REGIONAL DISTRICT OF BULKLEY-NECHAKO

WASTE MANAGEMENT COMMITTEE

AGENDA

Thursday, May 12, 2022

PAGE NO.		ACTION
	CALL TO ORDER	
	AGENDA – May 12, 2022	**Approve**
	SUPPLEMENTARY AGENDA	**Receive**
	MINUTES	
3-5	**Waste Management Committee Meeting Minutes – April 14, 2022**	**Approve**
	COMMITTEE ADVOCACY	
	Verbal Report – Chair Fisher **-Welcome Youth Members**	
	SOLID WASTE ADVISORY COMMITTEE UPDATE	
	Verbal Report – Alex Eriksen, Director of Environmental Services – First Meeting Date	
	POLICY REVIEW	
	None	
	DIVERSION & RECYCLING	
	None	
	MISCELLANEOUS	
6-73	**Alex Eriksen, Director of Environmental Services** **- Review of Cost Recovery and the RDBN**	**Discussion/Receive**
74-76	**Alex Eriksen, Director of Environmental Services** **- Waste Characterization and Recycling Feedstock Inventory Update**	**Recommendation**
	Verbal Update – Highlights of the SWANA (Solid Waste Association of North America) Zero Waste Conference	

OPERATIONS UPDATE

Verbal Updates- Alex Eriksen, Director of Environmental Services

1. **Knockholt Capacity and Waste Re-routing Plan Update**

2. **Department Activity**

FUTURE MEETING TOPICS

- **Recycling Depot– Discussion - May 2022**
- **2m3 Rule Discussion – Strategy, Challenges, Enforcement – June 2022**
- **Daily Cover Material – Considerations for Sawmill waste (Hog fuel) – June 2022**

SUPPLEMENTARY AGENDA

NEW BUSINESS

ADJOURNMENT

REGIONAL DISTRICT OF BULKLEY-NECHAKO

WASTE MANAGEMENT COMMITTEE MEETING

Thursday, April 14, 2022

PRESENT:	Chair	Mark Fisher
	Directors	Gladys Atrill – arrived at 11:52 a.m. Shane Brienen Chris Newell Jerry Petersen Michael Riis-Christianson Gerry Thiessen
	Staff	Curtis Helgesen, Chief Administrative Officer– via Zoom Cheryl Anderson, Director of Corporate Services Alex Eriksen, Director of Environmental Services John Illes, Chief Financial Officer Wendy Wainwright, Deputy Director of Corporate Services
	Others	Clint Lambert, Electoral Area "E" (Francois/Ootsa Lake Rural) Annette Morgan, Village of Telkwa – via Zoom
	Media	Eddie Huband, LD News

CALL TO ORDER Chair Fisher called the meeting to order at 11:36 a.m.

AGENDA Moved by Director Riis-Christianson
Seconded by Director Brienen

WMC.2022-4-1 "That the Waste Management Committee Agenda for April 14, 2022 be approved."

(All/Directors/Majority) CARRIED UNANIMOUSLY

MINUTES

Waste Management Committee Meeting Minutes March 17, 2022 Moved by Director Petersen
Seconded by Director Brienen

WMC.2022-4-2 "That the Minutes of the Waste Management Committee for March 17, 2022 be approved."

(All/Directors/Majority) CARRIED UNANIMOUSLY

COMMUNITY ADVOCACY

None

SOLID WASTE ADVISORY COMMITTEE (SWAC) UPDATE

None

POLICY REVIEW

Alex Eriksen, Director of Environmental Services provided an overview of the proposed amendments and provided clarification for Bylaw 1839 Schedule D. Changes to the fee schedule need to be provided to Ministry of Environment and Climate Change Strategy for approval. Including a definition/acronym section was discussed.

Bylaw 1879 Schedule D: User Fees and Disposal Rules – Proposed Amendments

Moved by Director Brienen
Seconded by Director Riis-Christianson

WMC.2022-4-3

"That the Committee receive the Director of Environmental Services' Bylaw 1879 Schedule D: User Fees and Disposal Rules – Proposed Amendments memorandum."

(All/Directors/Majority) CARRIED UNANIMOUSLY

DIVERSION & RECYCLING

None

OPERATIONS UPDATE

Woodwaste Operations Update

Moved by Director Riis-Christianson
Seconded by Director Petersen

WMC.2022-4-4

"That the Committee receive the Director of Environmental Services' Wood Waste Operations Update memorandum."

(All/Directors/Majority) CARRIED UNANIMOUSLY

Mr. Eriksen provided an overview of the Wood Waste Operations Update.

Discussion took place regarding:
- Continued sourcing for future diversion of brush and clean wood waste
- Utilizing the air curtain burner
- Grinding vs. chipping wood waste
- Staff will provide an update in the future.

Verbal Update – Department Activity

Mr. Eriksen noted that operations are continuing as normal, and staff are moving forward with planning capital projects.

MISCELLANEOUS

Verbal Update – Cost Recovery Plan Review Deferral to May 2022

Chair Fisher expressed the need to move forward with the Cost Recovery Plan Review. Staff will bring forward information in May, 2022. The Committee discussed ensuring that sufficient time is allocated for the discussion at the Waste Management Committee Meeting in May. It was suggested that one hour be allocated for discussion.

FUTURE MEETING TOPICS

- Houston – Solid Waste and Recycling – May 2022
- Cost Recovery Plan – Review and Update – May 2022
- Disposal Fee Bylaw Changes – May 2022
- 2m3 rule – do we limit. Loopholes etc. – May 2022
- Daily Cover Material – Considerations for Sawmill waste (Hog fuel) – June 2022

ADJOURNMENT Moved by Director Newell
Seconded by Director Petersen

WMC.2022-4-5 "That the meeting be adjourned at 12:04 p.m."

