
CENTRAL REGIONAL WASTE BOARD

Special Audit

SEPTEMBER 30, 2017

RICHARD POWER, FCPA, FCA

Table of Contents

Executive Summary	i
Introduction	1
Purpose of Audit	1
Appointment	1
Scope of Work	1
Review of Fee Increases and Budgets	1
Procedures and Controls for In-bound Waste Haulers	2
Background	3
Richard Power, FCPA, FCA, Engagement Partner	4
Review of Fee Increases and Budgets	5
Financial Well-Being	6
Tipping fee	8
Western Waste Management (WRSB)	10
Material Recycling Facility	11
CRSB Costs verses Eastern Regional Services Board	12
Robin Hood Bay Operations	14
Conclusions	14
Recommendations	15
Procedures and Controls for In-bound Waste Haulers	17
System Processes	17
Systematic Controls	18
Testing Controls	19
Management Load Review	20
Conclusions and Recommendations	21

List of Tables

Table 1 - Tipping fee by year	6
Table 2 - Tonnage & Curbside Collection Cost	7
Table 3 - Tipping Fee Calculation	8
Table 4 - Tipping Fee Breakdown	9
Table 5 - Tipping fee Impact of WRSB	10
Table 6 - Transfer Station Cost	13
Table 7 - Robin Hood Bay Tipping Fee Breakdown - Estimated	14
Table 8 - Risks and Controls	18

Executive Summary

The Minister of Municipal Affairs under the Regional Service Board Act called for a special audit.

The Minister directed Central Regional Services Board (CRSB) to conduct a special audit based on the concerns expressed by commercial and communities in the Central Region related to transparency and financial stability. The special audit covered the following areas:

- Review of Fee Increases and Budgets
- Procedures and Controls for In-bound Waste Haulers

The following conclusions and recommendations are made:

1. CRSB Board and management informed the municipalities in the Central that the cost per household for disposal would be \$100 per tonne per year. No municipality has reached that threshold after 5 years of operations.
2. Material Recycling Facility has capacity to take dry waste from Western, and other areas of the province. More dry volume will lower costs for waste disposal. The residential cost of waste management is less in the Central region than Eastern region.
3. Mandatory recycling has increased the diversion rate to 19.9% as of 2016 in Central in line with the Waste Management Strategy.
4. Increased waste volumes from the Western region will reduce the tipping fees.
5. Management provides adequate oversight and there is sufficient monitoring of operations to minimize the risk of fraudulent activity.
6. The Province should require all regional service boards to have mandatory recycling program in place in order to reach its 50% diversion rate outlined in the Waste Management Strategy.
7. The Province should require all regions operate under the Waste Management Strategy.
8. The Province should amend legislation to avoid any conflict between the Municipality Act and Regional Service Board Act regarding curbside collection.

-
9. CRSB should consider increasing the non-compliance fee from its current rate of \$70 per tonne.
 10. CRSB should consider implementing a mechanical gate or barricade of sorts on its scales entrance.
 11. CRSB should consider a policy of not allowing customers access to the waste management site or a transfer station if they do not have their RFID card with them.
 12. The GateHawk system should be modified to provide more information to the scale house attendant when a customer is scanning entry into the site.
 13. CRSB should consider hiring a compliance officer to ensure all commercial customers are adhering to waste disposal guidelines and sorting recyclables.
 14. Word Office staff provide support to CRSB for the GateHawk and accounting systems. It is recommended that bonding insurance be required under their contract.

Overall, based on the special audit, we believe that the Board of Directors and Management, by implementing the Waste Management Strategy, has set an appropriate tipping fee rate of \$136 per tonne to ensure the financial viability of CRSB. In addition, the controls and management oversight at the disposal sites are effective in minimizing the risk of fraudulent activity

Introduction

Purpose of Audit

The purpose of the audit is to respond to concerns expressed by commercial and communities in the Central Region related to transparency and financial stability with Central Regional Services Board (CRSB). The Board is sometimes referred to a Central Newfoundland Regional Waste Authority, but for the purposes of this report the Board is referenced as Central Regional Services Board or CRSB.

Appointment

Under Section 34(3) of the Regional Service Board Act, 2012, The Minister of Municipal Affairs may appoint an auditor to conduct a special audit. The Minister has delegated the responsibility to the Board who have appointed my firm, Richard Power, FCPA, FCA to conduct the audit.

Scope of Work

The scope of work agreed on would focus on the following two areas that concerned the Minister:

- Review of Fee Increases and Budgets
- Procedures and Controls for In-bound Waste Haulers

Review of Fee Increases and Budgets

Under the Regional Service Board Act, the Board is required to submit to Municipal Affairs an annual balanced budget. The audit will include a review of the costs of providing the service as required under the Certificate of Operations issued by the Department of Environment. The audit will review the volumes of waste and the revenues associated with each stream to determine whether the appropriate rates are applied.

The Western Waste Management Authority (WRWM) has made the decision to move its waste to CRSB's facilities. CBCL Ltd, the consultant firm for WRWM have identified the volume of waste that will be transported to CRSB for disposal at the engineered landfill. CRSB have given preliminary fees to WRWM for the disposal of their waste. This audit will consider the revenues from that source in terms of the financial stability of CRSB.

