13, 2021 - Customers won't get full Deposit on Aluminum Cans and Beer Bottles	Receive
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SUPPLEMENTARY AGENDA

NEW BUSINESS

ADJOURNMENT

REGIONAL DISTRICT OF BULKLEY-NECHAKO
WASTE MANAGEMENT COMMITTEE MEETING
(Committee Of The Whole)

Thursday, June 4, 2020

PRESENT: Chair Mark Fisher

Directors Shane Brienen
Dolores Funk
Judy Greenaway
Tom Greenaway
Clint Lambert
Linda McGuire
Chris Newell
Mark Parker
Jerry Petersen
Michael Riis-Christianson
Sarra Storey – left at 2:00 p.m.
Gerry Thiessen

Directors Gladys Atrill, Town of Smithers
Absent Brad Layton, Village of Telkwa

Staff Curtis Helgesen, Chief Administrative Officer
Cheryl Anderson, Manager of Administrative Services
Nellie Davis, Regional Economic Development Coordinator
– arrived at 2:45 p.m.
Janette Derksen, Deputy Director of Environmental Services
Alex Eriksen, Director of Environmental Services
John Illes, Chief Financial Officer
Deborah Jones-Middleton, Director of Protective Services
– arrived at 2:45 p.m.
Jason Llewellyn, Director of Planning – arrived at 2:45 p.m.
Deneve Vanderwolf, Regional Transit Coordinator/Planning
Technician – arrived at 2:50 p.m.
Wendy Wainwright, Executive Assistant

CALL TO ORDER

Chair Fisher called the meeting to order at 1:47 p.m.

AGENDA

Moved by Director McGuire
Seconded by Director Riis-Christianson

WMC.2020-3-1

“That the Waste Management Committee approve the June 4, 2020 Agenda.”

(All/Directors/Majority)

CARRIED UNANIMOUSLY

MINUTES

**Waste Management
Committee Meeting Minutes
-May 7, 2020**

Moved by Director Riis-Christianson
Seconded by Director Lambert

WMC.2020-3-2

“That the Minutes of the Waste Management Committee for May 7, 2020 be received.”

(All/Directors/Majority)

CARRIED UNANIMOUSLY

REPORT**Solid Waste Inventory and Feasibility Plan**

Manager Eriksen provided an overview of the Stakeholder Engagement Plan tentative dates outlined in the June 4, 2020 memo titled Solid Waste Inventory and Feasibility Plan.

The scope of work of the waste inventory study was discussed. Chair Fisher brought forward concerns in regard to a desktop study and the need for a larger scaled study and a complete waste audit. The waste inventory study is to provide short term data. Chair Fisher spoke of focusing on cardboard to enable potential partners to determine feasibility of secondary manufacturing options for cardboard recycling.

Break at 2:02 p.m.**Reconvened at 2:45 p.m.**

Discussion took place in regard to:

- A complete waste audit of the entire region
 - o Diverse recycling needs across the region
- Focus on cardboard amounts being landfilled
 - o Information can be used to determine potential secondary recycling options for cardboard
 - Essential to know cardboard volumes
 - Require information to provide to potential partners
 - o Staff will follow up with information regarding cardboard amounts currently being landfilled
- RDBN Environmental Services Summer Student is currently conducting a survey and visiting businesses in the communities in the region to determine ICI cardboard recycling needs
 - o Staff will provide the information to the Waste Management Committee once compiled.

Solid Waste Inventory and Feasibility Plan

Moved by Chair Fisher
Seconded by Director McGuire

WMC.2020-3-3

“That the Waste Management Committee recommend that the Board not proceed with hiring Tetrattech to conduct the waste inventory study for the RDBN.”

Opposed: Director Petersen **CARRIED**

(All/Directors/Majority)

VERBAL UPDATES**Chair Fisher Update**

Director Fisher, along with Environmental Services staff, has had conversations related to cardboard recycling with Loop. Loop is exploring options in regard to cardboard recycling in the region. He spoke of the importance of supporting local initiatives.

National Industrial Symbiosis Program (NISP)

Chair Fisher noted that NISP connects waste producers with individuals needing resources and is considering a Northern Coordinator in the region.

VERBAL UPDATES (CONT'D)

Zero Waste Store – Opening in Smithers

Chair Fisher mentioned that a Zero Waste Store is intending to open June 2020 in Smithers. Director Funk indicated that the Green Zone Grocer in Burns Lake has undertaken a similar initiative. He spoke of providing a letter of support for the initiative. Chair Fisher will bring forward a draft letter to a future meeting for committee consideration that can be provided to individuals/businesses moving forward with zero waste initiatives in the region.

ADJOURNMENT

Moved by Director Lambert
Seconded by Director McGuire

WMC.2020-3-4

“That the meeting be adjourned at 3:01 p.m.”

(All/Directors/Majority)

CARRIED UNANIMOUSLY

Mark Fisher, Chair

Wendy Wainwright, Executive Assistant



**REGIONAL DISTRICT OF BULKLEY-NECHAKO
MEMORANDUM**

To: Chairperson Fisher and the Waste Management Committee
 From: Alex Eriksen, Director of Environmental Services
 Date: March 11, 2021
 Subject: Agricultural Plastic Recycling – Clean Farms Pilot Program Budget

RECOMMENDATION

(All/Directors/Majority)

1. That the Committee recommend to the Board the approval of funding for the three-year agricultural plastics recycling pilot project with a collection target of 30%.
2. That the Committee recommend to the Board the approval of establishing three (3) agricultural plastics collection points at RDBN Transfer Stations and agrees to allot funds for constructing sorting bays.

BACKGROUND

Clean Farms is a non-profit environmental stewardship organization focused on reducing agricultural waste.

On October 1, 2020, the Board approved the allotment of up to \$5,000 (50% of the projected cost for RDBN) for Clean Farms to complete a region-wide Agricultural Waste Characterization Study. The objective of the study was to identify the potential volumes of agricultural twine, bale wrap and silage wrap available for collection and recycling within the RDBN. The study was conducted in conjunction with similar investigations in the Peace River (PRRD) and Fraser Fort George (FFGRD) Regional Districts. The cost for the study was below 50% of the proposed budget and therefore the RDBN did not have to contribute any of the allotted \$5,000. On February 11, 2021, the Committee of the Whole received the Waste Characterization Summary (included in attachment) which identified the available volumes of bale wrap, silage wrap and twine in the RDBN. On February 25, received a presentation from Clean Farms to provide a better understanding of their organization and the model for the pilot program.

The Peace River Regional District Board has provided preliminary approval for the pilot program but is awaiting the final budget approval at the end of March 2021.

The Fraser-Fort George Regional District Board was scheduled to receive the proposal on Friday, March 5, 2021. Staff will provide an update once received.

AGRICULTURAL PLASTICS PILOT PROJECT BUDGET

Clean Farms currently has grant funding from the Federal Government which can be used to finance up to 50% of the development and operational costs for agriculture-based recycling pilot programs throughout Canada. The waste characterization study noted above, has identified sufficient volumes of agricultural plastics to justify a pilot program in the RDBN, FFGRD and PRRD collectively. Clean farms has presented a budget for the RDBN's portion of the pilot program (attached) with a target collection rate of 30%. The summary is as follows:

Contributor	2021	2022	2023	Total
RDBN	\$29,214	\$28,431	\$31,961	\$89,606
Clean Farms	\$29,214	\$28,431	\$31,961	\$89,606
Annual Total	\$58,428	\$56,862	\$63,922	\$179,212

The above budgets are designed to be inclusive for all Clean Farms' collection, baling transport and management operations. This budget does not include land rental for collection points or construction costs. Typically, collection points are located at existing transfer stations (TS), farm supply outlets or other free and convenient venues. The program requires a separate bay for each material type at collection points, but no other requirements are specified except accessibility for transport contractors.

ADDITIONAL RDBN CONTRIBUTIONS

To ensure that the collection target is met, it is important that participating farmers have a convenient location to drop-off their bagged material. Clean Farms has suggested that the RDBN host 2 collection points at selected Transfer Stations (TBD), which is a popular model in other regions. There are however some additional expenses for the RDBN to consider IF we allow our current Transfer Stations to be collection points for the material. A stand-alone set of bays constructed with concrete lock-blocks would cost between \$3000 and \$5000 per site and would be consistent with the RDBN's current system for reuse and storage bays. Backing onto existing infrastructure and/or natural barriers could reduce this cost slightly, but Staff has not yet explored this in detail. Staff suggest at least 3 collection points throughout the RDBN so a total of \$15,000 would need to be allotted to establish collection points at the Smithers-Telkwa, Burns Lake, and Vanderhoof Transfer Stations. If the Board desires additional collection points, this would incur both construction cost and likely additional transportation costs if not located along the highway 16 corridor.

The additional labour requirements for field and office staff to manage the agricultural plastic sorting bays is not expected to be significant or disrupt current operations.

RDBN FUNDING

Pilot Program: The RDBN financial contribution is proposed to come from taxation and the cost for Year 1 (\$35,000) is included in the 2021 budget. Year 2 and 3's budgets will have to be included in the RDBN 2022 and 2023 operational budgets respectively.

Collection Points: Funding (\$15,000) to construct collection bays at three RDBN Transfer Stations can come from taxation or Gas Tax and has not yet been budgeted

CONCLUSION

The agricultural plastics recycling pilot project proposed by Clean Farms has an achievable collection target of 30-40% in the 3-year timeframe. Although the marketing model is not ideal (long-distance transport), the project has the potential to identify sustainable partnerships, growth possibilities and develop local markets. Diverting agricultural plastics from our landfills and reducing the amount of private burning of this material is in-line with the RDBN's Solid Waste Management Plan's waste reduction principles and this pilot project is a great opportunity to support this.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read "Alex Eriksen".

Alex Eriksen
Director of Environmental Services

Attachments:

1. Clean Farms Programming and Budget Proposal; Agricultural Plastics Recycling

Programming and Budget Proposal

Agricultural Plastics Recycling

Pilot programs in the Regional District of Bulkley-Nechako, British Columbia

February 2021

Executive Summary

Cleanfarms, with funding from the Canadian Agricultural Strategic Priorities Program (CASPP), is inviting RDBN along with 2 other neighbouring Regional Districts, to participate in a three-year pilot program for the collection and recycling of targeted agricultural plastics used in dairy and livestock production. To pursue this regional approach to ag plastics recycling, Cleanfarms is seeking a 50% cost sharing arrangement RDBN for a total of up to \$96,500 over 3 years.

The materials targeted by the collection program will be polypropylene (PP) baler twine, linear low-density polyethylene (LLDPE) bale wrap, and low-density polyethylene (LDPE) silage film and bunker cover.

The main objectives of the pilot are to:

- 1) Develop and test collection logistics and demonstrate proof of concept for a future province-wide program,
- 2) Understand the costs associated with delivering a collection program,
- 3) Work with end markets to develop viable, long-term recycling outlets for the target materials.

The pilot logistics will be modelled after past pilot programs that have proven to be successful. Cleanfarms and RDBN will work together to establish two suitable collection locations where materials can be dropped off by farmers. The program will operate as follows:

- Collection bags and communications material will be distributed to farmers by participating collection sites;
- Farmers will use the collection bags to collect the target materials on-farm;
- Farmers will drop off the full bags of separated materials at the collection sites;
- Cleanfarms will arrange for periodic collection of bagged materials from each site by a paid contractor where the material will be sent for baling;
- When enough material is consolidated, Cleanfarms will coordinate transportation to processing and end market facilities.

Ongoing dialogue and feedback from RDBN staff will allow for pilot-testing different collection options if necessary.

Cleanfarms has developed and enclosed a budget for running pilot projects for twine, bale wrap and silage bags/bunker covers over the next 3 years in RDBN. Material estimates in the budget are from a waste characterization study conducted between October and December 2020, and a summary of that report has been included with this proposal. The budget proposed is based on anticipated collection rates, and direct program and non-program costs.

The proposed budget outlines a scenario starting with 30% collection of material in 2021 with the collection rate increases by 5% each year. For a 3-year program the total costs are estimated at \$193,003.

Summary total: program options	3-year total	RDBN 50%	RDBN av. \$/yr
30% collection rate	\$193,003	\$96,501	\$32,167

Introduction

In 2020, Cleanfarms – a non-profit, industry-led producer responsibility organization operating collection and recycling programs for agricultural plastics and packaging across Canada – announced a multi-year federal project, *Building a Zero-Plastic-Waste Strategy for Agriculture*, which aims to strengthen the agricultural industry’s approach to managing plastic waste. The project is in partnership with Agriculture and Agri-Food Canada (AAFC) through their Canadian Agricultural Strategic Priorities Program (CASPP). One component of this federal project is to develop pilot projects for plastics recycling in ag intensive regions of Canada. Pilot projects demonstrate proof of concept for on-going program development, determine what collection and processing options are currently available and costs to run a program, and help to develop end markets for agricultural plastics recycling.

Cleanfarms approached the Regional District of Bulkley-Nechako in the fall of 2020 to see if there was interest for the RD to participate in the first pilot programs for BC. Along with the Regional District of Fraser-Fort George and Peace River Regional District, the inclusion of RDBN allows for a regional approach to be tested, and potentially expanded to other regions of BC. Further, participation provides the farmers of RDBN with access to a management option for twine, bale wrap and silage bags/bunker covers. These materials are the focus of the Cleanfarms CASPP project and have been identified as challenging materials for farmers in the Regional District of Bulkley-Nechako to manage. Currently these products are landfilled or burned on-farm at end-of-life.

Program Objectives

There are three main objectives for the pilot program:

- 1) To develop and test collection logistics and demonstrate proof of concept for a future province-wide program.

The collection of agricultural plastics presents unique challenges that vary geographically. A small-scale pilot program will help to identify gaps in the collection network, availability of contractors, and willingness of farmers to participate. A successful pilot program also demonstrates viability for a province wide EPR program in the future.

- 2) Understand the costs associated with delivering a collection program.

Permanent EPR programs are typically paid for through an environmental handling fee when a product is purchased. Understanding the costs to collect and recycle these products is important in determining the overall cost of operations, which vary by geography and target material.

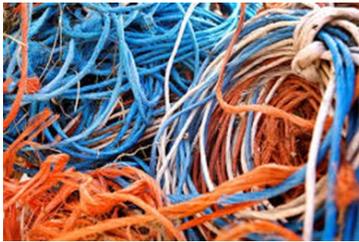
- 3) Work with end markets to develop viable, long-term recycling outlets for the target materials.