(All/Directors/Majority) CARRIED UNANIMOUSLY

Mark Fisher, Chair

Wendy Wainwright, Deputy Director of Corporate Services

REGIONAL DISTRICT OF BULKLEY-NECHAKO
MEMORANDUM

To: Chair Fisher and Waste Management Committee

From: Alex Eriksen, Director of Environmental Services

Date: May 12, 2022

Subject: A Review of Cost Recovery and the RDBN

RECOMMENDATION

Receipt/Discussion.

INTRODUCTION

Cost Recovery refers to any method of generating revenue for a service to pay for the cost of providing that service. In the context of waste management, this generally translates to a “pay-to-dispose” system which can offset the operational costs for disposal or generate revenue from disposal services. Cost recovery strategies and goals vary greatly, but it is common for publicly funded services to employ a cost recovery system to reduce/eliminate taxation, discourage disposal and incentivize diversion and recycling.

CURRENT COST RECOVERY

Since the early 2000’s, the RDBN has used weigh scales at the Knockholt Landfill near Houston and the Clearview Landfill near Vanderhoof to collects fees for Commercial Construction & Demolition (C&D) Waste. The actual combined Revenue for C&D in 2019, 2020 and 2021 were $287,000, $151,000 and $190,000 respectively. There are additional disposal revenue streams such as contaminated soils, special risk material, camp waste, handling fees and penalty fees, however, these are not consistent year-to-year and are highly unpredictable.

SOLID WASTE MANAGEMENT PLAN

In 2018 the RDBNs Solid Waste Management Plan (SWMP) was adopted by the RDBN Board of Directors and functions as a guidance document for the RDBN Board of Directors and waste management team (Link provided as an attachment). Section 4.3.1 (below) of the SWMP, identifies the issue of the RDBN’s waste management program being funded primarily through taxation which does not incentivize recycling or support other strategic priorities of the plan. The recommended action was to develop a strategy to increase cost recovery from disposal of Municipal Solid Waste and other materials.

4.3.1 Assess Cost Recovery Through User Fees

Issue: The solid waste management system in the RDBN is primarily funded through taxation versus tipping fees which minimizes financial incentive for residents, business, and most municipalities to dispose of materials rather than recycle them. As the cost of sustainable solid waste management increases, most northern regional districts have adopted bylaws to apply user fees in varying degrees to increase this funding source and balance the ratio of taxation versus tipping fees. Implementing the options and actions identified in the SWMP will result in increases to operating costs which will need to be recovered through increases in taxation or tipping fees. Reassessing the feasibility of implementing tipping fees at all facilities may better support the solid waste management system, diversify revenue sources, and support the RDBN’s strategic priorities.

A. Develop a strategy to increase cost recovery from municipal solid waste and other materials in the RDBN.

a. Update previous studies on cost recovery through user fees with particular emphasis on the successful cost recovery policies and systems implemented in neighbouring regional districts.

b. Conduct consultation to confirm public and stakeholder support for implementation of user fees.

c. Implement user fees to fund a portion of the RDBN's operational costs.

Actions	Estimated Capital Cost	Estimated Operating Cost
Develop a strategy to increase cost recovery from municipal solid waste and other materials in the RDBN.	-	Cost recovery strategy: ▪ $20,000 (in year one)

COST RECOVERY STUDY

In 2018, Tetra Tech Canada Inc. was retained to conduct a Cost Recovery Study (CRS) of the RDBN and report on the findings (attached). The CRS examines the RDBN's waste management budget and projected future funding gaps and investigates cost recovery systems of several similar Regional Districts. The CRS provided three scenarios that would support the strategic priorities of the waste management plan and account for the projected funding gap.

1. Scenario 1 – Increase Taxes
2. Scenario 2 – Fees on Commercial Waste
3. Scenario 3 – Fees on All Solid Waste

Tetra Tech recommended Scenario 3 and provided an implementation plan to actualize applying fees to all solid waste by the end of 2022.

RDBN BOARD MOTION

On September 6, 2018, after reviewing the CRS and the power point presentation from Tetra Tech (attached), the Board of Directors passed a motion to implement Scenario 3 of the Cost Recovery Study:

Solid Waste Management Plan
Cost Recovery Study Report

Moved by Director Bachrach
Seconded by Director Fisher

2018-13-22 That the Regional District of Bulkley-Nechako Board of Directors direct staff to implement the Solid Waste Management Plan – Cost Recovery Study Scenario 3 – Fees on All Solid Waste when the Ministry of Environment has formally approved the RDBN 2018 Solid Waste Management Plan."

(All/Directors/Majority) CARRIED UNANIMOUSLY

The Ministry of Environment officially approved the RDBN's SWMP in December of 2019.

DISCUSSION POINTS

The following items are some initial discussion points that should be considered and evaluated further prior to reviewing the proposed implementation plan contained in the Tetra Tech proposal.

1. Compare the five-year financial plan from 2018 to 2022 to analyze differences and how these impact the funding gaps identified in 2018.
2. Consider the future plans for recycling equality across the region (i.e. the ability to divert through programs with RBC).
3. Review of options for organics diversion for the region.
4. Consider the approximate $4.3 million of unfunded liability for landfill closures, and how this will be addressed when converting to a full cost recovery model.

CLOSURE

Cost recovery is an important part of modern waste management and the RDBN has committed to establishing a strategy that applies fees for the disposal of all solid waste. Implementing the cost recovery strategy is a considerable undertaking which will require careful and informed planning as well as significant capital and operational investment.