Overall, the audit will review the operational processes and financial models of the waste management system excluding waste collection at CRSB. The audit will assess system efficiencies and identified risks to the financial well-being of the Regional Service Board.

Procedures and Controls for In-bound Waste Haulers

Commercial waste is generally transported to CRSB's facility by private haulers. When CRSB commenced operation in 2012 there was one company (commercial waste hauler) that had the majority of business in Central NL. That company was sold and shortly after a new company (commercial waste hauler) emerged to compete with that company. The new company started competing for the same business, prices dropped and accusations were made by the former company that the Board was giving preferential treatment to the new start-up company. The waste hauler advised the Department Municipal Affairs that CRSB was giving preferential treatment to the new start-up company.

All customers of CRSB are issued Radio Frequency Identification (RFID) cards to access the Regional site and the seven transfer stations. RFID cards identify the customer and the customer chooses the appropriate waste stream from a screen that appears when the card is shown at the weigh scales. CRSB has a World Office accounting system that then automatically bills the customers for the waste they bring to the waste facilities. This audit will review the procedures in place to assure that the customers are invoiced the correct fee for the waste loads delivered to the site. The audit will make recommendations on ways to improve this system. The audit will identify risks of internal fraudulent activity based on established process.

The Minister of Municipal Affairs used his authority under the Regional Service Board Act to call for a special audit. The Minister directed the board to conduct a special audit as described in the scope of work.

Background

The Central Regional Service Board (CRSB) was established in 2008 and is governed under the Provincial Regional Service Boards Act 2012. The Regional Service Board Act outlines eligibility of the Board members and the duration of the term served by those members. Currently under Central Regional Service Board's governance structure there are 12 Board members plus the Chairperson. Following the municipal election in September 2017 there will be 12 Board Members including the Chairperson, who will be elected from the respecting governing bodies outlined in the Act.

CRSB operates a regional solid waste disposal site at Norris Arm and seven local waste management facilities throughout Central NL. It is authorized to set and charge user fees to municipal authorities, local service districts, unincorporated areas, benefited by a regional facility and other entities as required. The Board currently serves approximately 103 Communities, 70,000 residents and 3000 businesses. As well, CRSB expanded its operation due to representation from the communities they serve into collection of waste. CRSB is now collecting waste from 60 communities.

CRSB commenced accepting waste from residents and businesses on February 6, 2012. Since that time, the cost per tonne for waste disposal has risen from \$117 per tonne in 2012 to \$136 per tonne in 2017.

Richard Power, FCPA, FCA, Engagement Partner

The firm of Richard Power, FCPA, FCA is a full service public accounting practice firm that services the business community of Clarendville and surrounding area. The firm's audit and accounting practice currently has 6 employees. Professional services currently provided include audit and accounting services, forensic investigative services, personal and corporate income tax consulting, accounting system design, management consulting and in-house computerized accounting.

The firm of Richard Power, FCPA, FCA has had a variety of experience with the public sector and PSAB accounting standards. The firm is currently the external auditor for 20 municipalities and several non-profit organizations including a marina, private college, community development corporation and charity.

The firm is the external auditor for the Central Regional Waste Authority.

Review of Fee Increases and Budgets

CRSB adopted the Provincial Waste Strategy (2002) as approved by government and is implementing and developing a waste management system that meets the goals of the strategy. The provincial strategy outlined 5 goals. Those goals were (are) the following:

1. divert 50 % of the materials currently going to disposal by 2010;
2. reduce the number of waste disposal sites by 80 percent;
3. eliminate open burning at disposal sites by 2005 and phase out the use of incinerators by 2008;
4. phase out use of unlined landfill sites by 2010; and
5. full province-wide modern waste management by 2010.

While government took the responsibility for closing and reducing landfills that existed in 2002, the Regional Services Board were charged with the responsibility to develop a modern waste management and to divert 50% of the materials going into landfills. It is noted that CRSB was funded by the Province to complete the close out of 42 sites in Central NL. This was completed in 2013. The Waste Management Strategy set the geographical boundaries for the regions which were to become waste management authorities.

Initial plans were to construct a lined landfill in the first phase, followed by a compost facility, with the material recovery facility coming last. During construction of the landfill, discussions commenced with the Western Region on moving its waste to Norris Arm. Knowing that a material recovery facility could accommodate additional waste by increasing hours of operation while compost facility had to be built based on volume of organic waste, it was decided to advance the construction of material recovery facility and hold off on the compost facility until a firm decision was made Western Regional Services Board (WRSB). Currently at Norris Arm facility, there is a 2nd generation lined landfill with a Leachate Treatment System that treats all effluent leaving the landfill that meets Provincial and Federal guidelines before being released into the environment. This system is the only 2nd generation lined landfill with full leachate treatment center in the Province. The system has liners in the ground which collects any leachate and directs it to a leachate treatment plant. The plant then treats the leachate before it is released to the environment. Leachate monitoring test is reported monthly.

There is also a public drop off area where residents can dispose of their e-waste, paint products and household hazardous waste. The site has a Material Recovery Facility (MRF) where all recyclable products are sorted and prepared for market. The site also has a metal laydown area and a Construction and Demolition area. This allows for all metals and wood products to be diverted from the landfill. In addition to Norris Arm, CRSB has developed 7 transfer stations in the region.