In order to develop new end markets (recyclers), materials are needed for testing. Materials collected through pilot programs are used by recycling facilities who require material for processing and manufacturing tests before large-scale collection begins.

Program Materials

This pilot program will target materials used primarily in the dairy and livestock sector, such as plastic baler twine, bale wrap, and silage bags and bunker covers.

Twine – Baler twine is made of polypropylene (PP) and is used due to its high tensile strength for baling hay and forage materials.



Bale Wrap – Bale wrap is made from linear low-density polyethylene (LLDPE) and is used, often in multiple layers, to contain bales after harvest.



Silage Bags and Bunker Covers – Silage bags and bunker covers are made of low-density polyethylene (LDPE) and used to keep large quantities of feed safe from the elements.



While these materials are often used together on farm, they will be collected separately because they all have a different plastic material composition. Part of the Cleanfarms pilot model is communicating the importance of material separation and minimizing contamination in the material collected.

Program Model

The pilot program will be developed around three main activities; on-farm preparation, collection and consolidation, and delivery to end markets (recyclers). In order to ensure that the materials can be recycled, the goal is to ensure the material remains relatively clean and free from excessive contamination and that each material is kept separate from other materials.

On-farm Preparation

Material separation starts on-farm and continues through to the collection sites and end markets. To help facilitate material separation, the use of collection bags is proposed. The bags help with on-farm material management and help to better maintain material cleanliness for recycling markets.

Collection bags will be provided to participating farmers free of charge at the collection site. With the collection bag, farmers will also receive information about how to properly prepare the materials for recycling.

Farmers will be asked to keep materials separate (twine, bale wrap, and silage plastic in separate bags), and remove excessive contamination where possible. Bags can be tied shut when full and dropped off at the local collection site in the designated area.

Collection and Consolidation

Once the material is prepared on farm, farmers will be instructed to drop off full bags of material at the local collection site for temporary storage and consolidation before it is transferred to a facility for baling.

Collection Sites

The main criterion for a collection site is having the appropriate space for material accumulation and separation. Cleanfarms prefers that pilot projects are run at municipal/regional transfer sites because farmers are already familiar with bringing their materials to these locations. As a secondary option, Cleanfarms can look to host sites at alternate locations, such as ag retail stores. We will work with the Regional District to determine the best location and number of collection sites throughout the pilot project.

We ask that collection sites help distribute the collection bags to farmers and support proper site setup with signage (provided by Cleanfarms). There is no specific cost to hosting a collection site if there is sufficient space for material to be kept sorted. The aim is that the collection site is self-contained – farmers bring their separated material to the site and drop the material off at the designated area that is marked with signage.

There does not need to be overhead coverage for the material at a collection site. The material can sit outside until collection occurs. The collection bags are sufficient to be outside for up to 6 months. Therefore, there will be a minimum of two collections per year, however more can be scheduled if material is returned and accumulates at a faster rate. Further, if the collection site

would prefer to have targeted material drop-off days/weeks, this can also be accommodated and built into the communications plan.

Consolidation, Transportation and Baling

As material is accumulated at the collection sites, Cleanfarms will arrange periodically as needed (no less than once every 6 months) to transport the bags of material to a facility for further consolidation and baling. Once material is baled and a full truckload (20 tonnes) has been accumulated, bales of material are transported to a recycler.

To develop pilot programs into an on-going program, the logistics and costs of baling, transportation and consolidation services need to be developed and accounted for. The pilot phase allows for testing and adjustments. This includes adjustments to working expectations with service providers and contractors so that we arrive at reasonable and efficient costs for working with ag materials and maintaining a program. Baling, transportation, and consolidation cost updates and changes will be disclosed in the proposed quarterly reports.

Cleanfarms acts as the organizing body to coordinate these services, and we aim to work with local service providers as much as possible. Cleanfarms has estimated transportation costs at \$200/MT to be conservative. The figures used in the budget currently are best estimates based on discussions with contractors and our experience with developing pilot projects in other western provinces. Budget outcomes are sensitive to changes in transportation and baling costs. Cleanfarms is currently in discussion with two service providers in Northern BC to determine on-going cost estimates. If the Regional District is able to provide any of these services, Cleanfarms can also contract the District to be the service provider. Based on the service provider decision, a material consolidation point will be established. Cleanfarms will manage the logistics and adjust toward efficiencies.

Material Collection Rates

Based on the waste characterization study commissioned for the region we have updated the collection rate expectations for materials. Typically, we want to phase up anticipated collection rates over time to remain within budget considerations. These rates can be adjusted throughout the pilot phase as desired and based on feedback data from the program. We have started with a target collection rate of 30%. After three years if a permanent, funded program is established we would seek to increase these numbers to collect as much material as possible. During this pilot phase however, we want to be able to test and change strategies as needed to build the most effective program from both a cost and user standpoint.

Communications and Administration

Cleanfarms has developed communications materials and plans for pilot operations and will supply all materials needed. The budget line items under "Communications" include the costs for design, printing and distribution of physical communications tools (site signage and information cards to distribute) and outreach as needed (earned or paid media). Cleanfarms will seek feedback from the RD about how best to reach ratepayers, as often there are local preferences and expectations for communications.

Cleanfarms has factored in administration costs for our services. As the operator for the collection program, we expect to provide the administrative support necessary for operations such as responding to program questions, maintaining data, reporting and other non-direct program activities.

Our goal is that this program does not place a large additional workload onto RDBN staff. Cleanfarms will organize logistics, materials, and information for the pilots. RDBN's involvement in pilot operations is to help communicate the program to ratepayers and facilitate the drop-off of material on site. The expectation is that the RD is not required to spend significant time or resources managing the pilot program. If, however, the RD anticipates incurring additional costs we are happy to develop the budget further to make sure it includes the relevant supports.

End Markets

A primary goal of the pilot project and for Cleanfarms is to develop and contribute to stable end markets for agricultural plastics. Cleanfarms' main priority is that all material collected through programs get recycled and used in other products.

Twine collected from the program will be sent to a facility for recycling in Minnesota. Twine is a high-value, revenue-positive material which will help to offset some of the costs of the pilot.

Currently only one North American market (Quebec) exists for bale wrap. Cleanfarms is exploring opportunities for bale wrap recycling in western Canada and the USA.

Silage film and bunker cover will be shipped to a recycler in Arkansas for recycling, however a facility in Alberta is currently testing silage film and may be a viable market in the near future.

In the event that any material cannot be accepted for recycling, Cleanfarms' next priority is that the material goes to energy recovery through incineration. We do not want any recyclable material collected as part of the program to end up in landfill. The facility that Cleanfarms uses for energy recovery at this time is located in Elie, Manitoba, however more proximate options will be explored as materials are collected. Only non-target, excessively contaminated or mixed materials that cannot be recycled or sent for energy recovery will be sent to landfill.

Project Funding and Invoicing

Cleanfarms is seeking a 50% cost sharing agreement with RDBN to run the pilots on a three-year basis. The same agreement has been proposed to two other districts in Northern BC – the Regional District of Fraser-Fort George and Peace River Regional District. It is expected that cost efficiencies will develop and be shared because of this regional approach to ag plastics recycling (for example, in transporting materials). However, Cleanfarms will maintain separate agreements with each Regional District to ensure there are no cross-payments for the materials collected during the pilot. In other words, the programs will benefit from service efficiencies, but not be held responsible for offsetting costs generated through another Regional District's program. Cleanfarms will contribute the other 50% of funds to the project, with supportive funding coming from the CASPP grant.

It is recommended that short, quarterly updates, corresponding with a proposed quarterly invoicing schedule, be provided so that both the Regional District and Cleanfarms remain aware

of program successes, challenges, and costs. Reports would include the tonnage of materials collected and on-going costs estimates so that adjustments can be made. For example, it may become apparent that the program is under or over budget due to lower or higher than anticipated collection volumes and adjustments to the collection site locations may be required, or that a targeted communication strategy may be needed to address material contamination issues. These are some examples of pivots we have seen at the outset of other pilot programs. The first year of any pilot program always provides important data for making adjustments.

Conclusion

In summary, the proposed pilot projects for the collection of twine, bale wrap, and silage bags/bunker covers in the Regional District of Bulkley-Nechako will provide valuable information and on-the-ground experience required in developing sustainable, long-term collection programs. In addition to the objectives above, RDBN will benefit from participating in the pilot through reducing the amount of plastic being sent to landfill, reducing the open burning of plastics on farm and reducing the amount of agricultural plastics that end up as litter in the environment and in waterways.

Partnering with several Regional Districts will provide a good foundation to involve more farmers, collect more material, and test cost-efficiencies and economies of scale in regional program operations. Upon approval, we would anticipate a start date in early 2021. A successful program model will allow for eventual replication and implementation in other BC regions that express interest, with the overall goal being to transition from a pilot model to an on-going, permanent program for the collection of these materials.

Appendix A: Budget Proposal

Cost assumptions

Year	2021	2022	2023	
Communications				
Design (updates required to existing materials)	\$5,000	\$1,000	\$1,000	Outdoor sign design/contamination education, etc.
Printing costs (ie. Postcards, brochures)	\$2,500	\$1,000	\$1,000	Outdoor signs, other operational comms materials/handouts
Total communications	\$7,500	\$2,000	\$2,000	\$11,500

Collection site related

Year	2021	2022	2023	
Assumptions - sites, collection volumes				
RDBN sites	2	2	2	
Bale and silage wrap used (MT)	198	198	198	From waste characterization
Twine used (MT)	17	17	17	From waste characterization
Bale wrap collection rate	30%	35%	40%	estimate
Twine collection rate	20%	25%	30%	estimate
Bale wrap collected (MT)	59	69	79	
Twine collected (MT)	3	4	5	
Total collection (MT)	63	74	84	221

Assumptions - costs & compensation

Baling (per ton) - all materials	\$150	\$150	\$150	Based on hired contractor
Consolidation at baling site - all materials	\$150	\$150	\$150	Based on hired contractor
Collection bags - twine and bale wrap	\$5,526	\$6,472	\$7,418	Approx \$2.20 each, delivered (30 kg/bag + 20% bag loss)
Transport to end market (per tonne)	\$200	\$200	\$200	Freight company

Revenue from sale of Twine (\$/MT)	\$200	\$200	\$200
Revenue from sale of bale/silage film (\$/MT)	\$0	\$0	\$0
Cost to recycle bale/silage film (\$/MT)	\$0	\$0	\$0
Calculations			

Baling costs	\$9,420	\$11,033	\$12,645
Material consolidation	\$9,420	\$11,033	\$12,645
Transport to end market	\$12,560	\$14,710	\$16,860
Collection bags	\$5,526	\$6,472	\$7,418
Contingency	\$7,500	\$5,000	\$5,000

Total Site collection costs	\$44,426	\$48,247	\$54,568	\$147,242
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Administration

Pilot program operator (25% of expenses; staff time, noi	\$11,107	\$12,062	\$13,642
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Total administration	\$11,107	\$12,062	\$13,642	\$36,811
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Expenses subtotal	\$63,033	\$62,309	\$70,211	\$195,553
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Revenue from sale of material

Twine revenue	\$680	\$850	\$1,020
Bale wrap/silage film revenue	\$0	\$0	\$0

Total revenue	\$680	\$850	\$1,020	\$2,550
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Grand total	\$62,353	\$61,459	\$69,191	\$193,003
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Cost contribution RDBN	\$31,176.50	\$30,729.63	\$34,595.25	\$96,501.38
Cost contribution Cleanfarms	\$31,176.50	\$30,729.63	\$34,595.25	\$96,501.38

Waste Characterization Summary for the Regional District of Bulkley-Nechako

Study Objectives

The objective of this study was to understand the amounts of plastics used by farmers in the Regional District of Bulkley-Nechako, Fraser-Fort George and Peace River Regional District. The study focused on twine, net wrap, and bale wrap/silage plastics, which are primarily used in livestock production. Following is a summary of the findings relevant to the Regional District of Bulkley-Nechako.

Methodology

During this study, researchers reached out to farmers and ranchers, primarily by phone, to ask about their plastic usage on-farm. Throughout Northern British Columbia, over 48 farming operators, regional district representatives, and supplier outlets provided information. The information obtained helped to capture usage patterns in the region. After determining the average on-farm use of plastics, regional estimates were extrapolated by using 2016 farming census data.

The method of wrapping large round bales directly impacts the amount of plastic used. A livestock association in the Vanderhoof area is speaking to farmers to quantify the plastic requirements for wrapping¹. The weight of plastic required for wrapping a large, round bale in the area is found to be:

- Twine: ¼ pound
- Net Wrap: ½ pound
- Bale Wrap Tubes: 2 pounds
- Bale Wrap Individually: 4 pounds

The method of wrapping is not mutually exclusive since some ranchers mentioned using both plastic twine and individual plastic bale wrap on their large round bales. An average has been taken between tubes and individually wrapped bales for the purposes of estimation.

¹ Personal Communication, Alax Kulchar, November 10, 2020



For cattle operations, according to the ranchers interviewed, the average number of Large Round Bales required per head of cattle is just over 6 (6.2) large round bales per year. The range mentioned is from 4.5 to 10 bales per head per year of large round bales. A high, low and average estimate has therefore been provided.

Results

The Bulkley-Nechako and Stikine region is home to 11% of the beef cows in British Columbia. Of a total 56,113 cattle and calves, 23,428 are beef cows, and 977 are dairy cows². This region is estimated to use the below amounts of plastic for 23,428 beef cows if all bales were wrapped using only the single method below. In addition to beef cows and calves, bales are also used to feed dairy cows, horses, sheep, goats and bison in Northern BC.

Material	Average Use (MT)	Low Use (MT)	High Use (MT)
Twine	16.47	11.96	26.57
Net Wrap	32.94	23.91	53.13
Bale wrap ¹	197.66	143.46	318.80

¹ Bale wrap calculations average between estimate for tubes and individually wrapped bales.

Over the course of the study, researchers also identified recurring themes that would come up in conversation. These themes include: some current practice of burning plastics on-farm; noticeable growth of plastic usage over time; a desire for convenient recycling solutions; as well as desire to use less plastic in their operation. In addition, plastic use is noted to increase with seasonal wetness.

² Ministry of Agriculture, Agriculture in Brief: Nechako (2016). https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/agriculture-and-seafood/statistics/census/census-2016/aginbrief_2016_nechako_region.pdf.