Respectfully Submitted,

Alex Eriksen
Director of Environmental Services

Attachments:
1. Cost Recovery Study Report – Tetra Tech Canada Inc. – August 2018
2. Tetra Tech Cost Recovery Powerpoint Presentation
3. 2018 Solid Waste Management Plan – Tetra Tech Canada Inc. – October 2018 (link)

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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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 worse 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 (km^2), the RDBN has a population density of only 0.5 persons per km^2. 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 km^2, the CRD has a population density of 0.8 persons per km^2. 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
Municipal Solid Waste	**Secured, Non-contaminated Loads**	**Contaminated Loads**
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 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.

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 (≤ 2m³)		**Wood[1.]**	**DLC[2.]**
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		**Wood[1.]**	**DLC[3.]**
Up to 8 ft. long (≤ 2m³)			
	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

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. 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.

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 km^2, the RDEK has a population density of 2.2 persons per km^2. 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 km^2, the PRRD has a population density of 0.5 persons per km^2. 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.

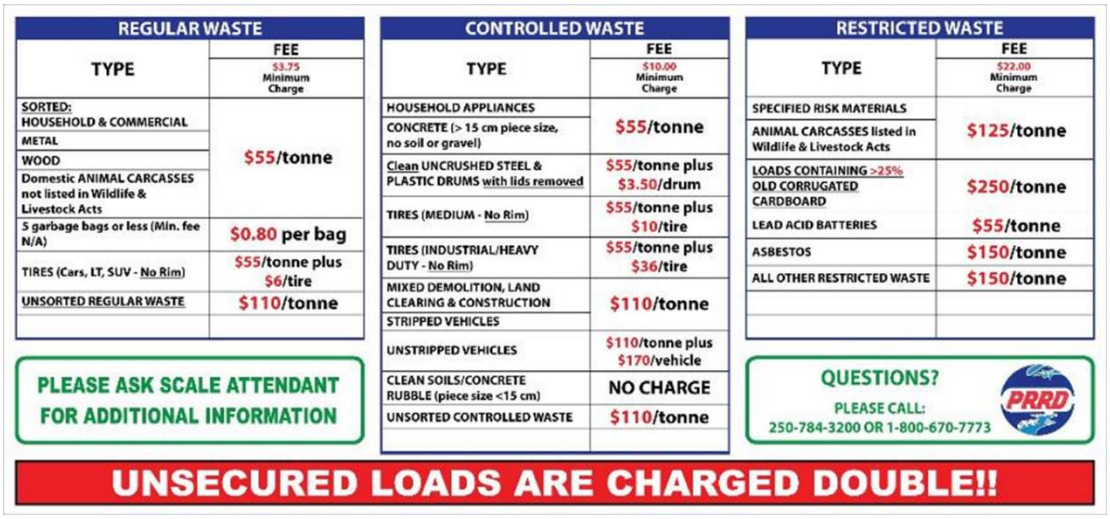
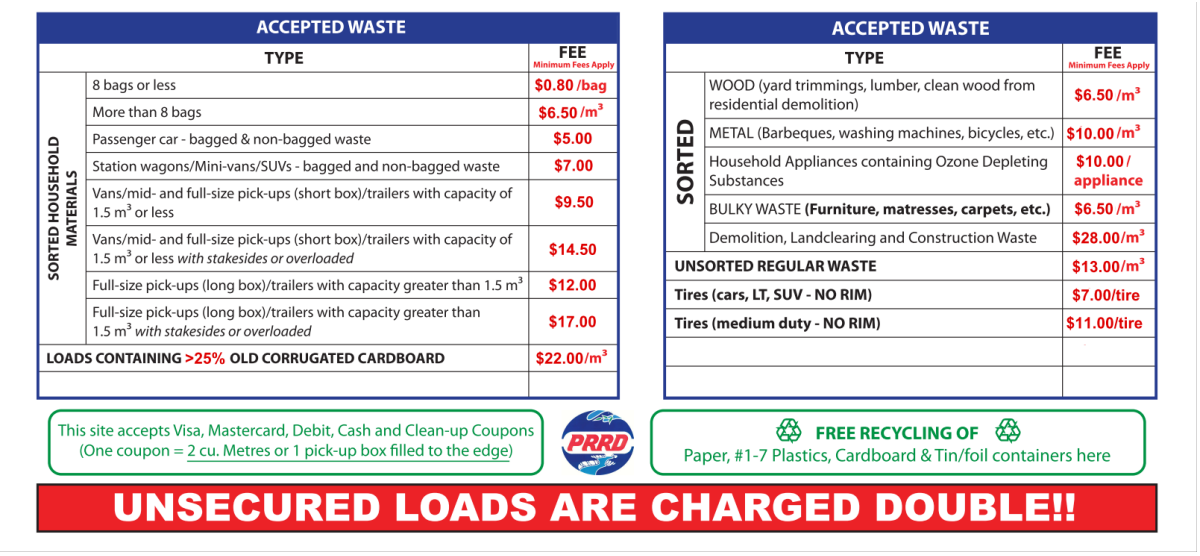


Figure 3-3: Weight-Based Fees in the Peace River Regional District

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

	TYPE	FEE (Minimum Fees Apply)
SORTED HOUSEHOLD MATERIALS	8 bags or less	$0.80 /bag
	More than 8 bags	$6.50 /m³
	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 m³ or less	$9.50
	Vans/mid- and full-size pick-ups (short box)/trailers with capacity of 1.5 m³ or less *with stakesides or overloaded*	$14.50
	Full-size pick-ups (long box)/trailers with capacity greater than 1.5 m³	$12.00
	Full-size pick-ups (long box)/trailers with capacity greater than 1.5 m³ *with stakesides or overloaded*	$17.00
LOADS CONTAINING >25% OLD CORRUGATED CARDBOARD		$22.00/m³