The Province currently has a hold on construction of Compost Facilities. Once the compost facilities are built, CRSB will have a full modern waste management system in place, allowing them to reach the 50% diversion rate as identified in the Waste Management Strategy. In 2016, CRSB was able to divert 19.9% of the waste it received. The diversion rate for CRSB does not include any MMSB data (deposit containers). Provincially, as of March 2014, the diversion rate was 25.15% including MMSB data.

Financial Well-Being

With respect to financial well-being, CRSB maintains financial records and costing to monitor expenditures. The Board sets the tipping fee for disposal such that it has a balance budget. The current in 2017 rate is \$136 per tonne. This rate has increased since 2012 as summarized in the following Table 1:

Table 1 - Tipping fee by year

Year	Tipping Fee	% Increase Annually
2012	\$117	
2013	\$117	0.00%
2014	\$117	0.00%
2015	\$122	4.27%
2016	\$132	8.20%
2017	\$136	3.03%

From the above table, there has been significant increases to the tipping rate over the last 3 years. The tipping fee has increased by 16.24% since 2012, an average of 2.7% over 6 years. The Consumer Price Index for 2016 in NL was 4.7%.

In the planning for waste management strategy in 2004, Bae NewPlan (CRSB's consultant) identified the cost of operating a modern waste management facility would be \$104 per tonne based on the estimated volumes generated by the residents in the Central region. Due to escalation in fuel costs in 2005/2006, the cost per tonne was recalculated by Bae NewPlan and increased to \$117 per tonne. The \$117 per tonne was communicated through consultation in 2008 and 2009 with CRSB's stakeholders as the cost they would incur with the introduction of the new waste management system. Municipalities were advised through those consultations that an average household generated just less than a tonne of waste per year. At \$117 per tonne it was estimated that with this new system, the cost to municipalities could be \$100 per household per year. In 2011, Towns were advised to budget \$100 per household per year for waste management as the system was commencing operations in 2012. (Appendix A)

A sample of the towns served by CRSB from one of the large towns to some of the smaller towns show the 2016 cost per household for disposal. No town in Central has yet reached the threshold of \$100 per household for disposal as communicated to them prior to the startup of the system. Table 2 below also provides the curbside collection cost for those towns that CRSB curbside collection.

Table 2 - Tonnage & Curbside Collection Cost

Towns	Total Tip Fee	Number of HH	Cost per HH for disposal	Curbside collection per HH	Total cost per year per HH
Gander	\$ 371,014	3999	\$92.78	\$79.00	171.78
Twillingate	\$ 70,039	1215	\$57.65	\$79.00	136.65
Gambo	\$ 55,205	850	\$64.95	\$79.00	143.95
Glenwood	\$ 29,694	360	\$82.48	\$79.00	161.48
Glovertown	\$ 65,651	875	\$75.03	\$79.00	154.03
Indian Bay	\$ 5,108	65	\$78.58	\$79.00	157.58
Centre/Wareham/Trinity	\$ 27,672	555	\$49.86	\$79.00	128.86
Point Leamington	\$ 16,749	310	\$54.03	\$79.00	133.03
Leading Ticks	\$ 12,596	196	\$64.13	\$79.00	143.13
Fogo	\$ 72,980	1244	\$58.65	\$79.00	137.67

HH - Household

Table based on 2016 data and costs

CRSB is often compared with Eastern Regional Service Board (ERSB) because of the much lower tipping fee at Robin Hood Bay. Municipalities in Eastern NL are paying \$180 per household verses towns in Central NL.

Tipping fee

The tipping fee is the basis for balancing the budget for the Board. The budget process documents and calculates of operational costs of the disposal activities excluding the curbside collection stream. The disposal activities include the operational costs of operating and maintaining the Norris Arm landfill, 7 regional transfer stations and the Materials Recyclable Facility (MRF). In addition to the operational cost, the Board adds a capital reserve which serves to replace all landfill equipment. Therefore, the basis of the tipping fee is based on the direct operational costs of disposal activities plus the capital reserve allocation. Table 3 summarizes and break down those portions of the tipping fees.

Table 3 - Tipping Fee Calculation

	2017	2016		2015		2014	
	Budget	Budget	Actual	Budget	Actual	Budget	Actual
Disposal operational cost	4,678,476	4,917,954	4,757,457	4,917,954	4,398,220	3,512,862	3,321,880
Capital reserve allocation	425,564	989,046	296,505	989,046	248,262	1,098,938	1,141,165
	5,104,040	5,907,000	5,053,962	5,907,000	4,646,482	4,611,800	4,463,045
Less: Other disposal revenue	(656,840)	(1,075,800)	(342,815)	(1,075,800)	(120,134)	(414,000)	(138,413)
	4,447,200	4,831,200	4,711,147	4,831,200	4,526,348	4,197,800	4,324,632
Waste by tonnes	32,700	36,600	33,646	36,600	32,668	34,500	34,407
Tipping fee per tonne	\$ 136.00	\$ 132.00	\$ 140.02	\$ 132.00	\$ 138.56	\$ 121.68	\$ 125.69

The tipping fees is a function of tonnage disposed at the CRSB. This amount has been 33,000 tonnes per year on average. The 2017 budget uses 32,700 tonnes at \$136 per to budget expected revenues. As the amount of waste decreases, the impact to the tipping rate is an increase in order to maintain revenue to operate.

