



Corporation of the City of Timmins

Costing Analysis for Transfer Station Recycling Activities

Final Report
January 4, 2016

Costing Analysis for Transfer Station Recycling Activities

Executive Summary

A. Introduction

Pursuant to the terms of our engagement letter dated November 26, 2015, KPMG LLP ('KPMG') has been retained by the Corporation of the City of Timmins (the 'City') and the Continuous Improvement Fund (CIF) to undertake a costing analysis of the City's solid waste recycling activities. Specifically to conduct an activity based costing examination of the City's transfer station operation to aid the City of Timmins in its efforts to determine opportunities for improved efficiency and, or cost savings.

This report outlines the results of our analysis, including potential options for consideration by the City with respect to alternative service arrangements for processing and, or collaboration with other municipalities at the existing transfer station.

B. Summary of waste management activities and reported costs

The City's solid waste activities include: landfill operations; residential curbside collection of garbage & recycling; depot services for garbage & recycling; and depot drop off services for small industrial commercial and institutional ('IC&I') customers.

During 2014, the City received in excess of 34,000 tonnes of combined garbage and recyclables. The majority of which was received directly at its depot sites from residents and IC&I operators. Of this amount, approximately 3,700 tonnes was captured through the curbside recycling program, resulting in a diversion rate of 10.9%.

Annual waste and recyclables collected and received (in tonnes)



Executive Summary

Excluding reserve and reserve fund contributions and the financial impacts associated with the City's liability for closure and post-closure maintenance costs relating to its landfill, the City incurred a total of \$2.8 million in expenses for solid waste management services. Based on the City's internal accounting system, the cost to manage recyclables post collection amounted to \$682,000 in 2014, the majority of which related to the transfer of materials into compactor bins and subsequent hauling and processing of the recyclables by external contractors (\$224,000 and \$350,000, respectively in 2014).

C. Potential cost reduction opportunities for consideration

While the City's internal accounting systems reported a total cost for recycling activities (excluding collection) of \$682,000 or approximately \$185 per tonne, the total cost of processing recyclable materials, after consideration of allocations for capital costs and certain corporate administration costs, has been calculated to be in the order of \$165.

Two potential options are available to the City with respect to reducing their per tonne costs.

The first option would be to open the transfer station facility as a regional hub for neighboring programs. Through this model, other municipalities would be charged a fee drop off their recyclables and have the City of Timmins pick up the responsibility for the hauling and processing of the materials. Through this model, the tipping fees paid would cover the transfer and hauling costs as well as contribute towards capital and administrative costs.

Our analysis indicates that a fee of \$165 per tonne would represent the preferred rate mechanism. The use of a per-tonne charge is intended to provide a linkage between the level of participation by municipalities and the associated costs, with municipalities that process more recyclables through the City paying more than municipalities with lower recyclable volumes. While our analysis of the City's costs indicates that some costs are fixed in nature (and as such would be incurred at the same level regardless of the level of recyclables processed), our analysis indicates that these represent a relatively minor percentage of total costs (less than 10%). As such, the benefits of a hybrid model that included both a fixed annual charge and a per-tonne variable fee were considered to be minor.

Costing Analysis for Transfer Station Recycling Activities

Executive Summary

The second option would be to seek and secure a local facility to process recyclables thereby eliminating the need to transfer the materials into compactor bins and haul them to Sudbury. If a suitable processor could be found within direct driving distance, the City of Timmins would be able to have their collection vehicles drive the recyclables to the processing facility directly thereby eliminating the need for transfer and long distance hauling.