ACCEPTED WASTE

	TYPE	FEE (Minimum Fees Apply)
SORTED	WOOD (yard trimmings, lumber, clean wood from residential demolition)	$6.50 /m³
	METAL (Barbeques, washing machines, bicycles, etc.)	$10.00 /m³
	Household Appliances containing Ozone Depleting Substances	$10.00 / appliance
	BULKY WASTE **(Furniture, matresses, carpets, etc.)**	$6.50 /m³
	Demolition, Landclearing and Construction Waste	$28.00/m³
UNSORTED REGULAR WASTE		$13.00/m³
Tires (cars, LT, SUV - NO RIM)		$7.00/tire
Tires (medium duty - NO RIM)		$11.00/tire

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 km^2, the RDFFG has a population density of 1.9 persons per km^2. 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 RDDFG'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 km^2, (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 km^2. 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) Under 50kg $1/bag up to 4 bags	$10/m³ $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/m³
Wood Waste	$100/tonne ($5 min.)	$15/m³
Asphalt Shingles	$100/tonne ($5 min.)	$15/m³

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.

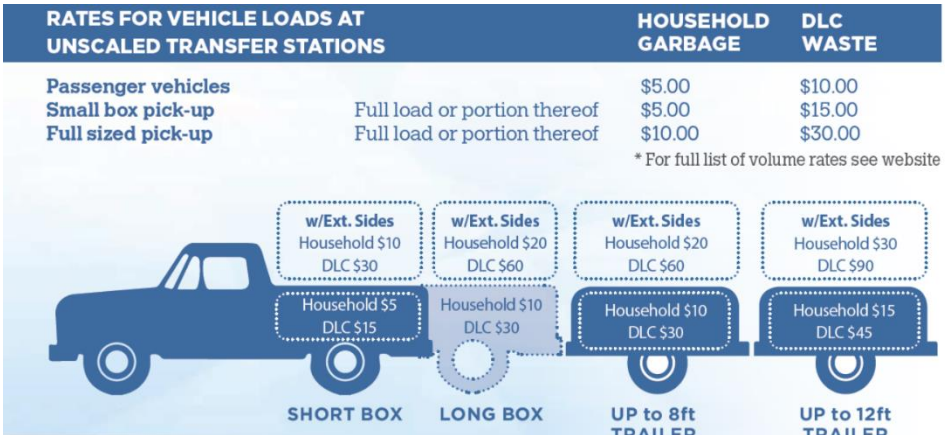


Figure 3-9: Volume Based Rates at TNRD Facilities

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 km^2, the CRD has a population density of 0.4 persons per km^2. 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 5m^3): $110.00 / tonne

Land Clearing Waste (Loads less than 5m^3): $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.

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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 - Facilitie 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 - Facilitie 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**

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Solid Waste Management Cost Recovery Study

Report Issued for Review

Board Webinar September 6, 2018

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Outline

1. Introduction
2. Defining the Funding Gap
3. Options to Close the Funding Gap
4. Recommendations for Cost Recovery
5. Potential Impact on Funding Gap
6. Proposed Implementation Plan

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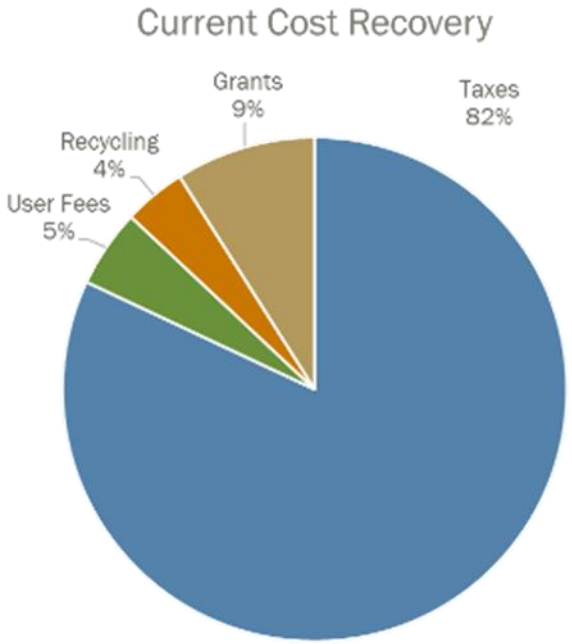
REGIONAL DISTRICT OF BULKLEY NECHAKO

Introduction

Cost Recovery Study - Board Direction



Issue:

- Increase taxes to meet funding needs?
- Limited 3R's incentive

May

- Approve Draft SWMP for public consultation
- Informed of potential funding gap
- Request that Cost Recovery Study be completed ASAP

June

- Approve Cost Recovery Study scope of work and fee estimate
- What would cost recovery look like and how would it be implemented

July

- Receive progress report
- Focus on External Scan of adjacent regional districts

Sept

- Receive Cost Recovery Study IFR
- Adopt and submit 2018 SWMP to Ministry of Environment and Climate Change Strategy for approval

Project Objectives

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

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REGIONAL DISTRICT OF BULKLEY NECHAKO

Defining the Funding Gap

Current Five Year Financial Plan (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**