Table 3 shows that the actual tipping fees should have been higher than the amount charged based on budget. CRSB has limited the increase to the tipping fee by reducing the contribution to the capital reserve.

A further breakdown of costs and the impact of various components is shown in Table 4 – Tipping Fee Breakdown. This table shows the impact the MRF has had on operations and the fluctuations in recycling rates. Since the MRF has come into operation in March 2015, the disposal costs have gone from \$92.52 per tonne to \$131.21 per tonne before any allocation of a capital reserve. The MRF has impacted the financial stability of the disposal program. It has been difficult to continue to pass along increased costs to the commercial haulers, municipalities and residents of the central region.

Table 4 - Tipping Fee Breakdown

	2016		2015		2014	
	Actual	Cost per tonne	Actual	Cost per tonne	Actual	Cost per tonne
Disposal operational cost	3,282,104	97.55	3,377,557	103.39	3,183,467	92.52
Material recycling facility	1,132,538	33.66	900,529	27.57		-
	4,414,642	131.21	4,278,086	130.96	3,183,467	92.52
Capital reserve allocation	296,505	8.81	248,262	7.60	1,141,165	33.17
	4,711,147	140.02	4,526,348	138.56	4,324,632	125.69
Waste by tonnes	33,646		32,668		34,407	

The above table is based on actual cost and not budgeted costs. The following notes are made with respect to Table 4:

- The Material recycling facility did not start to operate until March 2015.
- CRSB borrowed \$3 Million to finance construction of the MRF and interest costs are included.
- The capital reserve of \$ 1,141,165 was not made in 2015 or 2016. Only partial amounts were put into reserves for equipment and landfill development.

Since 2014, operational costs have increased from \$3,183,467 to \$3,282,104 due to inflation and union certification of staff. The operational costs are minimized such that the transfer stations are staffed by only one person and the IT/accounting system is advanced where invoicing for the tipping fees are highly automated. During the current year, CRSB started

transporting all the waste from the transfer station to Norris Arm versus contracting out. The cost analysis thus far shows savings of 35% on transportation costs.

The key note from Table 3 is that the actual cost per tonne required to maintain financial viability was higher than the rate set in these years. The Board is conscious of the impact of increasing the tipping fee rate to commercial haulers and municipalities. The major impact on the tipping fee is the volume. The capital infrastructure invested is high and the tipping fee is based on the cost divided by the volume.

Western Waste Management (WRSB)

WRSB have decided that to landfill its waste with CRSB in Norris Arm. This will have a positive impact on the tipping fee as the increased volume will lower the cost. It is expected will be \$ 75 as outline in Table 5 for WRSB. WRSB has estimated they will be sending 29,252 tonnes of waste for the landfill. The positive impact to CRSB will be additional revenue of tipping fees of \$ 2,193,900 which help offset operating cost for CRSB. The estimated impact per tonne will be \$14.28 which can be used to reduce or maintain the current tipping fee.

Table 5 - Tipping fee Impact of WRSB

<i>Based on 2016 Actual costs</i>			
Expected additional reveune			
	Tipping fee of \$75 @ 29,252 tonnes		2,193,900
Less Additional operating costs			
	Capital reserve		(913,491)
			(800,000)
	<i>Net Benefit</i>	A	480,409
	<i>Net benefit per tonne</i>	A/B	14.28
Waste by tonnes			
	CRSB	B	33,646

When WRSB began exploring the idea of moving its waste into Central, studies were done

on transportation cost and on the carbon footprint. With a positive outcome on costs and the carbon footprint, it was decided that their facilities would not include an engineered landfill or material recovery facility, but would transport their waste to Central. They are currently in the process of constructing transfer stations to move their waste to Central, commencing in mid-2018. CRSB will benefit from the additional volumes of waste in both the dry stream and the waste going to landfill. The contract with HRI for the MRF operations has a sliding scale based on volume. The volume from Western will move the scale from 300- 500 tonnes into 700- 900 tonnes per month which results in a reduction of \$92 per tonne. CRSB, in 2016, had approximately 4,000 tonnes of material sorted at the MRF. Net savings with Western waste would be approximately \$370,000.

With allocation for capital reserves for future landfill cells and for equipment replacement plus some incremental operational cost, CRSB still expects to surplus approximately \$1 million to assist with its operations. Therefore, the net gain with non-host regional would be approximately \$1.37 million.

Material Recycling Facility

Prior to opening the MRF, CRSB went out with a Request for Proposal (RFP) to find an operator that was qualified in the operations of material recycling facilities and experienced in the marketing of recyclable products. Through the process Hebert's Recycling Inc (HRI) was chosen as the operator and a contract was signed with Herbert's Recycling to operate the facility and market the material. Herbert's Recycling Inc contract requires them to cover all operational costs of the facility, including labor. CRSB pays HRI on a per tonne basis for the recyclable products separated at the facility. CRSB and HRI share the revenue from the recyclable products where CRSB get 80% and HRI the remaining 20%.