**REGIONAL DISTRICT OF BULKLEY-NECHAKO
MEMORANDUM**

To: Chairperson Fisher and the Waste Management Committee
 From: Alex Eriksen, Director of Environmental Services
 Date: March 11, 2021
 Subject: Committee Roles & Responsibilities - Clarification

RECOMMENDATION

(All/Directors/Majority)

Receive

OBJECTIVE

To clarify the differences in membership and responsibilities of the two RDBN Waste Related Committees.

REGIONAL SOLID WASTE ADVISORY COMMITTEE

“The purpose of the Committee is to monitor and make recommendations to the Waste Management Committee on the implementation of the Solid Waste Management Plan (SWMP).” Advertising to solicit membership for this committee will commence later in March 2021.

Membership: 1 Waste Management Committee Chairperson
 2 RDBN municipality representatives,
 2 RDBN electoral area representatives,
 3 RDBN First Nations representatives,
 8 Stakeholders

WASTE MANAGEMENT COMMITTEE

“The purpose of the Committee is to oversee and make recommendations to the Board regarding solid waste management matters”

Membership: 1 Chairperson (RDBN Board Member)
 5 Directors (appointed by the Chair)
 3 non-voting youth (selected annually)

YOUTH PARTICIPATION

To support youth engagement and contributions to the future of the region, it is important that both the Waste Management and Regional Solid Waste Advisory Committees include interested youth throughout the region. To obtain the three (3) non-voting youth for the RDBN's Waste Management Committee, the RDBN will advertise within the region each September for youth participation during the school calendar year.

Respectfully submitted,

Alex Eriksen
 Director of Environmental Services



**REGIONAL DISTRICT OF BULKLEY-NECHAKO
MEMORANDUM**

To: Chairperson Fisher and the Waste Management Committee
 From: Alex Eriksen, Director of Environmental Services
 Date: March 11, 2021
 Subject: Waste Characterization and Recycling Feedstock Inventory Scope - Update

RECOMMENDATION

(All/Directors/Majority)

1. That the Committee receive this update.

BACKGROUND

In July 2020, the Board of Directors declined the proposal for a region-wide desktop Waste Characterization and Recycling Feedstock Inventory in favour of an in-depth physical investigation to be conducted.

UPDATE

Staff is preparing a Request for Proposals (RFP) for the above-mentioned physical Waste Study with the intent of maximizing the amount of useful information for potential local processing and recycling initiatives. The proposed scope of work of characterization will include the following categories for quantification:

Old Corrugated Cardboard (OCC)	Waxed OCC
Mixed paper and boxboard	Deposit Containers
Single source plastics - PET, HDPE, PVC, LDPE, PP, PS	Batteries
Electronics	Small Appliances
Mattresses	Textiles
Bound Books	Organics (Kitchen/Yard trimmings)
Agricultural Plastics - Twine, bale wrap, silage	Lumber Wrap
Wood - Clean, treated, furniture, brush	Glass
Asphalt roofing shingles	Asphalt Pavement
Gypsum wall board (drywall)	Concrete and Rubble
Tires	Scrap Metal

The RFP will be released in March 2021.

Respectfully submitted,

A handwritten signature in blue ink that reads "Alex Eriksen". The signature is fluid and cursive, with the first name "Alex" and the last name "Eriksen" clearly distinguishable.

Alex Eriksen
Director of Environmental Services

Respectfully submitted,

A handwritten signature in blue ink that reads "Alex Eriksen". The signature is fluid and cursive, with the first name "Alex" and last name "Eriksen" clearly distinguishable.

Alex Eriksen
Director of Environmental Services

Attachments:

1. Cost Recovery Study Report

Cost Recovery Study Report



PRESENTED TO
Regional District of Bulkley-Nechako

AUGUST 7, 2018
ISSUED FOR REVIEW
FILE: 704-SWM.PLAN03065-01

This "Issued for Review" document is provided solely for the purpose of client review and presents our interim findings and recommendations to date. Our usable findings and recommendations are provided only through an "Issued for Use" document, which will be issued subsequent to this review. Final design should not be undertaken based on the interim recommendations made herein. Once our report is issued for use, the "Issued for Review" document should be either returned to Tetra Tech Canada Inc. (Tetra Tech) or destroyed.

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APPENDIX SECTIONS

APPENDICES

Appendix A	Tetra Tech's Services Agreement and Limitations on the Use of this Document
Appendix B	Conceptual Level Capital and Operations Costs by Facility
Appendix C	Summary of anticipated Costs and Revenues by Facility and Scenario

LIMITATIONS OF REPORT

This report and its contents are intended for the sole use of the Regional District of Bulkley Nechako (RDBN) and their agents. Tetra Tech Canada Inc. (Tetra Tech) does not accept any responsibility for the accuracy of any of the data, the analysis, or the recommendations contained or referenced in the report when the report is used or relied upon by any Party other than RDBN, or for any Project other than the proposed development at the subject site. Any such unauthorized use of this report is at the sole risk of the user. Use of this document is subject to the Limitations on the Use of this Document attached in the Appendix or Contractual Terms and Conditions executed by both parties.

1.0 INTRODUCTION

Tetra Tech Canada Inc. (Tetra Tech) in partnership with MWA Environmental Consultants Ltd. and Carey McIver & Associates Ltd. has recently completed a review and update of the Regional District of Bulkley-Nechako's (RDBN) Solid Waste Management Plan (SWMP). The RDBN prepared their first Plan in 1996 and the focus for the last twenty years has been on improving residuals management by closing old small landfills and dump sites and replacing them with a transfer station network and two sub-regional engineered landfills. The focus of the current plan review and update has been to increase waste diversion by providing improved recycling services in the short term and organics diversion services in the long term.

The costs associated with implementing improved recycling and organics diversion services as well as regulatory requirements to fund closure and post-closure liabilities which require an increase in either taxes, user fees or both. The current solid waste management system in the RDBN is primarily funded through taxation rather than user fees, which provides no financial incentive for generators to reduce, reuse and recycle. Consequently, a key component of the 2018 SWMP is the need to address options for cost recovery that both support the financial sustainability of the RDBN's municipal solid waste management system and add incentives for generators to use improved recycling and organics management services to divert waste from disposal.

As the cost of sustainable waste management increases, most northern regional districts have adopted bylaws to apply user fees to varying degrees to increase this funding source and balance the ratio of taxation versus user fees. Assessing the feasibility of implementing user fees at all RDBN facilities may better support the solid waste management system, diversify revenue sources and support the RDBN's strategic objectives. This study assists the RDBN in determining reasonable methods of recovering costs and provides the inputs needed to choose a cost recovery model that will ensure the long-term viability of the solid waste management system.

1.1 Project Objectives

The key objectives of the study are to:

- Define the funding gap in the five-year financial plan including the operating and capital costs defined in the 2018 SWMP and required reserve funding;
- Review cost recovery models in similar regional districts and provide guidance on applicability to the RDBN;
- Define options for closing the funding gap;
- Provide summaries of projected revenue and conceptual costs of prioritized cost recovery options; and
- Provide information required to satisfy the RDBN Board that the 2018 SWMP can be funded through reasonable changes to the RDBN cost recovery model.

1.2 Overview and Structure of the Report

Section 2 of this report reviews the current cost recovery model as defined in the approved 2018-2022 Financial Plan, addresses the implications of the operating and capital expenditures contained in the draft SWMP as well as the required contributions to closure and post-closure reserve funds and then defines the funding gap over the 2018-2022 period. Section 3 provides cost recovery models used by six comparable regional districts and summarizes options that may be applicable to the RDBN. Section 4 provides three cost recovery scenarios specific to the RDBN and Section 5 provides a proposed implementation plan for the preferred scenario.

2.0 DEFINING THE FUNDING GAP

In British Columbia, municipalities and regional districts must annually adopt, by bylaw, a five-year financial plan which includes capital and operating expenditures. The current approved 2018-2022 Financial Plan is presented in Table 2-1.

Table 2-1: Existing Five Year Financial Plan (Approved in 2018)

	2018	2019	2020	2021	2022
REVENUE					
Taxation	\$3,144,752	\$3,383,962	\$3,428,064	\$3,008,737	\$3,011,903
Recycling	\$240,000	\$140,000	\$140,000	\$140,000	\$140,000
Tipping Fees	\$206,000	\$206,000	\$206,000	\$206,000	\$206,000
Transfer from Reserves	\$1,043,700	\$783,700	\$741,700	\$693,700	\$693,700
Prior Year's Surplus	\$1,171,798	\$ -	\$ -	\$ -	\$ -
Grants	\$390,395	\$390,395	\$390,395	\$390,395	\$390,395
Other	\$95,000	\$5,000	\$220,000	\$5,000	\$5,000
TOTAL OPERATING REVENUE	\$6,291,645	\$4,909,057	\$5,126,159	\$4,443,832	\$4,446,998
EXPENDITURES					
Operating Expenditures					
Administration	\$2,249,988	\$1,764,351	\$1,776,830	\$1,382,498	\$1,393,608
Transfer Station Ops	\$1,683,821	\$1,658,334	\$1,681,933	\$1,704,256	\$1,726,842
Landfill Ops	\$663,943	\$651,618	\$664,645	\$667,328	\$680,668
Recycling	\$525,959	\$417,944	\$417,944	\$417,944	\$417,944
Contribution to Reserves	\$239,233	\$159,233	\$159,233	\$169,233	\$169,233
Post-Closure	\$93,700	\$93,700	\$43,700	\$43,700	\$43,700
Closure	\$30,000	\$15,000	\$15,000	\$15,000	\$15,000
Total Annual Operating Expenditures	\$5,486,644	\$4,760,180	\$4,759,285	\$4,399,959	\$4,446,995
Existing Capital Expenditures					
Capital Expenditures	\$805,000	\$105,000	\$323,000	\$ -	\$ -
Total Annual Capital Expenditures	\$805,000	\$105,000	\$323,000	\$ -	\$ -
Balance	\$6,291,644	\$4,865,180	\$5,082,285	\$4,399,959	\$4,446,995

As indicated in Table 2-1, the solid waste management system in the RDBN is funded primarily through taxation. For 2018 property taxes account for roughly 50% of revenue, transfer from reserves account for 17%, the prior years surplus account for 19% of revenue, and tipping fees account for 3%. However, considering that transfer from reserves is taxation revenue saved from the last three years and prior years surplus is taxation revenue from previous years, revenue from taxation is 83% in 2018. In subsequent years, the plan assumes that the complete budget for each year will be spent and there will be no surplus to carry-forward. For these years property taxes will account for roughly 84% of revenue requirements.

2.1 Impact of the SWMP

Table 2-2 provides the costs associated with the strategies and actions identified in the 2018 SWMP with respect to their implications to the Board's approved Financial Plan for 2018-2022

Table 2-2: Proposed Changes to the Approved Five Year Financial Plan

	2018	2019	2020	2021	2022
PROPOSED Operating Expenditures					
REDUCE/REUSE/RECYCLE					
Increase Reduction and Reuse	\$ -	\$ -	\$ -	\$ -	\$ -
Expand Access to Residential Recycling	\$ (16,300)	\$ 26,100	\$ (3,800)	\$ 75,700	\$ 155,200
Increase ICI Sector Recycling	\$ 3,000	\$ 8,500	\$ 8,500	\$ 8,500	\$ 8,500
Increase Organics Diversion	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500
Expand Regional Education and Behaviour Change Programs	\$ (19,300)	\$ (27,100)	\$ (41,800)	\$ (41,800)	\$ (41,800)
RESIDUAL MANAGEMENT					
Continue facility operation and upgrades as needed.	\$ -	\$ 11,000	\$ 35,000	\$ 11,000	\$ 35,000
POLICIES AND BYLAWS					
Assess Cost Recovery Through User Fees	\$ 20,000				
STAFF					
Additional Staffing Costs (2 FTE)	\$ 10,100	\$ 130,000	\$ 130,000	\$ 130,000	\$ 130,000
PLAN MONITORING					
Waste Composition Study	\$ -	\$ -	\$ -	\$ 25,000	\$ -
5-year Effectiveness Review	\$ -	\$ -	\$ -	\$ -	\$ 10,000
Total Annual Proposed Operating Expenditures	\$ -	\$ 151,000	\$ 130,400	\$ 210,900	\$ 299,400
PROPOSED Capital Expenditures					
DIVERSION					
Expand Access to Residential Recycling (Capital)	\$ -	\$ 45,000	\$ 60,000	\$ 500,000	\$ 500,000
Increase Organics Diversion (Capital)	\$ -	\$ -	\$ -	\$ -	\$ -
DISPOSAL					
Continue Facility Operation and Upgrades (Capital)	\$ -	\$ -	\$ -	\$ -	\$ -
Total Annual Proposed Capital Expenditures	\$ -	\$ 45,000	\$ 60,000	\$ 500,000	\$ 500,000
Total Annual Proposed Expenditures	\$ -	\$ 196,000	\$ 190,400	\$ 710,900	\$ 799,400
TOTAL OPERATING EXPENDITURES	\$ 5,486,644	\$ 4,986,180	\$ 5,259,685	\$ 5,035,859	\$ 5,546,395
TOTAL CAPITAL EXPENDITURES	\$ 805,000	\$ 150,000	\$ 383,000	\$ 500,000	\$ 500,000
TOTAL ANNUAL EXPENDITURES	\$ 6,291,644	\$ 5,136,180	\$ 5,642,685	\$ 5,535,859	\$ 6,046,395
Operating Funding Required	\$ -	\$ 151,000	\$ 130,400	\$ 210,900	\$ 299,400
Capital Funding Required	\$ -	\$ 45,000	\$ 60,000	\$ 500,000	\$ 500,000
Reserve Funding Required		\$ 75,000	\$ 370,000	\$ 425,000	\$ 800,000

2.2 Auditor's Report

Under Section 167 of the Community Charter, each year regional districts (and municipalities) must present their Board (or Council) with the jurisdiction's financial statements for its acceptance by May 15 the following year. The auditors for the RDBN have prepared the financial statements for the calendar year 2017 and have audited the financial proceedings of the regional district. In their notes to the consolidated financial statements the auditors address unfunded liabilities for landfill closure and post-closure costs. In their opinion the RDBN has insufficient reserves to fund future closure and post-closure costs of both active and inactive landfill sites in the regional district. To quote from their notes "The liability expense of \$1,699,304 is unfunded as at December 31, 2017, the landfill closure and post closure reserve funds have a balance of \$95,250."