Proposed Changes to Approved Five Year Financial Plan

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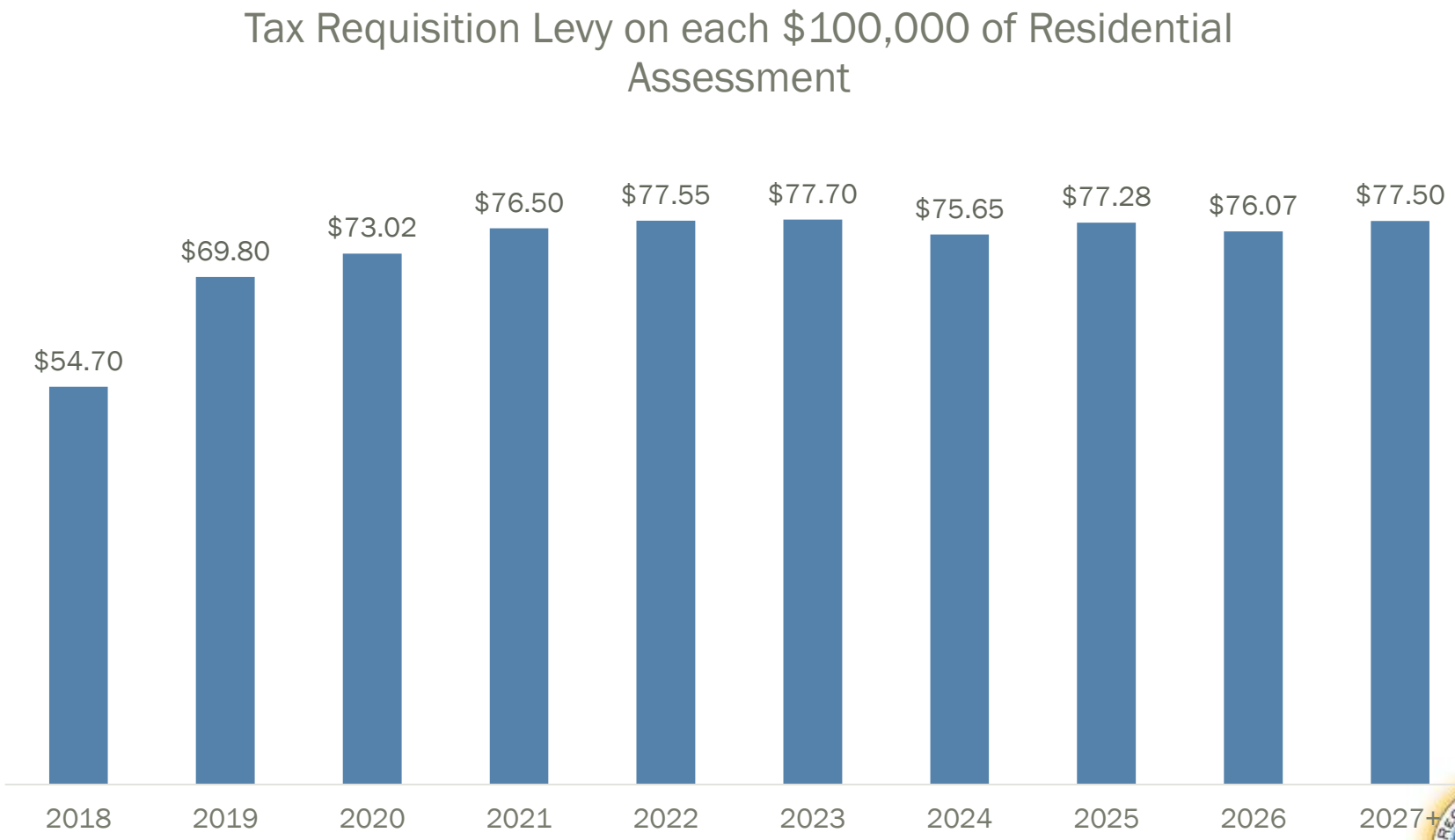
	2018	2019	2020	2021	2022
PROPOSED Operating Expenditures					
REDUCE/REUSE/RECYCLE					
Increase Reduction and Reuse	$ -	$ -	$ -	$ -	$ -
Expand Access to Residential Recycling	$ (16,300)	$ 26,100	$ (3,800)	$ 75,700	$ 155,200
Increase ICI Sector Recycling	$ 3,000	$ 8,500	$ 8,500	$ 8,500	$ 8,500
Increase 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

Funding Gap - Worst Case Scenario



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Options to Close the Funding Gap

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Summary of Regional District Scan