The MRF at Norris Arm opened in March 2015. In 2016 the Board process over 4300 tonnes of recycling materials. There were 2,820 tonnes from the blue bag program plus another 1,370 from cardboard. The curbside collection implemented at CRSB is two streams; one stream for recyclables and the other for landfill waste. The recycling is contracted out to Hebert who operates the MRF. They in turn charge back CRSB based on a volume of recycles processed.

The cost per tonne for the operation of the Material Recovery Facility at Robin Hood Bay and

CRSB Norris Arm have a similar contract in that the operation covers all of the operational cost with the revenue from recyclable split on and 80/20 basis.

The Norris Arm facility is designed to handle a co-mingled dry waste stream of containers of all kinds plus paper and cardboard which goes into a blue bag. A two- stream collection truck collects dry waste on a weekly basis. The blue bag material is separated at the facility.

The Robin Hood Bay facility has two lines; one for containers and one for paper and cardboard. This requires additional sorting in each household as well as an additional pass by the collection truck every second week to collect the waste. Every second week collection adds 50% cost to the curbside collection for Towns under Eastern Regional Service Board. Even though the household in Eastern has an extra sort to give a better feedstock to its MRF the cost per tonne when we compare equal volumes are higher than Central. When Westerns waste comes to Central the dry stream of recyclable products will be in excess of 700 tonnes per month.

The cost per tonne for Central and Western will be \$194.78 versus \$213.78 at Robin Hood Bay. Eastern Region must have a second pass at curbside to collect their recyclables. If Central operated on the same basis the collection cost would go up by \$1.2 million.

The MRF generates revenue but is subject to fluctuation based on market prices. In 2016, budget revenue from other disposal sources was \$1,075,800 but the actual achieved was only \$342,815. The variance from budget to actual is largely attributable to decline in recyclable materials.

CRSB Costs versus Eastern Regional Services Board

CRSB operates significantly different in philosophy than Eastern Regional Services Board (ERSB). CRSB shares the cost equally among all residents and businesses in Central. In Eastern, the distance from Robin Hood Bay landfill has a direct impact on transportation cost. For example, residents/businesses in Placentia, the Southern Shore or Old Perlican, have to travel long distances to dispose of waste, have a much higher transportation cost. In Clarendville where ERSB constructed a transfer station, the tipping fee is \$87 per tonne. The tipping fee may be lower but overall cost is the same or higher than in the Central region.

CRSB made the decision to construct and operate transfer stations in outlying areas to make it convenient and fair to those businesses and communities who contribute volumes of waste to the system. The cost of operating those transfer stations are shown in the Table 6:

Table 6 - Transfer Station Cost

Transfer Station	Operations	Transportation	Total
Buchans Junction	\$ 82,019	\$ 23,894	\$ 105,914
Point Leamington	\$ 121,278	\$ 55,246	\$ 176,524
Gander Bay	\$ 125,667	\$ 37,771	\$ 163,438
Fogo Island	\$ 100,964	\$ 40,467	\$ 141,432
NWI/Twillingate	\$ 145,534	\$ 57,478	\$ 203,012
Terra Nova	\$ 111,606	\$ 84,614	\$ 196,220
Indian Bay	\$ 108,822	\$ 61,031	\$ 169,853

Total costs \$ 1,156,392

The cost of operating those transfer stations, as shown in Table 6, affects the tipping fee by approximately \$23 per tonne. If the businesses and residents in the outlying areas were to cover those costs, it would no doubt prohibit them from participation in the waste management strategy. Those transfer stations therefore allow all of the region to participate; have the approximate same price for all; lower the carbon footprint for moving this waste since it is done by 53-foot trailers, and makes it convenient for the residents to participate in all of the other programs, such as e-waste, paint, household hazardous waste, construction and demolition, metals, etc.

One of the major contributing factors to the difference in cost per tonne for Central and Eastern is the engineered landfill. CRSB was required to construct an engineered landfill with full leachate treatment system. The landfill consists of three layers of liners in the ground with a leachate collection to prevent leachate from going into the environment.

Generally, every five years CRSB will be constructing a new cell to accommodate the waste at a cost of approximately \$4 million dollars. This cost is built into the tipping fee.

Robin Hood Bay was permitted to use its existing landfill which also do not have liners or require the additional \$4 million cost every five years. On a per tonne basis that equates to

\$25.

Robin Hood Bay Operations

The tipping fee at Robin Hood Bay is \$67 per tonne. It is based on the same formula as in CRSB. The operating costs of the Robin Hood Bay landfill operations, MRF plus the capital reserve of \$1,250,000 are shown in Table 7 and are estimated based on discussions with Robin Hood staff (the cost information was not confirmed by Robin Bay staff although it was asked to be confirmed). The main difference between CRSB and Robin Hood Bay is the volume that is processed or disposed into the landfill. The estimated amount of volume is 225,000 tonnes per year.