2.3 Funding Gap

RDBN financial services staff have reviewed the impact of the 2018 SWMP on the approved Financial Plan as well as the requirement from the auditors to increase funding to the landfill closure and post-closure reserves.

Table 2-3 illustrates the magnitude of the funding gap based on several assumptions. In 2018 the tax requisition was artificially low because of a very large surplus carried over from 2017. This projection assumes that the complete budget for each year will be spent and there will be no surplus to carry forward. Going forward, if there is a surplus to be carried forward from one year to the next, the Board will need to decide if these funds should be used to reduce next year's taxes or if they should be allocated to the landfill closure or post-closure reserve. This projected financial plan also recognizes that in 2020 the RDBN will pay off a large Environmental Services loan allowing for nearly \$500,000 to be allocated to capital expenses (or to reserves) for future years. In this case the projection allocates \$1,000,000 to build two recycling consolidation centres (at the Smithers Telkwa Transfer Station and Vanderhoof Transfer Station). Although some portion of this amount may be offset by grant funding this is not an assumption for the worst case scenario

Table 2-3: Projected Funding Gap (Worst Case Scenario)

	2018	2019	2020	2021	2022
Funding Gap	\$0	\$867,000	\$1,052,000	\$1,252,000	\$1,312,000

Based on this review, staff have concluded that the current Financial Plan can accommodate increases to operating and capital expenditures associated with the SWMP if taxes are increased. The impact of this funding gap on the tax requisition levy on each \$100,000 of residential assessment is forecasted in Table 2-4.

Table 2-4: Projected Impact on Tax Requisition (per \$100,000 of Residential Assessed Value)

	2018	2019	2020	2021	2022
Tax Levy	\$54.70	\$69.80	\$73.02	\$76.50	\$76.50

Under this projection taxes are increased to approximately \$77.50 over period of 10 years with the greatest increase happening 2019-2020. This represents a roughly \$20 per \$100,000 in assessed value per household or \$50 per year for the average assessment of \$250,000. Residents with a higher property values will be faced with an even greater increase. This can be partially offset in 2020 if grant funds are available for the significant capital projects planned. However, even without the SWMP being implemented taxes would still be required to be increased to approximately \$72.50 over the next two years.

3.0 OPTIONS TO CLOSE THE FUNDING GAP

This section provides an overview of cost recovery models used by six comparable regional districts and summarizes options that may be applicable to the RDBN.

3.1 Neighbouring Regional Districts

The RDBN has much in common with its neighbouring regional districts. With a total population of 37,896 people (2016 Census) and a land area of 73,361 square kilometres (km²), the RDBN has a population density of only 0.5 persons per km². The 2016 disposal rate for the RDBN was 600 kilograms per capita.

Prior to the advent of solid waste management planning in the 1990's, most rural solid waste disposal systems consisted of numerous small landfills and dumpsites adjacent to towns and villages. However, in accordance with their respective SWMPs, most rural regional districts have transitioned from non-engineered landfills to a system of transfer stations and engineered landfills.



This was the case for the RDBN where 21 old landfills have been closed and replaced with a system of seven regional transfer stations, two sub-regional engineered landfills, one small local landfill, and one First Nations community transfer station.

This transition has been expensive for rural regional districts and like the RDBN, due to low economies of scale, most rural regional districts have had to depend on taxation rather than tipping fees as a stable revenue source.

However, solid waste systems funded entirely through taxation do not provide a financial incentive for waste reduction and are unfair to those residents that do reduce, reuse and recycle. Consequently, as rural regional districts have moved beyond improvements to residual waste management

systems and switched focus to providing waste diversion services, user fees have become more prevalent.

This has been the case for the regional districts of Cariboo, East Kootenay, Peace River, Fraser-Fort George, Thompson-Nicola and Kitimat-Stikine. These regional districts have comparable populations, population density, area and number and type of facilities. The following sections discuss each of these regional districts and provides information on cost recovery models (proportion of costs recovered through taxes, user fees or other methods) and methods (how taxes and fees are applied and collected).

3.1.1 Cariboo Regional District

The Cariboo Regional District (CRD) flanks the southern border of the RDBN. With a total population of 61,988 people (2016 Census), and a land area of 80,610 km², the CRD has a population density of 0.8 persons per km². Historically there were 3 urban landfills and 28 rural landfills located in the CRD. The current residual waste management system in the CRD consists of 14 landfills and 18 transfer stations, with both attended and unattended sites. In 2018 the budgeted system cost is \$8.5 million of which 50% is recovered by taxation, 8% by user fees and 15% from other sources such as grants, reserves and prior year surplus. The 2018 tipping fee for refuse is \$70 per tonne. Revenue from tipping fees for refuse is budgeted at roughly \$700,000 annually. The 2016 disposal rate for the CRD was 748 kilograms per capita.

The CRD started to introduce user fees in accordance with their 2013 SWMP. Although the planning process recognized that a tax-based fee structure does not encourage waste reduction, both the SWMP Advisory Committee and the public were concerned that user fees would result in increased illegal dumping. Consequently, the CRD decided to move slowly towards user fees, starting at attended scaled sites and then expanding to more attended sites once the infrastructure was in place to collect fees.

To keep administration costs low, user fees were introduced for commercial loads only since commercial haulers had more waste per load and could be charge by account. The CRD also recognized that commercial haulers won't dump in the bush. Weight based fees were introduced at scaled facilities and volume-based fees at non-scaled attended sites.

Figure 3-1 illustrates the current commercial user fees for the Central Cariboo Landfill.

CENTRAL CARIBOO LANDFILL - COMMERCIAL USER FEES
EFFECTIVE JUNE 8, 2018

WASTE CATEGORY	TIPPING FEES	TIPPING FEES
<u>Municipal Solid Waste</u>	<u>Secured, Non-contaminated Loads</u>	<u>Contaminated Loads</u>
Commercial mixed waste	\$70.00 per tonne	\$200.00 per tonne
Clean wood waste	\$70.00 per tonne, \$23.00 minimum charge	\$200.00 per tonne
Demolition/Construction Waste (DLC)	\$200.00 per tonne, \$23.00 minimum charge	\$250.00 per tonne

Figure 3-1: Cariboo Regional Landfill User Fees

To encourage waste diversion, the bylaw distinguishes between sorted, non-contaminated loads and un-sorted contaminated loads. Contamination generally refers to recyclable materials such as cardboard and scrap metal that could easily be recycled.

When fees for household waste were first introduced there was no charge for loads of 450 kilograms or less. This meant the large loads, which were often coming from commercial self-haul professing to be residential did have to

SCHEDULE "B"
VOLUME BASED COMMERCIAL TIPPING FEES FOR *150 MILE HOUSE, FROST CREEK AND WILDWOOD
TRANSFER STATIONS

Depositing waste in an undesignated location		Double user fee	
Depositing a contaminated load of wood waste (>10% non-wood)		Triple user fee	
Pick-up Trucks ($\leq 2m^3$)		Wood¹	DLC²
Small Box pick-up (< 8 ft. box)			
Full load or portion thereof		\$17.00	\$58.00
With extended sides		\$24.00	\$116.00
Full sized pick-up (8 ft. box)			
Full load or portion thereof		\$22.00	\$75.00
With extended sides		\$44.00	\$150.00
Utility Trailers			
		Wood¹	DLC³
Up to 8 ft. long ($\leq 2m^3$)			
Full load or portion thereof		\$22.00	\$75.00
With extended sides		\$44.00	\$150.00
Up to 12 ft. long			
Full load or portion thereof		\$34.00	N/A
With extended sides		\$68.00	N/A
Up to 16 ft. long			
Full load or portion thereof		\$46.00	N/A
With extended sides		\$92.00	N/A

Figure 3-2: Volume-Based Tipping Fees in the Cariboo Regional District

In the past they had 24/7 access to old landfill sites and don't want the inconvenience of having to slow down and pay at attended rural landfills or transfer sites. The fear of increased illegal dumping is also another reason why some residents don't support user fees.

pay a fee. Over time, the CRD has reduced the no charge level to 200 kilograms (in June 2018) and by January 2019 the no charge limit will be 100 kg or less.

The CRD also charges volume-based fees for commercial waste at several attended transfer stations. Residential waste is not charged at these sites. Figure 3-2 provides an example of volume-based tipping fees for commercial users at attended sites.

Public response has been mixed regarding the introduction of user fees for residential waste. There is support for residential user fees in urban areas such as Williams Lake and Quesnel with curbside garbage collection, however rural residents who self-haul their waste don't want user fees.

With respect to “lessons learned” staff interviewed from the CRD recommend that user fees work best if they are weight-based and if they go hand in and with improved access to recycling services. So far, their phased approach has been successful. The only challenge left is unattended rural sites.

3.1.2 Regional District of East Kootenay

Although the Regional District of East Kootenay (RDEK) is not adjacent to the RDBN, their cost recovery policy can provide some insights. With a total population of 60,439 people (2016 Census), and a land area of 27,542 km², the RDEK has a population density of 2.2 persons per km². The current residual waste management system in the RDEK consists of 2 landfills, 5 urban transfer stations and 15 rural transfer stations, including both attended and unattended sites. In 2018 the budgeted system cost is \$8.7 million of which 82% is recovered by taxation, 15% by user fees and 3% from other sources such as grants, reserves and prior year surplus. There is no charge for commercial and domestic refuse excluding controlled waste which is accepted for varying fees. However, to promote waste diversion, the 2018 tipping fee for loads containing banned recyclable materials from any category is \$100 per tonne. Revenue from tipping fees is budgeted at roughly \$990,000 annually. The 2016 disposal rate for the RDEK was 561 kilograms per capita.

3.1.3 Peace River Regional District

The Peace River Regional District (PRRD) flanks the northern border of the RDBN. With a total population of 62,942 people (2016 Census), and a land area of 117,388 km², the PRRD has a population density of 0.5 persons per km². The current residual waste management system in the CRD consists of 3 regional landfills, 16 attended transfer stations and 13 unattended transfers stations. In 2018 the budgeted system cost is \$14.7 million of which 38% is recovered by taxation, 26% by user fees and 36% from other sources such as grants, reserves and prior year surplus. The 2018 tipping fee for refuse is \$55 per tonne. Revenue from tipping fees for refuse is budgeted at roughly \$3.9 million annually. The 2016 disposal rate for the PRRD was 685 kilograms per capita.

REGULAR WASTE		CONTROLLED WASTE		RESTRICTED WASTE	
TYPE	FEE \$3.75 Minimum Charge	TYPE	FEE \$10.00 Minimum Charge	TYPE	FEE \$22.00 Minimum Charge
SORTED: HOUSEHOLD & COMMERCIAL	\$55/tonne	HOUSEHOLD APPLIANCES	\$55/tonne	SPECIFIED RISK MATERIALS	\$125/tonne
METAL		CONCRETE (> 15 cm piece size, no soil or gravel)		ANIMAL CARCASSES listed in Wildlife & Livestock Acts	
WOOD		Clean UNCRUSHED STEEL & PLASTIC DRUMS with lids removed	\$55/tonne plus \$3.50/drum	LOADS CONTAINING >25% OLD CORRUGATED CARDBOARD	\$250/tonne
Domestic ANIMAL CARCASSES not listed in Wildlife & Livestock Acts		TIRES (MEDIUM - No Rim)	\$55/tonne plus \$10/tire	LEAD ACID BATTERIES	\$55/tonne
5 garbage bags or less (Min. fee N/A)	\$0.80 per bag	TIRES (INDUSTRIAL/HEAVY DUTY - No Rim)	\$55/tonne plus \$36/tire	ASBESTOS	\$150/tonne
TIRES (Cars, LT, SUV - No Rim)	\$55/tonne plus \$6/tire	MIXED DEMOLITION, LAND CLEARING & CONSTRUCTION STRIPPED VEHICLES	\$110/tonne	ALL OTHER RESTRICTED WASTE	\$150/tonne
UNSORTED REGULAR WASTE	\$110/tonne	UNSTRIPPED VEHICLES	\$110/tonne plus \$170/vehicle		
		CLEAN SOILS/CONCRETE RUBBLE (piece size <15 cm)	NO CHARGE		
		UNSORTED CONTROLLED WASTE	\$110/tonne		

PLEASE ASK SCALE ATTENDANT
FOR ADDITIONAL INFORMATION

QUESTIONS?

PLEASE CALL:
250-784-3200 OR 1-800-670-7773

UNSECURED LOADS ARE CHARGED DOUBLE!!

Figure 3-3: Weight-Based Fees in the Peace River Regional District

User fees have been in place in the PRRD since 1998 at attended transfer stations and landfills. The PRRD SWMP had supported user fees wherever possible to encourage waste reduction. User fees are seen as a fair approach to pay for services. Fees are weight-based if scales are present and volume-based if not. The introduction of user fees has also coincided with the improved services. Figure 3-3 provides the current weight-based user fees in the PRRD and Figure 3-3 provides the current volume base fees.

According to PRRD staff, the public have been supportive of user fees if they are combined with additional services. Although rural residents like the improved services, they are still unhappy about fees. Concerns about illegal dumping were addressed by providing free clean up coupons. In response to concerns from commercial haulers, staff are considering raising the rates for unsorted commercial loads since the current double fee of \$110 per tonne does not seem to be enough of a penalty to encourage waste diversion.

ACCEPTED WASTE		FEE	
TYPE		Minimum Fees Apply	
SORTED HOUSEHOLD MATERIALS	8 bags or less	\$0.80 /bag	
	More than 8 bags	\$6.50 /m ³	
	Passenger car - bagged & non-bagged waste	\$5.00	
	Station wagons/Mini-vans/SUVs - bagged and non-bagged waste	\$7.00	
	Vans/mid- and full-size pick-ups (short box)/trailers with capacity of 1.5 m ³ or less	\$9.50	
	Vans/mid- and full-size pick-ups (short box)/trailers with capacity of 1.5 m ³ or less with stakesides or overloaded	\$14.50	
	Full-size pick-ups (long box)/trailers with capacity greater than 1.5 m ³	\$12.00	
	Full-size pick-ups (long box)/trailers with capacity greater than 1.5 m ³ with stakesides or overloaded	\$17.00	
	LOADS CONTAINING >25% OLD CORRUGATED CARDBOARD		\$22.00/m ³

ACCEPTED WASTE		FEE
TYPE		Minimum Fees Apply
SORTED	WOOD (yard trimmings, lumber, clean wood from residential demolition)	\$6.50 /m ³
	METAL (Barbeques, washing machines, bicycles, etc.)	\$10.00 /m ³
	Household Appliances containing Ozone Depleting Substances	\$10.00 /appliance
	BULKY WASTE (Furniture, mattresses, carpets, etc.)	\$6.50 /m ³
	Demolition, Landclearing and Construction Waste	\$28.00/m ³
	UNSORTED REGULAR WASTE	
Tires (cars, LT, SUV - NO RIM)		\$7.00/tire
Tires (medium duty - NO RIM)		\$11.00/tire

This site accepts Visa, Mastercard, Debit, Cash and Clean-up Coupons
(One coupon = 2 cu. Metres or 1 pick-up box filled to the edge)

FREE RECYCLING OF

Paper, #1-7 Plastics, Cardboard & Tin/foil containers here

UNSECURED LOADS ARE CHARGED DOUBLE!!