	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**

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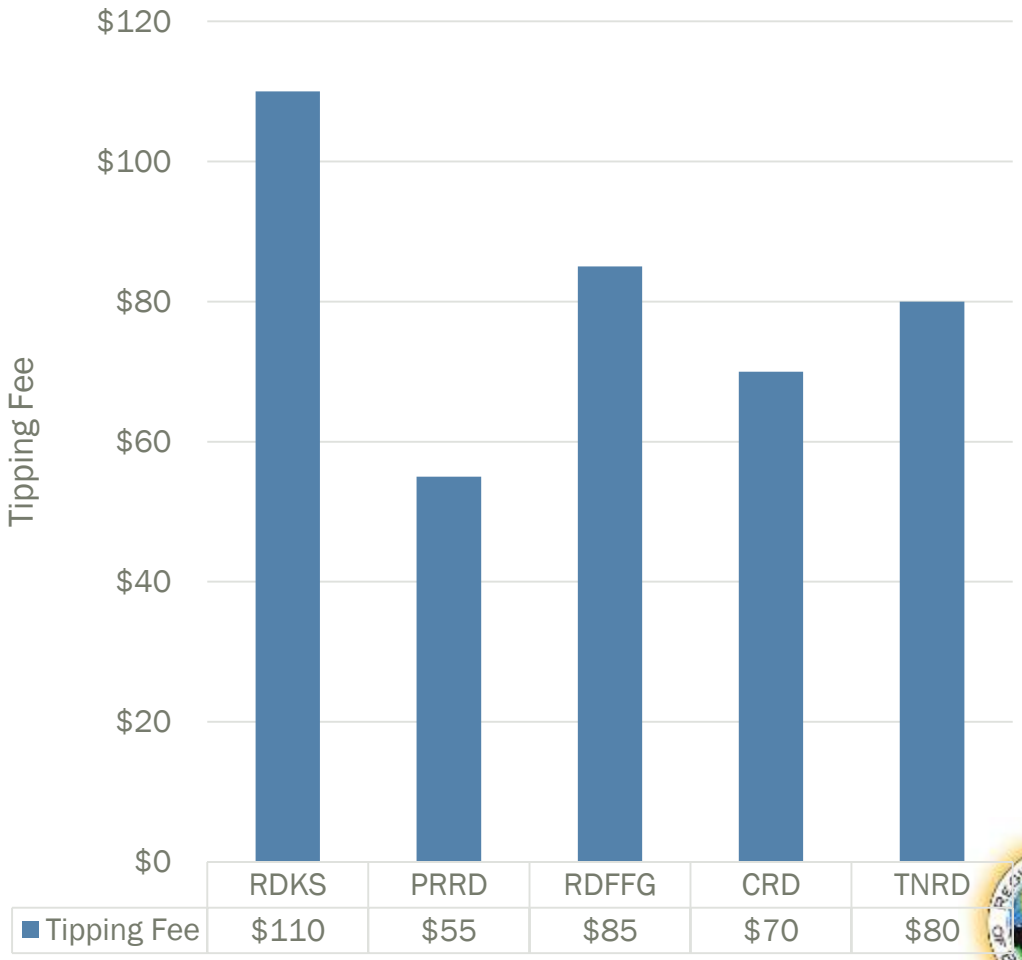
Recommendations for Cost Recovery

Potential Scenarios

1. Increase Taxes – Status Quo
2. User Fees on Commercial Waste
3. User Fees on All Solid Waste

Tipping Fees in Adjacent Regional Districts



Potential Tipping Fee Revenue

Summary of Tipping Fees to Achieve Cost Recovery Targets

	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

Assumed user fees for the purpose of calculating revenue:

- 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.

Proposed Implementation 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).					■

Scenario 1 – Increase Taxes

- New User Fee Revenue
  - $0
- New Tax Revenue Required

	2018	2019	2020	2021	2022
Required Tax Revenue	$0	$867,000	$1,052,000	$1,252,000	$1,312,000

- New Costs (Operational/Capital)
  - $0

Scenario 1 – Increase Taxes

+	-
• No changes requiring public support and education.	• Taxes will continue to increase. • No financial incentive to divert solid waste.

Scenario 2 – Fees on Commercial Waste

- New User Fee Revenue

	2018	2019	2020	2021	2022
Gross Revenue	$0	$0	$111,067	$373,763	$499,939

- New Operational/Capital Costs

	2018	2019	2020	2021	2022
Cost	$0	$0	($89,693)	($442,571)	($172,518)

- New Tax Revenue Required

	2018	2019	2020	2021	2022
Funding Gap	$0	$867,000	$1,052,000	$1,252,000	$1,312,000
Net User Fee Revenue (Gross Revenue – Cost)	$0	$0	$21,374	($68,808)	$327,421
Tax Revenue Required	$0	$867,000	$1,030,626	$1,320,808	$984,579

Scenario 2 – Fees on Commercial Waste

+	-
• Limited number of haulers and transactions can be managed by existing staff. • Likely little impact on illegal dumping.	• RDBN will miss charging some loads. • Charging only large commercial loads may distort the hauling market. • Charging all commercial loads but not residential loads forces staff to decide which customers are charged.

Scenario 3 – Fees on All Solid Waste

- New User Fee Revenue

	2018	2019	2020	2021	2022
Gross Revenue	$0	$0	$136,793	$857,718	$1,412,941

- New Operational/Capital Costs

	2018	2019	2020	2021	2022
Cost	$0	$0	($89,693)	($674,845)	($492,708)

- New Tax Revenue Required

	2018	2019	2020	2021	2022
Funding Gap	$0	$867,000	$1,052,000	$1,252,000	$1,312,000
Net User Fee Revenue (Gross Revenue – Cost)	$0	$0	$47,100	$182,873	$920,232
Tax Revenue Required	$0	$867,000	$1,004,900	$1,069,127	$391,768

Scenario 3 – Fees on All Solid Waste

+	-
• Simplest system to explain to the public. • All solid waste disposed could be charged. • Optimal opportunity to influence behaviour. • May have more compelling grant applications to fund infrastructure.	• Highest capital and operating costs. • Staffing increases will be required. • Some facility operations may be changed. • Illegal dumping may occur.