Table 7 - Robin Hood Bay Tipping Fee Breakdown - Estimated

		2016		
		Actual	Cost per tonne	
Disposal operational cost		12,000,000	53.33	
Material recycling facility		2,000,000	8.89	
		14,000,000	62.22	
Capital reserve allocation		1,250,000	5.56	
		15,250,000	67.78	
Waste by tonnes		225,000		

Conclusions

The following conclusions are based on the Review of Fee Increases and Budgets

1. CRSB Board and management informed the municipalities prior to 2012 start up, that the cost per household would be \$100 per tonne per year, no municipality has reached that threshold after 5 years of operations. See appendix A.
2. Material Recycling Facility has capacity to take dry waste from Western, and other areas of the province. The single stream of recycling makes it more convenient for

household residents which increases the diversion rate. The residential cost of waste management is less in the Central region than Eastern region.

3. Mandatory recycling has produced the results expected by Waste Management Strategy. It does bring challenges to the commercial side, in that they are forced to separate which means additional cost for dumpsters. When comparing cost to Eastern region, transportation and dumpster cost is higher since, business can opt to go with one dumpster on the Avalon. The \$30 per tonne for cardboard assists some with costs but Central rates are still higher. However, if you were to consider the cost of moving waste in the outlying areas in Eastern region then this cost, because of distance, is higher. Businesses close to the landfill are the beneficiary of low tipping fees and low transportation cost. The transfer stations concept introduced in Central do favor outlying areas in that the cost of those transfer stations are borne by all of the customers of CRSB.
4. Increased volumes will help to reduce the tipping fees in Central. Western regions and other regional waste will more than double the current volumes going into Central. Due to the sliding scale with the MRF operations, the additional waste will reduce CRSB's cost per tonne. The estimated net gain is \$1.37 million per year. operational cost, outside of capital reserve will be minimal.

Recommendations

The following conclusions are based on the Review of Fee Increases and Budgets:

1. The Province should require all regional service boards to have mandatory recycling program in place in order to reach its 50% diversion rate outlined in the Waste Management Strategy.
2. CRSB and municipalities in Central should pressure the Province to have all regions up and running under the Waste Management Strategy within the time frame outlined by the Province. This would increase the volumes into Central and make it more efficient.

3. Currently Curb Side collection is a responsibility in the Municipality Act and the Regional Service Board Act. The Province should amend the Municipality Act to avoid any conflict between the Municipality Act and Regional Service Board Act. If Regional Service Boards did curbside collection for all towns, the cost would be spread across the Region.
4. CRSB should consider increasing the non-compliance fee from its current rate of \$70 per tonne. At that rate, some businesses may be opting to pay the fee verses purchasing extra dumpsters required to separate its waste. The fee should be high enough to deter businesses from not separating.
5. CRSB should consider hiring a compliance officer to ensure all commercial customers are adhering to waste disposal guidelines and sorting recyclables.

Procedures and Controls for In-bound Waste Haulers

System Processes

CRSB utilizes a scale system with Radio Frequency Identification (RFID) for processing waste disposal transactions. Each customer of the facility whether personal or commercial in nature are issued a card with a unique identification number. When each customer visits the waste management facility or one of the transfer stations, they are to proceed directly onto the inbound scales and stop. At this point the Gatehawk system prompts the customer to wave their RFID card in front of the scanner two times. The first, is for the system to identify the customer by the identification number and ready their account, and the second wave is to select the type of waste being disposed. At this point the vehicle is weighed and the surveillance system automatically takes a photograph of the vehicle and load on the scale. Finally, the Gatehawk system will instruct the customer to proceed to the designated drop off area for their waste.

While the scale process is being completed by the customer, a scale house attendant is monitoring the activity of the customer from inside the scale house. When the customer drives onto the scale, a screen within the scale house notifies the attendant of the customer's identification and vehicle weight when they wave their RFID card the first time, and of their waste selection on the second wave. At the time of waste selection, the scale house attendant alerts the drop off area attendants by means of two-way radio that there is a customer headed into the site and has chosen this particular type of waste while on the scale. If the customer proceeds to an area other than for the waste they selected, the drop off area attendant will alert the scale house clerk so that the change can be made in World Office prior to the customer approaching the outbound scale. At the time of disposal, if an incorrect selection was made at the scale, the drop off area attendant will also take a picture of the load/waste dropped which will be forwarded to administration.

Upon completion of the customer dropping their waste, they are to proceed back toward the scale house and stop on the outbound scales. At this point, the customer is prompted to wave their RFID card to identify themselves, and are weighed. The net change in weight from entry to exit is considered the amount of waste dumped at the site, and they are automatically charged by the system. This invoice is created and sent automatically by way of e-mail.

Systematic Controls

The Gatehawk/World Office system has multiple controls in place to ensure that each customer is identified correctly and charged the appropriate amount for their waste drop off. Risks, the associated controls, and their implementation are outlined in the Table 8 below.