Figure 3-4: Volume Based Fees in the Peace River Regional District

3.1.4 Regional District of Fraser-Fort George

The Regional District of Fraser-Fort George (RDFFG) flanks the eastern border of the RDBN. With a total population of 94,506 people (2016 Census), and a land area of 50,676 km², the RDFFG has a population density of 1.9 persons per km². The current residual waste management system in the RDFFG consists of 3 landfills and 17 transfer stations. In 2018 the budgeted system cost is \$10.8 million of which 33% is recovered by taxation, 55% by user fees and 12% from other sources such as grants, reserves and prior year surplus. The 2018 tipping fee for refuse is \$85 per tonne. Revenue from tipping fees for refuse is budgeted at roughly \$5.4 million annually. The 2016 disposal rate for the RDFFG was 844 kilograms per capita.



Figure 3-5: Regional District of Fraser Fort-George Vanway Transfer Station

Although the RDFFG is not entirely comparable to the RDBN due to the large urban population concentrated in the City of Prince George that utilize the scaled Foothills Boulevard Regional Landfill, three of the RDFFG's smaller attended transfer sites provide some relevant examples regarding methods to collect fees. At the Vanway Transfer Station, just outside of the City limits, residential users from the City of Prince George can access the site for a flat fee of \$6.00 while rural users from the adjacent electoral area are provided with a swipe card to access the site. Figure 3-5 shows the attendants shack and automated gates.

At the McBride and Valemount Transfer Stations volume-based rates are applied to residential, commercial and municipal users. At both of these sites all site users must check with the on-site attendant for dumping instructions. The attendant uses a point-of-sale machine to collect fees using debit or credit. There is no cash on site. Of interest to the RDBN is the volume-based fee charges to municipal collection vehicles of \$105 per municipal collection for the Village of McBride and \$75 per municipal collection for the Village of Valemount. These fees are collected on account.

3.1.5 Thompson-Nicola Regional District

The Thompson-Nicola Regional District (TNRD) is not adjacent to RDBN but is very comparable. With a total population of 42,663 people (2016 Census), and a land area of 44,150 km², (excluding the City of Kamloops who own and operate their own solid waste system) the TNRD has a population density of 1.9 persons per km². The current residual waste management system in the TNRD consists of 2 landfills, 10 eco-depots and 18 transfer stations. In 2018 the budgeted system cost is \$12.7 million of which 58% is recovered by taxation, 20% by user fees and 22% from other sources such as grants, reserves and prior year surplus. The 2018 tipping fee for refuse is \$80 per tonne. Revenue from tipping fees for refuse is budgeted at roughly \$2.5 million annually. The 2016 disposal rate for the TNRD was 531 kilograms per capita.

The introduction of user fees was a major initiative of the TNRD's 2008 SWMP. Prior to that plan, taxes were steadily increasing, and user fees were seen as a method to stop tax increases and promote diversion. Volume-based fees were introduced in 2009 which coincided with closing dumps and providing attended transfer stations. In 2013 weight-based fees were introduced at the new fully scaled eco-depots. These eco-depots were constructed with a \$14 million Build Canada Grant and significantly improved services levels. Every site was upgraded to a varying degree.

TIPPING FEES		
HOUSEHOLD GARBAGE	WEIGHT BASED USER FEE LOADS OVER 50 KG	VOLUME BASED USER FEE
Solid waste generated from the day to day activities of households and non-industrial businesses. Household garbage is typically disposed of in bags. In addition, household items that are not part of a house or building would be considered household garbage, such as a garden hose.	\$80/tonne (\$4 min)	\$10/m ³
	Under 50kg \$1/bag up to 4 bags	\$1 min. charge \$1/bag
DEMOLITION / RENOVATION, LANDCLEARING & CONSTRUCTION (DLC)	WEIGHT BASED USER FEE LOADS OVER 50 KG	VOLUME BASED USER FEE
Solid waste generated from activities such as demolition, construction, renovations, industrial work, land clearing and grubbing. Any waste materials that was part of, or designed to be part of a house or building is considered DLC.	\$160/tonne (\$8 min.)	\$25/m ³
	Wood Waste	\$100/tonne (\$5 min.)
Asphalt Shingles	\$100/tonne (\$5 min.)	\$15/m ³

Figure 3-6: Fee Schedule from the Thompson Nicola Regional District

The introduction of tipping fees met with a significant public response. Staff received numerous threats and complaints. Most people couldn't fathom that anyone should have to pay for garbage. When fees were introduced

at larger sites, some residents would drive 40 kilometers each way to avoid paying fees. Since that time the public has come to accept the need for user fees. Staff from the TNRD advised that it is important to have an illegal dumping strategy in place to coincide with the introduction of fees. Currently the TNRD budget provides \$50,000 per year to clean-up illegal dump sites



Figure 3-7: Eco-Cards are One Option for Payment

In the TNRD system the accepted payment methods are debit, credit or Eco-Card. Cash is not accepted at any sites. The Eco-Card is a punch card worth \$20 for 20 punches. The cards are available for purchase at convenient sites through-out the TNRD. The only problem with the Eco-Card has been at remote sites where non-locals arrive without cards. This has resulted in a lot of work for very little revenue and in hindsight staff may not have implemented bag fees as small remote transfer stations.

Of all the regional districts reviewed for this study, the TNRD has some of the best graphics to illustrate to customers their volume based rates as illustrated in Figure 3-8 and Figure 3-9.

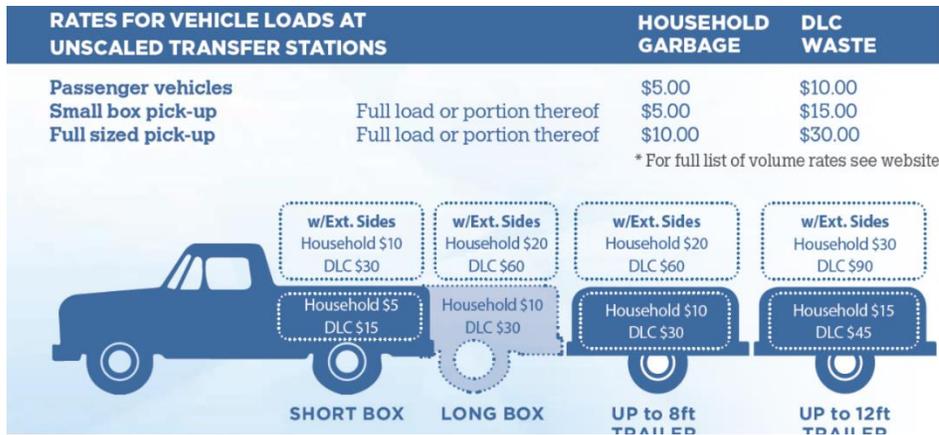


Figure 3-9: Volume Based Rates at TNRD Facilities



Figure 3-8: Rates for Bagged Garbage in the TNRD

3.1.6 Regional District of Kitimat Stikine

The Regional District of Kitimat-Stikine (RDKS) flanks the western border of the RDBN. With a total population of 37,367 people (2016 Census), and a land area of 104,465 km², the CRD has a population density of 0.4 persons per km². There are two solid waste service areas in the RDKS – the Terrace Service Area and the Hazelton and Stewart Service Area. This review deals with the Terrace Service Area which includes the City of Terrace and adjoining electoral areas. The City of Kitimat does not participate in the RDKS solid waste service, consequently the Terrace Service Area provides solid waste services to a population of 18,470.

Thornhill Transfer Station

Hours of Operation and Tipping Fees

Public Hours:
 Summer (May 1 - Oct 31): Saturday, Sunday, and Monday 12 noon — 7 pm
 Winter: (Nov 1 - April 30): Saturday, Sunday, and Monday 12 noon — 5 pm

Commercial Hours: Monday to Friday 9 am — 5 pm
 Saturday 12 noon — 5 pm

Minimum \$10 tipping fee applies. This covers up to 200 lbs. of garbage or construction/ demolition waste or, up to 220 lbs. of organic waste. (yard and garden)

All tipped loads are charged as follows:

- Garbage: \$110.00 / tonne
- Construction and Demolition Waste (Loads less than 5m³): \$110.00 / tonne
- Land Clearing Waste (Loads less than 5m³): \$110.00 / tonne
- Metal: \$55.00 / tonne
- Metal is also accepted at local salvage yards with no tip fee
- Organic Materials (including yard and garden waste): \$99.00 per tonne
- Animal Carcasses (Loads of 50 kg or less): \$110.00 per tonne**
- If animal carcass is greater than 50 kg please call the RDKS office at 250-615-6100*

NO CASH - Debit and Credit Only

CARDBOARD AND PAPER PRODUCTS, ELECTRONICS, TIRES, AND ALL OTHER E.P.R. RECYCLABLES ARE NOT ACCEPTED AT THE TRANSFER STATION.

Please ensure loads are secure and all materials are properly separated

Figure 3-10: Thornhill Transfer Station Hours of Operation and Tipping Fees

The current residual waste management system in the Terrace Service Areas consists of 1 new regional landfill, 1 new compost processing facility and one new transfer station. These new facilities, costing roughly \$17.5 million replaced an old landfill site in 2016. In 2018 the budgeted system cost is \$3.6 million (including the Terrace Area Curbside Program) of which 36% is recovered by taxation, 47% by user fees and 27% from other sources such as grants, reserves and prior year surplus.

The 2018 tipping fee for refuse is \$110 per tonne. Revenue from tipping fees for refuse is budgeted at roughly \$572,000 annually. The 2016 disposal rate for the RDKS was 769 kilograms per capita.

The Terrace Area Integrated SWMP includes curbside collection of garbage, recyclables and organics from households in the City of Terrace and the adjoining electoral areas. Commercial cardboard and organics is also banned from disposal. The hours of operation and tipping fees at the new Thornhill Transfer Station are provide in Figure 3-10.

It is important to note that the transfer station is only open three days per week for the public and five days per week for commercial haulers. This is likely due to the fact that the majority of residents have curbside collection services.

3.1.7 External Scan Summary

Table 3-1 summarizes the information provided in the previous sections. It is clear from this table that rural regional districts with a large land base and low population have high solid waste system costs due to the number of facilities required to service disperse populations. The system cost per tonne in these regional districts is relatively high due to the number of facilities meaning that recovering costs entirely through user fees would be unrealistic. This is why most rural regional districts cover the majority of their costs from taxation while urban regional districts with higher population densities can recover the majority of their costs through user fees. Nevertheless, most of the rural regional districts reviewed have started to introduce tipping fees, to varying degrees, as an incentive to reduce waste and a method to diversity the sources of funding.

Table 3-1: Summary of Neighbouring Regional District Solid Waste Systems

	RDBN	CRD	RDEK	PRRD	RDFFG	TNRD	RDKS
Population	37,896	61,988	60,439	62,942	94,506	42,663	18,470
Area	73,361	80,610	27,542	117,388	50,676	44,150	104,465
Density	0.5	0.8	2.2	0.5	1.9	1.0	0.4
Disposal Rate	600	748	561	685	844	531	769
Facilities							
Landfills	2	14	2	3	3	2	1
Transfer Stations	7	18	20	29	17	28	1
System Cost	\$6.3M	\$8.5M	\$8.7M	\$14.7M	\$10.8M	\$12.7M	\$3.6M
System Cost/tonne	\$277	\$183	\$257	\$341	\$135	\$561	\$253
Cost Recovery							
Taxation	77%	49%	82%	38%	33%	58%	36%
User Fees	5%	8%	15%	26%	55%	20%	47%
Other	18%	33%	3%	36%	12%	22%	27%
Tipping Fee	\$0	\$70	\$100	\$55	\$85	\$80	\$110
Commercial Fees	No	Yes	Yes	Yes	Yes	Yes	Yes
Residential Fees	No	No	No	Yes	Yes	Yes	Yes

3.2 Options for RDBN

Based on the review of neighbouring regional districts, there are two major options available to the RDBN to recover a higher percentage of costs from user fees. The first option would be to follow the approach adopted in the CRD and RDEK and introduce user fees for commercial waste only. The second option would be to introduce user fees for both commercial and residential waste. Based on the response from rural regional districts, the latter appears to be the simplest and fairest cost recovery model.

With respect to methods of cost recovery, there are two approaches weight based at facilities with scales and volume-based at facilities without scales. In both cases, facilities need to be attended, which increases system costs. This is why some regional districts reduce operating hours at facilities as a means to limit additional staffing costs.

In many cases, the cost of installing scales was included in facility upgrades plans. At the TNRD, development of scaled eco-depots qualified for significant grant funding. The RDBN would be wise to follow this approach.

4.0 RECOMMENDATIONS FOR COST RECOVERY

The scenarios below outline the various options and methodologies available for the RDBN to recover costs through user fees. The scenarios have been built based on:

- Feasibility of implementation at the RDBN's facilities;
- Feedback from the SWMP's Regional Solid Waste Advisory Committee and the Board of Directors; and

- The experiences of neighbouring regional districts.

Implementation costs were estimated based on a high-level review of the existing infrastructure and staff available at each facility. Revenues were based on recorded non-charged waste received at the two scaled sub-regional landfills and estimated vehicle counts based on attendant journals (for commercial and municipal loads) and the number of households within the service area that do not receive curbside garbage collection. Before implementing any of the actions summarized below, the RDBN should work to confirm the number and types of customers using each of its facilities to aid in planning and scaling new infrastructure and services.

As summarized in Table 3-1, most neighbouring regional districts recover only a portion of the costs of solid waste management through user fees and tipping fees. Based on an approximate system cost of \$6.3M and assuming a disposal rate of 16,000 tonnes per year the RDBN's tipping fee for solid waste could range from \$79 to \$158 per tonne.