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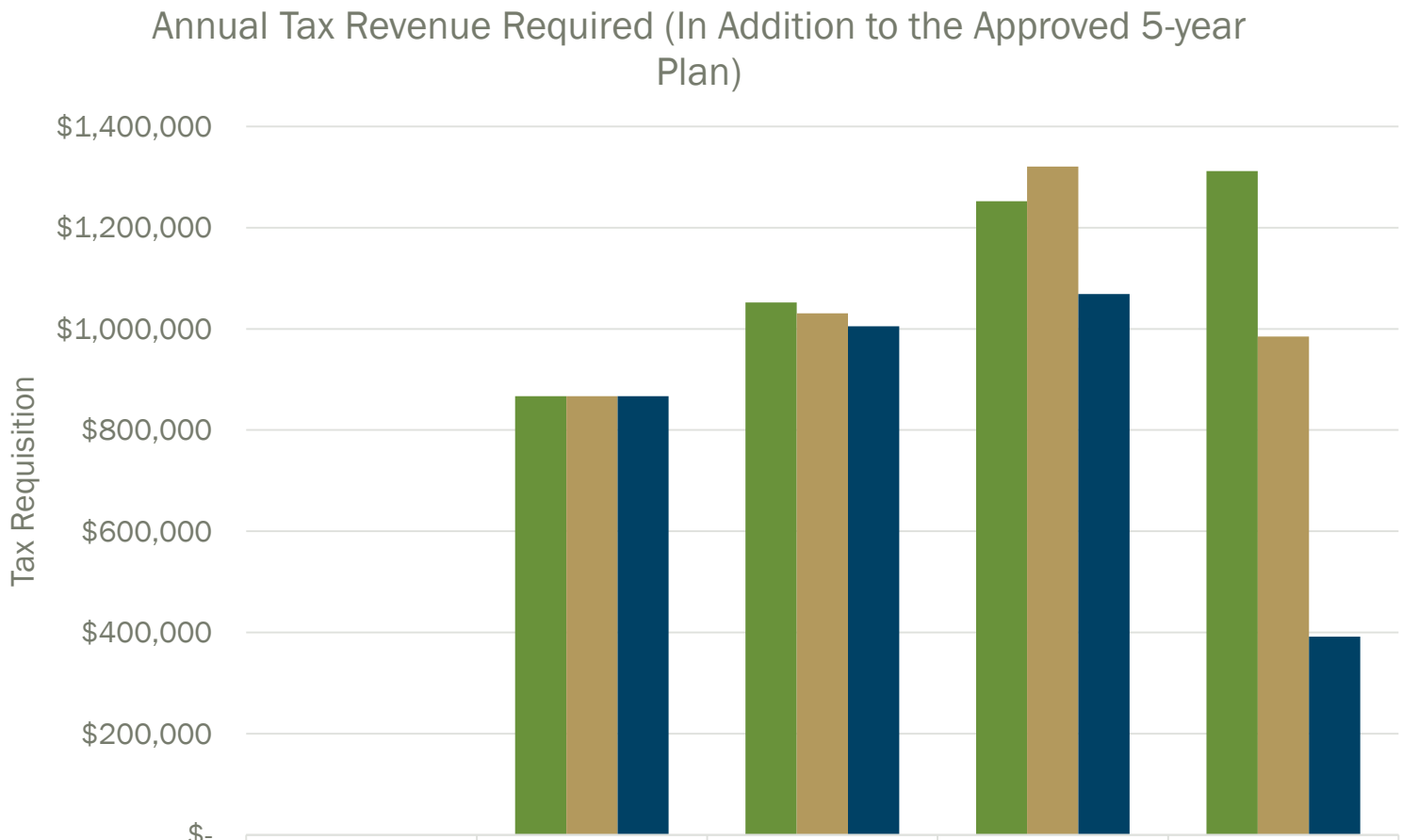
Potential Impact on Funding Gap

Annual Tax Requisition Impact



	2018	2019	2020	2021	2022
Scenario 1	$-	$867,000	$1,052,000	$1,252,000	$1,312,000
Scenario 2	$-	$867,000	$1,030,626	$1,320,808	$984,579
Scenario 3	$-	$867,000	$1,004,900	$1,069,127	$391,768

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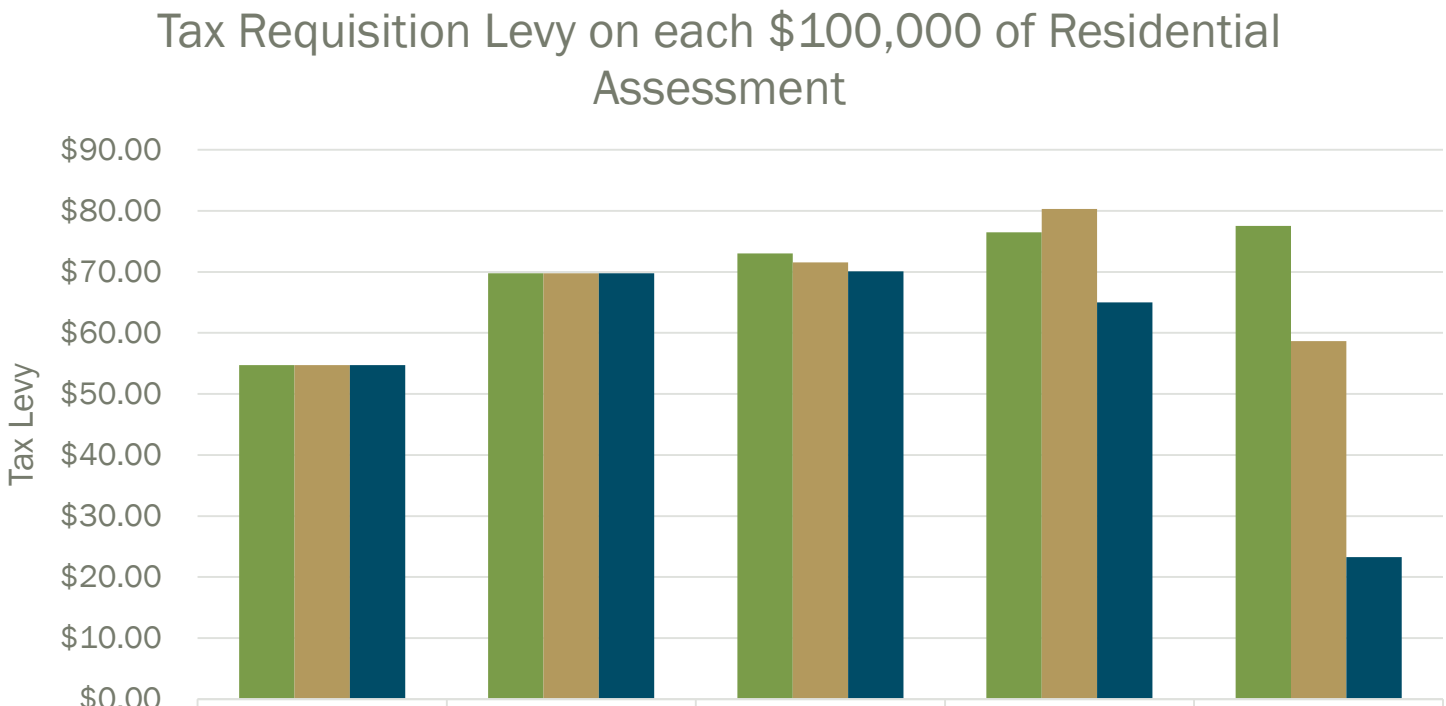
Annual Tax Requisition Levy Impact