Table 8 - Risks and Controls

Risk	Controls	Control Implementation
Incorrect customer identification	RFID card issues to each customer with unique card number	<i>Each time a customer visits the waste facility or a transfer station they must scan their card to identify themselves before entering the facility.</i>
Incorrect selection of waste	Video surveillance and scale house attendant monitoring	<i>Each time a customer visits a facility, a photo of the vehicle and load is taken while the vehicle is on the scale to ensure their load matches with their waste selection. In addition, a scale house clerk is monitoring the selection from inside the scale house and alerting drop off area attendants of the type of waste selected to ensure that is indeed the type of waste the customer is dropping.</i>
Scale house attendant override	Attendant must provide explanation in World Office for the override before the change can be saved	<i>Each time the scale house attendant makes a change in the system, World Office requires commentary be entered as to the reason for the override prior to allowing the change, so that management can review the overrides to ensure they are legitimate in nature.</i>
Customer bypassing scale to enter facility	Video surveillance, scale house clerk monitoring and gated facilities.	<i>The various dumping areas of the facility as well as the scale house and transfer stations are under video surveillance. The live feed is available through World Office to be observed by management or scale house attendants. In addition, a scale house clerk is stationed at each set of scales in both the transfer stations and the Norris Arm site to ensure that no one enters the dumping area without driving onto the scale before and after their dumping. In addition, facilities are gated and when the site is closed, there is no access to the sites due to gates being closed and locked.</i>
Preferential treatment given to certain customers	Management oversight, drop off area attendant monitoring, and video surveillance.	<i>The system is automated in that the customer chooses the type of waste themselves, if an issue is noted then both the scale house attendant and the drop off area attendant would be aware of the error in selection and the appropriate change would be made. Override at the scale house can only be completed prior to the customer driving over the outbound scale. Once the driver leaves the site, only the administrative staff can edit the load. Any changes made by the scale house clerk is accompanied by an explanation for World Office to authorize saving of the change, as well as by video and picture surveillance to depict the customer's load. Any discrepancy noted by the administrative staff is further investigated.</i>

Testing Controls

On September 19, 2017, a visit was made to the Norris Arm site to observe operations at the scale house and monitor the implemented controls to determine whether they were being followed as well as effective. The scale house attendant was told that the observer was a new member of the World Office staff and was there just to observe to get a better understanding of how the system worked. Using this façade, the attendant was unaware her actions were being evaluated, and she was under no pressure to perform in her required manner or to exhibit the controls put in place.

While observing the scale house attendant, it was noted that she maintains three computer screens: one for reviewing load transactions as they complete and for reviewing surveillance camera feeds, another to show inbound customer information, and the third for viewing outbound customer information. As individuals cross either the inbound or outbound scale, the attendant is monitoring that screen to ensure that portion of the transactions is occurring correctly. During the period of observation on September 19, no exceptions were noted. The clerk was observing the screens constantly as customers passed over the scales.

To further support the scale house attendant's attentiveness to the screens, during the observation period, she did note that a customer on the inbound scale only waved their RFID card on the first prompt and then drove off the scale. The attendant quickly radioed the drop off area attendants to alert them that the customer did not complete the required steps at the scale and to ask them to return to the scale to complete prior to unloading their waste. The customer as expected returned to the scale and this time completed all steps to identify themselves and select the type of waste before proceeding to the appropriate offloading area. The controls outlined were followed by the scale house attendant in their entirety to ensure the customer was billed correctly.

In addition to controls pertaining to the scale house attendant, review was also completed of the security cameras at the Norris Arm site to ensure they were functional. There are cameras positioned at both the inbound and outbound scales as well as at the various drop off points in the facility. While completing the observation period, the scale house clerk brought up the live camera feeds on the screen to demonstrate their usage. She was able to watch a customer as

they approached a drop off area and unloaded their waste without any issues. This system appears to be functioning properly and serves its purpose well.

During the observation period, no exceptions were noted and no neglecting to utilize the implemented controls was noted. Both the drop off area attendants and the scale house attendant were in communication with each other, as well as there was a visit from the operations manager to the scale house and drop off locations during the visit. Monitoring appears to be in abundance by both attendants and management.

Management Load Review

Management at the administrative building in Norris Arm have access to live feeds of the various sites and transfer stations at any given time. This surveillance can be view in the main area of the administrative building on a regular basis, and is checked periodically by management daily. If any questionable behaviour is noted through these feeds, further investigation is taken. This provides the attendants with the assurance that their activity is being monitored and that they are expected to ethically perform their job within the allotted controls.

In addition to periodic monitoring of the live feeds, there are reports issued in World Office to management which show management all loads that have been modified or deleted. This report is utilized by management to monitor the override occurring in the scale houses to ensure each time such an event occurs there is evidence that the override was necessary. It is pertinent to note that scale house attendants can only modified loads prior to the customer driving over the outbound scale. Once the RFID card is scanned on exiting, any modification required must be forwarded to the administrative office to be processed by management. If modification is made prior to the customer's exit, an explanation must accompany the change for it to be saved. These explanations are reviewed when the report is retrieved periodically by management from World Office.

In addition to this monitoring by management, the operations manager visits the site periodically to ensure that operations are running correctly. During our visit to the site, the manager did make an appearance at the scale house as well as visit the drop off area attendants. This practice is a regular one to maintain the controls and to provide the

attendants with the necessary oversight to ensure no unwarranted activity occurs.

In the event that a customer crosses the scale, dumps and leaves after selecting the incorrect waste category without getting stopped, these instances are noted and also forwarded to administration. The Chief Administrative Officer, Manager of Operations, Manager of Finance, as well as additional members of the administrative team review these cases and determine whether a non-compliance fee is necessary and charged to the customer's account. There is management oversight throughout the disposal operation processes in their entirety.