Table 4-1: Summary of Tipping Fee Required to Achieve Cost Recovery Target

	Required Tipping Fee (\$/tonne)	Maximum Potential Revenue
Cost Recovery Target - 20%	\$79	\$1,260,000
Cost Recovery Target - 25%	\$98	\$1,575,000
Cost Recovery Target - 30%	\$118	\$1,890,000
Cost Recovery Target - 40%	\$158	\$2,520,000

Conservative standard user fees were assumed for the purpose of calculating total revenue at each facility:

- Commercial Loads - \$85 per tonne or \$212.50 per load (assuming 2.5 tonnes in an average commercial load).
- Municipal Loads - \$80.75 per load based on small collection vehicles.
- Self-Haul Loads - \$5 per load.

The user fees above are at the low end of what the RDBN would reasonably set as standard fees. As a result, the projected revenues summarized in the sections below are considered conservative estimates.

Conceptual Level cost estimates for Scenario 3 have been included in Appendix B with a summary of estimated costs and anticipated revenues for each scenario included in Appendix C.

4.1 Scenario 1 – Increase Taxes

To accommodate increasing costs of disposal and diversion programs, the RDBN could choose to continue with the current funding model, relying primarily on taxes to fund all programs. As detailed in Section 2.0 in a worst-case scenario, the funding gap is projected to reach \$1,312,000 by 2022 resulting in a tax increase of \$50 per year for the average household as compared to the 2018 rate.

In a status quo scenario where the RDBN continues to rely almost exclusively on taxes to fund its solid waste management system, no infrastructure or staffing changes related to cost recovery would be required at RDBN facilities. It is assumed that scale systems would be installed and/or certified at the Smithers and Vanderhoof Transfer Stations to service future recycling consolidation centers even if no changes are made to the cost recovery model.

4.1.1 Advantages and Disadvantages of Increasing Taxes

The primary advantage of the first scenario is that it maintains the status quo with no significant need for public communication or education. In the initial public survey for the RDBN's SWMP a few individuals did state their support of the current "no fee" waste disposal system.

There are two main disadvantages of increasing taxes to cover the increasing cost of solid waste. First, there is a limit to the public's acceptance of tax increases which will likely continue in order to fund the current and future solid waste management facilities and programs in the region. Second, a system primarily based on taxation offers no financial incentive for individuals, business, or communities to invest in waste diversion. It is the management of waste generated in the region that creates costs for the RDBN but without user fees it is the value of property that allocates the costs to residents.

4.2 Scenario 2 – Fees on Commercial Waste

The RDBN could choose to focus its energy on implementing tipping fees on commercial waste haulers only as a small expansion of the RDBN's current policy of charging for large loads of C&D waste and other special wastes (Specified Risk Materials, and goods with Ozone Depleting Substances).

The approach of first implementing user fees for commercial haulers was taken at the CRD and RDEK in part due to administrative ease and due to the public's concerns about illegal dumping. Targeting commercial waste haulers limits the number of transactions required at facilities and limits the risk to the environment because commercial haulers are unlikely to engage in the practice of illegal dumping.

Commercial waste is estimated to comprise 40% to 50% of the total waste stream in the RDBN. Assuming a weight-based tipping fee of \$85 per tonne applied to 80% of the commercial waste in the region, revenue from fees on commercial waste haulers could be in the range of \$500,000 per year.

In implementing tipping fees for commercial waste haulers, the RDBN would focus on the facilities that receive enough commercial customers to fund collection of fees (effectively excluding the two smallest transfer stations). Since fees may not be uniformly applied across all RDBN facilities, additional policies would be required in order to effectively define commercial waste and direct the majority of this waste, especially large loads, to facilities that are able to collect user fees. Based on the estimated cost of operation and anticipated revenue (see Appendix C), commercial fees would be implemented at the following facilities:

- Clearview Sub-Regional Landfill (CLF) - Current facility operations would remain in place with all vehicles scaled in and out through an unstaffed scale system and presenting their ticket to the landfill attendant. Because CLF does not receive self-haul residential waste, this facility could easily implement commercial waste tipping fees.
- Knockholt Sub-Regional Landfill (KLF) - Minor facility upgrades may be required to allow attendants to adequately screen loads entering the facility to identify commercial vs residential loads. Current scaling operations could likely remain in place with vehicles carrying commercial waste scaled in and out through an unstaffed scale system and presenting their ticket to the landfill attendant.
- Vanderhoof Transfer Station (VTS) – Facility upgrades may be required to allow attendants to adequately screen and scale loads entering the facility to identify commercial vs residential loads. The anticipated infrastructure upgrades include at a minimum a single (inbound/outbound) scale and supporting infrastructure to weigh commercial loads of garbage and recyclables at a future recycling consolidation center. Based on attendant journals the transfer station receives an estimated 500+ commercial loads each year. Vehicle counts and calculation of peak traffic volumes would be considered in the business case for installing a second scale at the VTS.

- Smithers Telkwa Transfer Station (STTS) – Minimal facility upgrades would be required to certify and operationalize the existing scale system and scalehouse to screen and scale commercial loads. Based on the area’s population and economy there is likely a significant number small and medium sized loads of commercial waste brought to STTS which may be assessed a tipping fee under this scenario. With additional data (vehicle counts and types of loads), RDBN staff can fully assess the feasibility of charging fees on commercial loads at STTS.
- Burns Lake Transfer Station (BLTS) – In the longer term, some facility upgrades could allow the BLTS to collect commercial waste user fees based on a scaled weight. However, a volume based system could be implemented initially to charge commercial customers with minimal capital and operating costs such as improved signage at the transfer station, purchase of a handheld point-of-sale (POS) unit, and subscription for an additional license of the RDBN’s existing scale software. The transfer station attendant would be equipped with a POS unit which they would use to charge credit and debit cards or existing accounts.
- Fort St. James Transfer Station (FSJTS) – A volume based system could be implemented to charge commercial customers. Minor capital and operating costs would be incurred as described for the BLTS. The existing transfer station attendant would be equipped with a POS to charge commercial customers.
- Area D Transfer Station (ADTS) – A volume based system could be implemented to charge commercial customers. Minor capital and operating costs would be incurred as described for the BLTS. The existing transfer station attendant would be equipped with a POS to charge commercial customers.

Table 4-2: Cost and Revenue Summary - Commercial Waste Fees

Facility	Method of Measurement	Estimated Capital Cost	Estimated Additional Annual Operation Cost	Anticipated Additional Annual Revenue
Clearview Sub-Regional Landfill	Scale	0	0	\$51,000
Knockholt Sub-Regional Landfill	Scale	-\$35,000	-\$65,000	\$197,000
Vanderhoof Transfer Station	Scale	-\$163,000	-\$65,000	\$108,000
Smithers/Telkwa Transfer Station	Scale	-\$15,000	-\$65,000	\$66,000
Burns Lake Transfer Station	Volume/Load	-\$9,000	-\$6,000	\$34,000
Fort St. James Transfer Station	Volume/Load	-\$9,000	-\$6,000	\$25,000
Area D Transfer Station – Fraser Lake Rural	Volume/Load	-\$9,000	-\$6,000	\$19,000
Office/Administration Support (0.25 FTE)	N/A	N/A	-\$22,500	N/A
	Total	-\$240,000	-\$235,500	\$500,000

4.2.1 Advantages and Disadvantages of Commercial Waste Fees

Several advantages of targeted tipping fees for commercial waste haulers were identified based on the experience of neighbouring regional districts and experiences throughout western Canada. For instance, there are a limited number of commercial haulers operating in rural areas, limiting the number of accounts and transactions that must be managed by the RDBN. Limiting the number of transactions at each facility may allow this extra duty to be completed by existing staff, minimizing operational costs. Additionally, commercial haulers are unlikely to engage in illegal dumping.

There are also a number of disadvantages to this targeted approach. Without charging for all waste entering its facilities, the RDBN will not be able to capture fees for all loads that should be charged. Applying tipping fees to only commercial waste haulers may encourage more businesses to self-haul their waste, decreasing business for

existing haulers and decreasing potential revenue for the RDBN. To address this issue, some regional districts have implemented tipping fees on all waste with an exemption for loads under a certain size (such as the CRD's previous policy to not charge for loads under 450kg). An alternate solution is to apply tipping fees for all commercial waste regardless of who hauls it. These policies tend to create a separate problem, forcing facility staff to assess whether the waste being brought in is residentially or commercially generated.

4.3 Scenario 3 – Fees on All Solid Waste

The most inclusive and simplest approach would be for the RDBN to phase in comprehensive user fees on all solid waste. This is the most common approach for local governments when applying user fees since the source of waste being disposed (whether commercial or residential) has little impact on the process or cost to transfer and landfill the material.

Approximately 16,000 tonnes of commercial and residential waste is disposed in the RDBN each year. Assuming a weight-based fee of \$85 per tonne, user fees applied to all solid wastes disposed could reach up to \$1,360,000 annually.

The implementation of tipping fees would most likely be phased in based on planned facility upgrades and availability of grant funding to subsidize portions of the capital costs. Based on the available tonnage and vehicle count data, it is assumed that scale systems will be installed at only the largest sites to ensure full cost recovery for the majority of waste disposed in the RDBN. Small and medium sized transfer stations will see minor capital improvements needed to apply volume-based fees on vehicle loads.

With the exception of the smallest facilities (Granisle Transfer Station and Southside Transfer Station), and CLF, one additional FTE was allocated to each facility to support collection of user fees. Appendix B includes conceptual level cost estimates for the facility capital upgrades and estimated operations costs:

- CLF - Current facility operations would remain in place with vehicles scaled in and out through an unstaffed scale system and presenting their ticket to the landfill attendant upon request.
- KLF - Minor facility upgrades may be required to allow attendants to adequately screen loads entering the facility. Current scaling operations could likely remain in place with vehicles carrying large loads of SRM, C&D, and commercial waste scaled in and out through an unstaffed scale system and presenting their ticket to the landfill attendant upon request. Additionally, an attendant located at the drop-off area would use a POS unit or punch card to charge all self-haul loads a per vehicle rate based on vehicle and/or trailer size.
- STTS – In the short term, volume-based user fees could be implemented while capital improvements are planned and completed. Ultimately, a weight-base system would be used to assess tipping fees. It is assumed that the existing scale would be certified as a component of the planned western regional recycling consolidation center to meet RecycleBC standards for a consolidation facility. Based on available data, the STTS receives an average 100-200 customers per day for waste disposal with peak days seeing 300-400 customers. Based on an assumed peak hour volume in excess of 35 vehicles, certification of a two-scale system for inbound traffic and outbound traffic would be recommended. This system would include purchase and installation of a second scale, relocation and upgrades to the existing scalehouse, and minor site works to optimize traffic flow within the facility. A further assessment of traffic flows is recommended to confirm the need for a second scale at the STTS.
- Granisle Transfer Station (GTS) – Based on the small size and limited customer base of the GTS, a volume-based fee system would be implemented. This system would require minimal capital and operating costs such as improved signage at the transfer station, purchase of a handheld point-of-sale (POS) unit, and subscription for an additional license of the RDBN's existing scale software. The transfer station attendant would be

equipped with a POS unit which they would use to charge credit and debit cards. The RDBN may also choose to sell punch cards at local government offices to accommodate those who prefer to use cash.

- BLTS – In the longer term, some facility upgrades could allow the BLTS to collect user fees based on a scaled weight. However, a volume based system could be implemented initially with minimal capital and operating costs while capital improvements are planned and implemented. Ultimately, a single scale system is anticipated to adequately accommodate the BLTS' average 40-70 customers per day. A further assessment of traffic flows is recommended to confirm that one scale will accommodate peak traffic volumes at BLTS.
- FSJTS – A volume based system could be implemented to charge customer fees at the FSJTS. Minor capital and operating costs would be incurred as described for the BLTS. A transfer station attendant would be equipped with a POS to charge commercial customers. RDBN may choose to sell punch cards at local government offices to accommodate those who prefer to use cash.
- ADTS – A volume based system could be implemented to charge customer fees at the ADTS. Minor capital and operating costs would be incurred as described for the BLTS. A transfer station attendant would be equipped with a POS to charge commercial customers. RDBN may choose to sell punch cards at local government offices to accommodate those who prefer to use cash.
- Southside Transfer Station (SSTS) - Based on the small size and limited customer base of the SSTS, a volume-based fee system would be implemented. This system would require minimal capital and operating costs such as improved signage at the transfer station, purchase of a handheld point-of-sale (POS) unit, and subscription for an additional license of the RDBN's existing scale software. The transfer station attendant would be equipped with a POS unit which they would use to charge credit and debit cards and the RDBN may choose to sell punch cards at local government offices to accommodate those who prefer to use cash.
- VTS – In the short term, volume-based user fees could be implemented while capital improvements are planned and implemented. Ultimately, a weight-base system would be used to assess tipping fees. It is assumed that at least one scale would be installed as a component of the planned eastern regional recycling consolidation center to meet RecycleBC standards for a facility of this type. Based on attendant journals the transfer station receives an estimated 500+ commercial loads each year with an estimated daily traffic volume of 90-140 vehicles for waste disposal. The available information indicates that a two-scale (inbound traffic, and outbound traffic) system would be warranted to best utilize the available space at the VTS and prevent cueing on the public road. Vehicle counts and calculation of peak traffic volumes should be considered in the business case for installing a second scale at the VTS.

Table 4-3: Cost and Revenue Summary – Fees on All Solid Waste

Facility	Method of Measurement	Estimated Capital Cost (Assumed 50% Grant Funding for Scaled Facilities)	Estimated Additional Annual Operation Cost	Anticipated Additional Annual Revenue
Clearview Sub-Regional Landfill	Scale	N/A	N/A	\$51,000
Knockholt Sub-Regional Landfill	Scale	-\$35,000	-\$65,000	\$223,000
Smithers/Telkwa Transfer Station	Scale	-\$79,000	-\$65,000	\$306,000
Granisle Transfer Station	Volume/Load*	-\$8,000	-\$6,000	\$57,000
Burns Lake Transfer Station	Scale	-\$85,000	-\$65,000	\$128,000
Fort St. James Transfer Station	Volume/Load*	-\$9,000	-\$65,000	\$122,000
Area D Transfer Station – Fraser Lake Rural	Volume/Load*	-\$9,000	-\$65,000	\$151,000
Southside Transfer Station	Volume/Load*	-\$8,000	-\$6,000	\$81,000
Vanderhoof Transfer Station	Scale	-\$163,000	-\$65,000	\$296,000
Office/Administration Support (1 FTE)	N/A	N/A	-\$90,000	N/A
Mitigating Illegal Dumping	N/A	N/A	-\$50,000	N/A
Total		-\$364,000	-\$518,500	\$1,415,000

* Anticipated revenue for facilities without scale systems is based on estimated annual commercial and municipal loads projected from the data recorded in attendant journals and average residential use ever third week for households outside of municipal waste collection boundaries.