	2018	2019	2020	2021	2022
Scenario 1	$54.70	$69.80	$73.02	$76.50	$77.55
Scenario 2	$54.70	$69.80	$71.56	$80.33	$58.66
Scenario 3	$54.70	$69.80	$70.10	$65.03	$23.27

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Proposed Implementation Plan

Proposed Implementation 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).					■

TETRA TECH

REGIONAL DISTRICT OF BULKLEY NECHAKO

- Questions

REGIONAL DISTRICT OF BULKLEY-NECHAKO

MEMORANDUM

To: Chair Fisher and Waste Management Committee

From: Alex Eriksen, Director of Environmental Services

Date: May 12, 2022

Subject: Waste Characterization and Recycling Feedstock Inventory

RECOMMENDATION

1) That the Committee recommend to the Board to approve XCG as the consultant for conducting the Waste Characterization and Recycling Feedstock Inventory.
2) That the Committee recommend that the Board approve allocating $125,000 of Canada Community Building Fund monies (split evenly between electoral areas for a total of $17,858 per area) for the previously approved 2022 capital costs for the Knockholt Landfill development.
3) That the Committee recommend that the Board approve a withdrawal of $125,000 from the Federal Gas Tax Reserve.
4) That the Committee recommend that the Board approve allocating $125,000 from the approved 2022 Knockholt Landfill Development capital costs to the Waste Characterization and Recycling Feedstock Inventory.

BACKGROUND

The most recent RDBN Waste Characterization Study was completed in 2008. The 2018 Solid Waste Management Plan utilized a 2016 adjustment of the 2008 study, but no field audit was conducted. It is generally good practice to update waste composition statistics at least every 5 years, and the RDBN is overdue for a full field-based study.

On May 21, 2020, the Board moved the motion to re-allocate funds from the Northern Capital Planning Grant towards a region-wide Solid Waste Inventory and Feasibility Plan. The discussion included a preliminary quote from Tetra Tech Canada Inc. for a single 1-week sampling event, reporting and a recycling feedstock inventory for $25,000. In 2021, the RDBN purchased 2 covered buildings at a cost of $14,000 for the field sampling portion of this study.

Staff prepared and posted a Request for Proposals (RFP) in January 2022. The RFP included a detailed list of material categories to be characterized and clear explanation of the objectives of the feed stock inventory study.

Staff received only one (1) proposal by the March 4 deadline. Several consultants reached out to say that they did not have capacity to bid on this project for 2022.

PROPOSALS

The Edmonton Branch of XCG provided a proposal with sound scope, methodology and scheduling for the Waste Characterization and Feedstock Inventory. The total proposed cost for a four-event study is $111,518, broken down as follows:

Spring Sampling Event and Draft Reporting:	$25,495
Summer Sampling Event and Draft Reporting:	$23,338
Fall Sampling Even and Draft Reporting t:	$23,338
Winter Sampling Event and Draft Reporting:	$23,338
Project Management and Final Reporting:	$4,060
GST/PST:	$11,948
Total:	$111,518

The complete RFP and XCG proposal is available on request.

RDBN will assist the consultant by providing covered buildings, roll-off bins and space for the study. Staff would like to allocate a contingency $13,482 toward this project for a total project cost of **$125,000**.

The RDBN can choose the number and timing of field sampling events to suit the agreed upon objectives and available funds. For the purpose of having a highly detailed and accurate Recycling Feedstock Inventory that will be of greatest value to wider community and circular economy objective of the RDBN, staff recommends conducting four sampling events at a total cost of $125,000.

OPTION B

As an alternative to the recommendation, the Committee could recommend that the Board utilize $50,000 from the Environmental Services consulting budget and $75,000 from Northern Capital Planning Grant for Area A that has been dedicated to a "Solid Waste Inventory Feasibility business Plan". This option would exhaust the Environmental Services consulting budget for Engineering plans or similar consulting work planned for this year. This option would also see one Electoral Area contributing most of the funding for a regional wide project.

OPTION C

The Committee can have further deliberations in regard to the various funding options available.

CLOSURE

The Waste Characterization and Recycling Feedstock Inventory study is important for the RDBN to understand how our region generates waste and to help determine the feasibility of local recycling initiatives to support circular economy. An inclusive study as recommended above is costly, but will provide very valuable data to help the RDBN make informed decisions when planning for the future.

Respectfully Submitted,

Alex Eriksen
Director of Environmental Services

Attachments:
None – documents upon request