Conclusions and Recommendations

Through our review and observation of the controls in place, it is believed that they are currently serving their purpose.

1. Management provides adequate oversight, there is sufficient monitoring of operations and the sites in terms of surveillance, and the various attendants are in constant contact with each other to ensure customers are offloading their waste in the appropriate areas and are being charged the appropriate rates. The risk of fraudulent activity is minimized.

Although the controls in place are considered sufficient, there are several recommendations which are believed could improve operations and prevent some of the management override from having to occur.

1. Customers are required to scan their RFID card twice while on the inbound scale. As noted during our observation period, this does not always occur which results in attendants having to reroute the customer back to the scale a second time. To prevent this from occurring, a mechanical gate or barricade of sorts could be implemented into the scales. Much like the lift gate noted at a parking garage, once the customer has fulfilled the necessary scale requirements, Gatehawk would lift the gate and allow the customer access to the site but not before.
2. Customers can gain access dump their waste if they have left their RFID card at home. They can approach the scale house, provide identification and the attendant will look up

their account and card number and manually input that the customer is visiting the site, at which point they proceed to the scales for weighing. There is some room for error in this practice, as there is a possible threat of wrong accounts being chosen. The sole purpose of Gatehawk is to provide an automated service to prevent such error from occurring. A recommendation for this is to only allow customers access to the waste management site or a transfer station if they have their RFID card with them to gain access.

3. It is recommended some modification of the information provided to the scale house attendant when a customer is scanning entry into the site. On the first scan, the customers information and weight is displayed on the attendant's monitor, however a brief second later this screen disappears and it only shows the waste option selection. The customer information and weight should remain, but the waste selection should be added to the screen upon the second scan of the RFID card. The attendant could very easily miss the customer information and weight which could be pertinent in the event that the customer proceeds off the scale without completing the second scan to select the type of waste.
4. Based on discussions with management, Word Office staff provide support to CRSB for the GateHawk and accounting systems. It is recommended that bonding insurance be required under their contract.

Appendix A _____

Letter in Municipalities - August 2, 2011



Central Newfoundland Waste Management
P. O. Box 254, Norris Arm, NL, A0G 3M0
Phone: 709 653 2900
Fax :709 653 2920
Web: www.cnwmc.com E-mail: Info@cnwmc.com

August 2, 2011

Dear Mayors, Councilors, Elected Officials and Senior Staff;

Last fall we advised you that we would not be commencing the regional waste management operations before October of 2011, therefore you would only be required to budget the disposal fee for last quarter of 2011. At the July 21, 2011 Central Service Board meeting the Board has extended the start-up of the regional system to January of 2012.

On July 11, we commenced collection of residential waste on Fogo and Change Islands and are transferring the waste to the Gander landfill until such a time we move into operations at the Regional site.

Currently we have all seven (7) LWMF (transfer stations) built and ready for operations with the exception of paving. All paving contracts are in the process of being awarded with the exception of Fogo Island, which due to no paving being done on the Island this year, will be delayed to next year.

At our regional site, the administration building, maintenance garage, public drop-off, scale house, and the engineered landfill are all completed. We have the paving contract awarded and the leachate treatment contract to be completed. The data management system contract is ongoing.

For us to go operational, we still require a small mechanical building for the leachate control system. The vaults for household hazard waste (HHW) for the regional site and seven (7) LWMF have gone for approval for tender. HHW vaults are pre-constructed; therefore the delivery time is fairly short. We are currently finalizing the tender for the heavy equipment required at the regional site and LWMF.

At our regional meetings we are constantly asked about curbside collection. Last September we commenced a pilot project on New World Island, which allowed us to identify the costs and as well the waste generated per household. When we commenced the operation of Fogo Island transfer station on July 11, 2011 we decided to introduce curbside collection, this will allow us to have a full-time employee on Fogo Island. In March of this year we met with the Minister of Municipal Affairs to discuss curbside collection and whether they would entertain funding the purchase of new split-stream trucks if the Central Regional service were to do the curbside collection on a regional basis. We were asked at that time to do a business plan for curbside collection. The business plan was submitted in June and we plan to discuss this further in the near future. The Board is supportive in providing curbside collection. We have asked the Minister for an answer prior to September or next budget cycle for municipal councils.

We will continue our consultations with the communities in our region. As well we have met with a number of industries and local Chambers of Commerce.

In summary we are planning to go into operation in January of 2012. The disposal fee for communities of \$117.00 per tonne over the weigh scales is still applicable with the estimated cost per household for disposal of \$100.00 per year. Other fees charged are outlined on the 2012 calendar. Keep in mind that we will not be source separating in 2012; therefore the waste going to the curb will be status quo. If we commence curbside collection in your community the fee that is proposed is at \$70.00 per household for 2011 and \$72.00 in 2012.

I appreciate your support in our endeavors of establishing a modern waste management system for our region. Information on our Board meetings is on our website at www.cnwmc.com. If you require information you can contact our office by calling 709 653-2900

Yours truly

Allan Scott
Chairperson
Central NL Waste Management