4.3.1 Advantages and Disadvantages of Fees on All Solid Waste

A strong advantage of applying fees to all solid waste disposed at RDBN facilities is that the approach is the simplest allocation of costs with no perceived bias for any one community or industry. This approach offers the optimal opportunity to influence behaviour at the household and business level by creating financial incentive for diversion and building portions of the infrastructure needed for future diversion programs such as collection of source separated organic waste. The focus on diversion may also provide an advantage in grant applications. Neighbouring regional districts were able to secure generous grants to fund a large portion of the capital costs required to upgrade their transfer stations to full service waste and diversion facilities (in some cases called “Eco Depots”).

Based on the feedback of neighbouring regional districts, the RSWAC, and RDBN staff some disadvantages of this approach have also been identified. Collection of user fees at all RDBN facilities has the highest associated operating and capital cost of the three scenarios identified especially where there is a preference for weight-based fees with the requisite scales and scalehouse attendants. Significant staffing increases are required to accommodate the new responsibilities for facility staff with labour costs comprising over 75% of the estimated annual operating costs associated with cost recovery. Additionally, to limit the staffing costs some changes to facility operating hours may be required over time to most efficiently utilize staff to accommodate peak times. Some regional districts have experienced an increase in illegal dumping related to the implementation of user fees necessitating the allocation of significant budget to prevent and clean up illegal dumping.

4.4 Recommended Scenario

Applying fees to all solid waste is the approach recommended to meet the RDBN's goals and needs. This approach provides the maximum benefit of financial incentives and potential cost recovery for the RDBN. Furthermore, a phased (go-slow) approach similar to that used by the TNRD will offer the RDBN the time needed to complete the planning, consultation, public education, infrastructure upgrades, and hiring required to successfully implement this approach.

An implementation plan for either Scenario 2 or Scenario 3 provided in Section 5.0.

5.0 IMPLEMENTATION PLAN

The following implementation plan provides a work plan for staff to plan and implement user fees in the RDBN.

Table 5-1: User Fee Implementation Work Plan

Task Description	2018	2019	2020	2021	2022
1. Collect data on facilities.					
Install traffic counters at facilities to collect several months of data.					
Track all commercial, municipal, and First Nations loads and their time of arrival for 2-3 weeks (through attendant journals).					
2. Develop a preliminary plan for implementation of user fees.					
3. Consult with the public and key stakeholders (municipalities, waste haulers, etc.).					
4. Develop policies and bylaw changes to support weight-based and volume-based user fees.					
5. Develop an illegal dumping mitigation program in partnership with First Nations and municipalities.					
6. Communicate the planned changes with the public.					
7. Procure and install equipment and infrastructure needed for fee collection.					
8. If applicable, develop a punch card for non-card transactions at the transfer station.					
9. Implement volume-based fees at relevant facilities. Implement weight-based fees at CLF and KLF.					
10. Confirm the number of scales needed at each facility and begin planning scale infrastructure such a potential development geotechnical assessments and foundation designs and develop plans for facility upgrades.					
11. Apply for grants to fund development of Eco-Depots at large facilities.					
12. Build Eco Depots at VTS and STTS. Implement weight-based user fees.					
13. Implement weight-based user fees at other facilities (as applicable).					

6.0 CLOSURE

We trust this document meets your present requirements. If you have any questions or comments, please contact the undersigned.

Respectfully submitted,
Tetra Tech Canada Inc.

ISSUED FOR REVIEW

Prepared by:
Lauren Quan, P.Eng.
Project Engineer
Solid Waste Management Practice
Direct Line: 604.830.0563
Lauren.Quan@tetrattech.com

ISSUED FOR REVIEW

Prepared by:
Carey McIver
Principal
Carey McIver & Associates
Direct Line: 250.821.9889
Carey@careymciver.com

ISSUED FOR REVIEW

Reviewed by:
James Lapp,
Senior Project Technologist
Solid Waste Management Practice
Direct Line: 587.460.3630
James.Lapp@tetrattech.com

APPENDIX A

**TETRA TECH'S SERVICES AGREEMENT AND LIMITATIONS ON THE USE
OF THIS DOCUMENT**

LIMITATIONS ON USE OF THIS DOCUMENT

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APPENDIX B

CONCEPTUAL LEVEL CAPITAL AND OPERATIONS COSTS BY FACILITY

Table B-1: Smithers/Telkwa Transfer Station Conceptual Costs

Item	Description	Unit	Approx. Quantity	Unit Price	Total Price
Site Preparations	Clearing and Grubbing	m ²	50	\$4	\$200
Scale Facility	Scales (Inbound exists, 40' Outbound new) check 11'	Unit	1	\$60,000	\$60,000
	Traffic Controls	Unit	0	\$600	\$0
	Foundation	L.S.	1	\$10,000	\$10,000
	Scalehouse Changes/Upgrades	ft ²	100	\$150	\$15,000
	Electrical	L.S.			\$10,000
Scale and Cost	POS Unit (Laptop with Card Reader)	L.S.	0	\$2,000	\$0
Site Changes and Traffic Control	Site Prep	m ²	220	\$4	\$880
	Excavation	m ³	15	\$9	\$135
	Backfill	m ³	15	\$8	\$120
	Lock Block Wall for Traffic Control (delivered)	Unit	10	\$200	\$2,000
	Wheel Stops	Unit	5	\$275	\$1,375
	Signage and Line Work	L.S.			\$5,000
Surfaces	Gravel Surface	m ²	150	\$15	\$2,250
	Base Course	m ²	300	\$20	\$6,000
Subtotal					\$112,960
Geotechnical/Engineering Design (15%)					\$16,944
Construction Contract Administration (10%)					\$11,296
Contingency (15%)					\$16,944
Total (Excluding GST)					\$158,144

Operations Cost Increases	Description	Unit	Approx. Quantity	Unit Cost	Total Cost
Staffing	Scale Operator (1 FTE)	FTE	1	\$ 51,513	\$ 51,513
	Recycling and Reuse Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$ -
	Transfer Station Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$ -
Cost System	Scale Software License	Unit	1	\$ 1,100	\$ 1,100
	Phone Line	Unit	1	\$ 360	\$ 360
Utilities	Electricity	Unit	1	\$ 1,800	\$ 1,800
Subtotal					\$54,773
Contingency (15%)					\$8,216
Total (Excluding GST)					\$65,148

Table B-2: Vanderhoof Transfer Station Conceptual Costs

Item	Description	Unit	Approx. Quantity	Unit Price	Total Price
Site Preparations	Clearing and Grubbing	m ²	0	\$4	\$0
Scale Facility	Scales (40' Inbound, 80' Outbound)	Unit	2	\$80,000	\$160,000
	Traffic Controls	Unit	0	\$600	\$0
	Foundation	L.S.	2	\$12,500	\$25,000
	Scalehouse	ft ²	100	\$150	\$15,000
	Electrical	L.S.			\$19,000
Scale and Cost	POS Unit (Laptop with Card Reader)	L.S.	0	\$2,000	\$0
Site Changes and Traffic Control	Site Prep	m ²	1,010	\$4	\$4,040
	Excavation	m ³	0	\$9	\$0
	Backfill	m ³	0	\$8	\$0
	Lock Block Wall for Traffic Control (delivered)	Unit	20	\$200	\$4,000
	Wheel Stops	Unit	5	\$275	\$1,375
	Signage and Line Work	L.S.			\$5,000
Surfaces	Gravel Surface	m ²	0	\$15	\$0
	Base Course	m ²	0	\$20	\$0
Subtotal					\$233,415
Geotechnical/Engineering Design (15%)					\$35,012
Construction Contract Administration (10%)					\$23,342
Contingency (15%)					\$35,012
Total (Excluding GST)					\$326,781

Operations Cost Increases	Description	Unit	Approx. Quantity	Unit Cost	Total Cost
Staffing	Scale Operator (1 FTE)	FTE	1	\$ 51,513	\$ 51,513
	Recycling and Reuse Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$ -
	Transfer Station Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$ -
Cost System	Scale Software License	Unit	1	\$ 1,100	\$ 1,100
	Phone Line	Unit	1	\$ 360	\$ 360
Utilities	Electricity	Unit	1	\$ 1,800	\$ 1,800
Subtotal					\$54,773
Contingency (15%)					\$8,216
Total (Excluding GST)					\$65,148

Table B-3: Burns Lake Transfer Station Conceptual Costs

Item	Description	Unit	Approx. Quantity	Unit Price	Total Price
Site Preparations	Clearing and Grubbing	m ²	0	\$4	\$0
Scale Facility	Scales (Inbound/Outbound 40')	Unit	1	\$60,000	\$60,000
	Traffic Controls	Unit	2	\$600	\$1,200
	Foundation	L.S.	1	\$10,000	\$10,000
	Scalehouse Changes/Upgrades	ft ²	100	\$150	\$15,000
	Electrical	L.S.			\$25,000
Scale and Cost Technology	POS Unit (Laptop with Card Reader)	L.S.		\$2,000	\$0
Site Changes and Traffic Control	Site Prep	m ²	383	\$4	\$1,532
	Excavation	m ³	0	\$9	\$0
	Backfill	m ³	0	\$8	\$0
	Lock Block Wall for Traffic Control (delivered)	Unit	10	\$200	\$2,000
	Wheel Stops	Unit	5	\$275	\$1,375
	Signage and Line Work	L.S.			\$5,000
Surfaces	Gravel Surface	m ²	0	\$15	\$0
	Base Course	m ²	0	\$20	\$0
Subtotal					\$121,107
Geotechnical/Engineering Design (15%)					\$18,166
Construction Contract Administration (10%)					\$12,111
Contingency (15%)					\$18,166
Total (Excluding GST)					\$169,550

Operations Cost Increases	Description	Unit	Approx. Quantity	Unit Cost	Total Cost
Staffing	Scale Operator (1 FTEs)	FTE	1.0	\$ 51,513	\$51,513
	Recycling and Reuse Attendant (0.7 FTEs - existing)	FTE	0	\$ 51,513	\$0.00
	Transfer Station Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$0.00
Cost System	Scale Software License	Unit	1	\$ 1,100	\$1,100.00
	Phone Line	Unit	1	\$ 360	\$360.00
Utilities	Electricity	Unit	1	\$ 1,800	\$1,800.00
Subtotal					\$54,773
Contingency (15%)					\$8,216
Total (Excluding GST)					\$65,148

Table B-4: Knockholt Sub-Regional Landfill Conceptual Costs

Item	Description	Unit	Approx. Quantity	Unit Price	Total Price
Site Preparations	Clearing and Grubbing	m ²	0	\$4	\$0
Scale Facility	Scales (Inbound/Outbound)	Unit	0	\$60,000	\$0
	Traffic Controls	Unit	0	\$600	\$0
	Foundation	L.S.	0	\$10,000	\$0
	Scalehouse Changes/Upgrades	ft ²	100	\$150	\$15,000
	Electrical	L.S.			\$5,000
Scale and Cost Technology	POS Unit (Laptop with Card Reader)	L.S.	1	\$2,000	\$2,000
Site Changes and Traffic Control	Site Prep	m ²	20	\$4	\$80
	Excavation	m ³	0	\$9	\$0
	Backfill	m ³	0	\$8	\$0
	Lock Block Wall for Traffic Control (delivered)	Unit	5	\$200	\$1,000
	Wheel Stops	Unit	2	\$275	\$550
	Signage and Line Work	L.S.			\$3,000
Surfaces	Gravel Surface	m ²	0	\$15	\$0
	Base Course	m ²	0	\$20	\$0
Subtotal					\$26,630
Engineering and Construction Contract Administration (15%)					\$3,995
Contingency (15%)					\$3,995
Total (Excluding GST)					\$34,619

Operations Cost Increases	Description	Unit	Approx. Quantity	Unit Cost	Total Cost
Staffing	Scale Operator (1 FTEs)	FTE	1.0	\$ 51,513	\$51,513
	Recycling and Reuse Attendant (0 FTEs)	FTE	0	\$ 51,513	\$0.00
	Transfer Station Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$0.00
Cost System	Scale Software License	Unit	1	\$ 1,100	\$1,100.00
	Phone Line	Unit	1	\$ 360	\$360.00
Utilities	Electricity	Unit	1	\$ 1,800	\$1,800.00
Subtotal					\$54,773
Contingency (15%)					\$8,216
Total (Excluding GST)					\$65,148

Table B-5: Area D and Fort St. James Transfer Station Conceptual Costs

Item	Description	Unit	Approx. Quantity	Unit Price	Total Price
Site Preparations	Clearing and Grubbing	m ²	0	\$4	\$0
Scale Facility	Scales (Inbound/Outbound)	Unit	0	\$60,000	\$0
	Traffic Controls	Unit	0	\$600	\$0
	Foundation	L.S.	0	\$10,000	\$0
	Scalehouse Changes/Upgrades	ft ²	0	\$150	\$0
	Electrical	L.S.			\$0
Scale and Cost Technology	POS Unit (Laptop with Card Reader)	L.S.	1	\$2,000	\$2,000
Site Changes and Traffic Control	Site Prep	m ²	0	\$4	\$0
	Excavation	m ³	0	\$9	\$0
	Backfill	m ³	0	\$8	\$0
	Lock Block Wall for Traffic Control (delivered)	Unit	5	\$200	\$1,000
	Wheel Stops	Unit	2	\$275	\$550
	Signage and Line Work	L.S.			\$3,000
Surfaces	Gravel Surface	m ²	0	\$15	\$0
	Base Course	m ²	0	\$20	\$0
Subtotal					\$6,550
Engineering and Construction Contract Administration (15%)					\$983
Contingency (15%)					\$983
Total (Excluding GST)					\$8,515

Operations Cost Increases	Description	Unit	Approx. Quantity	Unit Cost	Total Cost
Staffing	Scale Operator (1 FTEs)	FTE	1	\$ 51,513	\$51,512.50
	Recycling and Reuse Attendant (0 FTEs)	FTE	0	\$ 51,513	\$0.00
	Transfer Station Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$0.00
Cost System	Scale Software License	Unit	1	\$ 1,100	\$1,100.00
	Phone Line	Unit	1	\$ 360	\$360.00
Utilities	Electricity	Unit	1	\$ 1,800	\$1,800.00
Subtotal					\$54,773
Contingency (15%)					\$8,216
Total (Excluding GST)					\$65,148

Table B-6: Granisle and Southside Transfer Station Conceptual Costs

Item	Description	Unit	Approx. Quantity	Unit Price	Total Price
Site Preparations	Clearing and Grubbing	m ²	0	\$4	\$0
Scale Facility	Scales (Inbound/Outbound)	Unit	0	\$60,000	\$0
	Traffic Controls	Unit	0	\$600	\$0
	Foundation	L.S.	0	\$10,000	\$0
	Scalehouse Changes/Upgrades	ft ²	0	\$150	\$0
	Electrical	L.S.			\$0
Scale and Cost Technology	POS Unit (Laptop with Card Reader)	L.S.	1	\$2,000	\$2,000
Site Changes and Traffic Control	Site Prep	m ²	0	\$4	\$0
	Excavation	m ³	0	\$9	\$0
	Backfill	m ³	0	\$8	\$0
	Lock Block Wall for Traffic Control (delivered)	Unit	5	\$200	\$1,000
	Wheel Stops	Unit	2	\$275	\$550
	Signage and Line Work	L.S.			\$3,000
Surfaces	Gravel Surface	m ²	0	\$15	\$0
	Base Course	m ²	0	\$20	\$0
Subtotal					\$6,550
Engineering and Construction Contract Administration (15%)					\$983
Contingency (15%)					\$983
Total (Excluding GST)					\$8,515

Operations Cost Increases	Description	Unit	Approx. Quantity	Unit Cost	Total Cost
Staffing	Scale Operator (0 FTEs)	FTE	0	\$ 51,513	\$0.00
	Recycling and Reuse Attendant (0 FTEs)	FTE	0	\$ 51,513	\$0.00
	Transfer Station Attendant (2 FTEs - existing)	FTE	0	\$ 51,513	\$0.00
Cost System	Scale Software License	Unit	1	\$ 1,100	\$1,100.00
	Phone Line	Unit	1	\$ 360	\$360.00
Utilities	Electricity	Unit	1	\$ 1,800	\$1,800.00
Subtotal					\$3,260
Contingency (15%)					\$489
Total (Excluding GST)					\$5,909

APPENDIX C

SUMMARY OF ANTICIPATED COSTS AND REVENUES BY FACILITY AND SCENARIO

Table C-1: Projected Costs and Revenues for Scenario 2

Transfer Station	Cost Recovery		2020		2021		2022		2023		2024		2025		2026		2027		2028	
	Fee Basis (W - Weight; V - Volume)	New FTEs	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue
Smithers/Telkwa Transfer Station	W	1	\$ -	\$ -	\$(111,646)	\$ 33,150	\$ (65,148)	\$ 66,300	\$ (65,148)	\$ 66,366	\$ (65,148)	\$ 66,433	\$ (65,148)	\$ 66,499	\$ (65,148)	\$ 66,566	\$ (65,148)	\$ 66,632	\$ (65,148)	\$ 66,699
Granisle Transfer Station	V	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Burns Lake Transfer Station	W	0	\$ -	\$ -	\$ (11,470)	\$ 17,213	\$ (2,955)	\$ 34,425	\$ (2,955)	\$ 34,459	\$ (2,955)	\$ 34,494	\$ (2,955)	\$ 34,528	\$ (2,955)	\$ 34,563	\$ (2,955)	\$ 34,597	\$ (2,955)	\$ 34,632
Fort St. James Transfer Station	V	0	\$ -	\$ -	\$ (11,470)	\$ 12,489	\$ (2,955)	\$ 24,977	\$ (2,955)	\$ 24,977	\$ (2,955)	\$ 24,977	\$ (2,955)	\$ 24,977	\$ (2,955)	\$ 24,977	\$ (2,955)	\$ 24,977	\$ (2,955)	\$ 24,977
Area D Transfer Station – Fraser Lake Rural	V	0	\$ -	\$ -	\$ (11,470)	\$ 9,563	\$ (2,955)	\$ 19,125	\$ (2,955)	\$ 19,125	\$ (2,955)	\$ 19,125	\$ (2,955)	\$ 19,125	\$ (2,955)	\$ 19,125	\$ (2,955)	\$ 19,125	\$ (2,955)	\$ 19,125
Southside Transfer Station	V	0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Vanderhoof Transfer Station	W	1	\$ -	\$ -	\$(174,249)	\$ 53,763	\$ (10,858)	\$ 107,525	\$ (10,858)	\$ 107,633	\$ (65,148)	\$ 107,740	\$ (65,148)	\$ 107,848	\$ (65,148)	\$ 107,956	\$ (65,148)	\$ 108,064	\$ (65,148)	\$ 108,172
Takla Landing Transfer Station	N/A	N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Clearview Sub-Regional Landfill	W		\$ -	\$ 12,726	\$ -	\$ 50,905	\$ -	\$ 50,905	\$ -	\$ 50,956	\$ -	\$ 51,007	\$ -	\$ 51,058	\$ -	\$ 51,109	\$ -	\$ 51,161	\$ -	\$ 51,212
Knockholt Sub-Regional Landfill	W	1	\$(67,193)	\$ 98,341	\$(99,767)	\$ 196,682	\$ (65,148)	\$ 196,682	\$ (65,148)	\$ 196,878	\$ (65,148)	\$ 197,075	\$ (65,148)	\$ 197,272	\$ (65,148)	\$ 197,469	\$ (65,148)	\$ 197,667	\$ (65,148)	\$ 197,865
Manson Creek Landfill	N/A	N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal - Facility Costs and Revenues			\$(67,193)	\$ 111,067	\$(420,071)	\$ 373,763	\$(150,018)	\$ 499,939	\$(150,018)	\$ 500,395	\$(204,309)	\$ 500,851	\$(204,309)	\$ 501,308	\$(204,309)	\$ 501,765	\$(204,309)	\$ 502,223	\$(204,309)	\$ 502,681
Office/Management	0.25		\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -	\$(22,500)	\$ -
Total			\$(89,693)	\$ 111,067	\$(442,571)	\$ 373,763	\$(172,518)	\$ 499,939	\$(172,518)	\$ 500,395	\$(226,809)	\$ 500,851	\$(226,809)	\$ 501,308	\$(226,809)	\$ 501,765	\$(226,809)	\$ 502,223	\$(226,809)	\$ 502,681

Table C-2: Projected Costs and Revenues for Scenario 3

Transfer Station	Cost Recovery		2020		2021		2022		2023		2024		2025		2026		2027		2028	
	Fee Basis (W - Weight; V - Volume)	New FTEs	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue	Costs	Anticipated Revenue
Smithers/Telkwa Transfer Station	W	1	\$ -	\$ -	\$(111,646)	\$ 152,787	\$ (65,148)	\$ 305,574	\$ (65,148)	\$ 305,880	\$ (65,148)	\$ 306,186	\$ (65,148)	\$ 306,492	\$ (65,148)	\$ 306,798	\$ (65,148)	\$ 307,105	\$ (65,148)	\$ 307,412
Granisle Transfer Station	V	0	\$ -	\$ -	\$(11,470)	\$ 28,545	\$ (5,909)	\$ 57,090	\$ (5,909)	\$ 57,147	\$ (5,909)	\$ 57,204	\$ (5,909)	\$ 57,261	\$ (5,909)	\$ 57,318	\$ (5,909)	\$ 57,376	\$ (5,909)	\$ 57,433
Burns Lake Transfer Station	W	0	\$ -	\$ -	\$(117,349)	\$ 63,791	\$ (65,148)	\$ 127,582	\$ (65,148)	\$ 127,710	\$ (65,148)	\$ 127,838	\$ (65,148)	\$ 127,965	\$ (65,148)	\$ 128,093	\$ (65,148)	\$ 128,222	\$ (65,148)	\$ 128,350
Fort St. James Transfer Station	V	0	\$ -	\$ -	\$(41,089)	\$ 75,461	\$ (65,148)	\$ 122,013	\$ (65,148)	\$ 122,135	\$ (65,148)	\$ 122,257	\$ (65,148)	\$ 122,380	\$ (65,148)	\$ 122,502	\$ (65,148)	\$ 122,625	\$ (65,148)	\$ 122,747
Area D Transfer Station – Fraser Lake Rural	V	0	\$ -	\$ -	\$(41,089)	\$ 75,461	\$ (65,148)	\$ 150,921	\$ (65,148)	\$ 151,072	\$ (65,148)	\$ 151,223	\$ (65,148)	\$ 151,374	\$ (65,148)	\$ 151,526	\$ (65,148)	\$ 151,677	\$ (65,148)	\$ 151,829
Southside Transfer Station	v	0	\$ -	\$ -	\$(11,470)	\$ 40,276	\$ (5,909)	\$ 80,552	\$ (5,909)	\$ 80,633	\$ (5,909)	\$ 80,713	\$ (5,909)	\$ 80,794	\$ (5,909)	\$ 80,875	\$ (5,909)	\$ 80,956	\$ (5,909)	\$ 81,037
Vanderhoof Transfer Station	W	1	\$ -	\$ -	\$(195,965)	\$ 147,811	\$ (65,148)	\$ 295,621	\$ (65,148)	\$ 295,917	\$ (65,148)	\$ 296,213	\$ (65,148)	\$ 296,509	\$ (65,148)	\$ 296,805	\$ (65,148)	\$ 297,102	\$ (65,148)	\$ 297,399
Takla Landing Transfer Station	N/A	N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Clearview Sub-Regional Landfill	W		\$ -	\$ 25,453	\$ -	\$ 50,905	\$ -	\$ 50,905	\$ -	\$ 50,956	\$ -	\$ 51,007	\$ -	\$ 51,058	\$ -	\$ 51,109	\$ -	\$ 51,161	\$ -	\$ 51,212
Knockholt Sub-Regional Landfill	W	1	\$(67,193)	\$ 111,341	\$(99,767)	\$ 222,682	\$ (65,148)	\$ 222,682	\$ (65,148)	\$ 222,904	\$ (65,148)	\$ 223,127	\$ (65,148)	\$ 223,350	\$ (65,148)	\$ 223,574	\$ (65,148)	\$ 223,797	\$ (65,148)	\$ 224,021
Manson Creek Landfill	N/A	N/A	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Subtotal - Facility Costs and Revenues			\$(67,193)	\$ 136,793	\$(629,845)	\$ 857,718	\$(402,708)	\$ 1,412,941	\$(402,708)	\$ 1,414,354	\$(402,708)	\$ 1,415,768	\$(402,708)	\$ 1,417,184	\$(402,708)	\$ 1,418,601	\$(402,708)	\$ 1,420,019	\$(402,708)	\$ 1,421,440
Office/Management		1	\$(22,500)	\$ -	\$(45,000)	\$ -	\$(90,000)	\$ -	\$(90,000)	\$ -	\$(90,000)	\$ -	\$(90,000)	\$ -	\$(90,000)	\$ -	\$(90,000)	\$ -	\$(90,000)	\$ -
Total			\$(89,693)	\$ 136,793	\$(674,845)	\$ 857,718	\$(492,708)	\$ 1,412,941	\$(492,708)	\$ 1,414,354	\$(492,708)	\$ 1,415,768	\$(492,708)	\$ 1,417,184	\$(492,708)	\$ 1,418,601	\$(492,708)	\$ 1,420,019	\$(492,708)	\$ 1,421,440



The Burns Lake Return-It depot gave full deposits for most things except the beer bottles and cans as per their contract with Brewers' Distributor Ltd., until the pilot program. (Lakes District News file photo)

Customers won't get full deposit on aluminium cans and beer bottles

Depot will require customers to sort their alcohol and non-alcohol cans

PRIYANKA KETKAR / Jan. 13, 2021 1:30 a.m. / LOCAL NEWS / NEWS

The full deposit refund pilot program for aluminium cans and beer bottles that started in July last year, has been discontinued and the Return-It Bottle Depot in Burns Lake will now be able to give only eight cents back.

The Burns Lake Return-It depot gave full deposits for most things except the beer bottles and cans as per their contract with Brewers' Distributor Ltd. (BDL) however, Chris Beach, the former Burns Lake mayor and current depot owner had told *Lakes District News* in July last year, that Encorp Pacific had agreed to accept beer cans and some beer bottles for a full deposit as part of an aluminium can pilot program.

However, the six-month pilot program has received no approval for continuation from the Ministry of Environment and the Burns Lake bottle depot, along with 90 other depots across B.C. will no longer be able to provide the full deposit of 10 cents to customers.

Starting Jan. 4, the Burns Lake Return-It Bottle Depot has been able to offer only eight cents deposit per can instead of 10 cents and the customers also have to separate their cans.

“It’s not just a money issue but also that people have to separate their non-alcohol and alcohol aluminium cans; so it is a massive hassle for the public and the depot staff,” said Beach.

Encorp Pacific President & CEO, Allen Langdon spoke about the pilot program and said it was still a waiting game.

“From our perspective, we proposed making this permanent as part of the report we submitted back in October, and so, while we had hoped that it would get approved by the end of the year, it was highly unlikely to happen by Jan. 1,” he said.

While Langdon didn’t have any specifics on the success of the pilot program on a local level, he maintained that his organization believed in fairness and ensuring customer convenience.

“For us, our main concern is always providing the greatest convenience to consumers,” he said, adding that if the program is not approved, depending on whether the individual depots have a contract with the beer companies for a full deposit or not, the customers would be affected accordingly. “At the very least, they will have to sort their cans,” added Langdon.

Before the pilot program in July, a lot of Burns Lake residents had to either drive up to Fraser Lake or Prince George to get the full price on their beer can and beer bottle returns. A limited number of cans and bottles were also accepted at the local BC Liquor Store up until the pandemic. Once the pandemic hit however, they stopped taking those returns as well and customers suddenly had no where to go for a full price.

“People always assume that the bottle depot owners are ripping people off but it is the major brewing companies like BDL, Molson Coors Canada and Sleeman Brewing,” said Beach.

“We are trying to get the NDP government to carry through and make sure that BDL pays the 10 cents,” added Beach. To support the depot’s communication to the ministry, the depot is asking customers to write to the Ministry of Environment to resolve this issue.

RELATED: Burns Lake beer enthusiasts will now get a full 10 cent deposit on beer cans



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