Overview of the Study

Overview of the Study

A. Terms of reference

The City is investigating the potential to improve efficiency and reduce costs of its recycling program. As part of this initiative, the City has requested:

- An analysis of the cost of consolidating recyclable materials at the transfer station, broken down step by step, or activity by activity, including direct operating costs, indirect administrative costs and a reasonable allocation of capital costs; and
- Recommendations to reduce cost by improving site efficiency and, or suggestions for alternative consolidation and processing strategies

B. Scope of review

Our analysis is based on a review of the following:

- Information concerning the level of waste and recyclable materials managed by the City on an annual basis for the years 2011 to 2014;
- Financial reports concerning waste management costs incurred for the years 2011 to 2014, as well as budgeted costs for 2015;
- A summary of staffing levels and associated personnel costs (wages and benefits) for the City's Public Works department;
- A summary of City equipment used in waste management activities, including acquisition costs;

Overview of the Study

- Previously commissioned reports and studies relating to the City's waste management activities; and
- Discussions with, and information provided by:
 - Mr. Scott Tam, Environmental Compliance Coordinator, City of Timmins
 - Ms. Carrie Nash, Project Manager, WDO Continuous Improvement Fund

C. Restrictions

This report is based on information and documentation that was made available to KPMG at the date of this report. KPMG has not audited nor otherwise attempted to independently verify the information provided unless otherwise indicated. Should additional information be provided to KPMG after the issuance of this report, KPMG reserves the right (but will be under no obligation) to review this information and adjust its comments accordingly.

Pursuant to the terms of our engagement, it is understood and agreed that all decisions in connection with the implementation of advice and opportunities as provided by KPMG during the course of this engagement shall be the responsibility of, and made by, the City of Timmins. Accordingly, KPMG will assume no responsibility for any losses or expenses incurred by any party as a result of the reliance on our report.

This report includes or makes reference to future oriented financial information. Readers are cautioned that since these financial projections are based on assumptions regarding future events, actual results will vary from the information presented even if the hypotheses occur, and the variations may be material.

Comments in this report are not intended, nor should they be interpreted, to be legal advice or opinion.

KPMG has no present or contemplated interest in the City of Timmins nor are we an insider or associate of the City of Timmins or its management team. Our fees for this engagement are not contingent upon our findings or any other event. Accordingly, we believe we are independent of the City of Timmins and are acting objectively.



Overview of the City's Waste Management Activities

Costing Analysis for Transfer Station Recycling Activities

Overview of the City's Solid Waste Management Activities

The City currently operates five landfills – Deloro, German, Hydro Bay (Thornloe), Ice Chest (Evelyn) and Kamiskotia (Robb) – as well as the Tisdale transfer station. The City does not have a hazardous waste depot but does separate used oil and e-waste at the site of its Deloro landfill.

Curbside collection, which includes both garbage and recyclables, occurs on a five-day a week basis (Monday to Friday). The City has divided the service area for garbage collection into different beats, with four beats occurring Monday, Tuesday and Friday and five beats occurring on Wednesday and Thursday (resulting in 22 beats over the course of a week). Curbside collection is not provided by the City to ICI customers. Rather, ICI customers are required to enter into collection contracts with private sector providers, who will collect and deliver waste to the City's Deloro landfill.

City residents and ICI customers are able to deliver waste directly to the City's landfills, with tipping fees applying after the consideration of exemptions for residential customers. The City's landfill operating hours are as follows:

Landfill	Summer Hours		Winter Hours	
	Days per Week	Hours per Week	Days per Week	Hours per Week
Deloro	7	68.25	7	54.25
Tisdale Transfer Station	4	32.00	3	24.00
German	4	31.00	2	9.5
Robb	Open under lock and key		Closed	
Thornloe	Open under lock and key		Open under lock and key	
Evelyn	Open under lock and key		Closed	

In addition to its regular waste collection service, the City provides residents with a two week spring clean-up.

Overview of the City's Solid Waste Management Activities

B. Organizational structure and staffing

Responsibility for the City's solid waste management activities rests with the City's Public Works department, with a total of 13 employees directly involved in solid waste management activities:

- Waste supervisor
- Environmental compliance coordinator
- Lead hand
- Equipment operators (7)
- Landfill attendants (3)

In addition to employees directly assigned to waste management services, additional City employees from other functional units within the Public Works department will be periodically assigned to waste management activities, specifically curbside collection. As well, the City relies on services provided by external contractors, most notably:

- Timmins Disposal – curbside collection
- City of Greater Sudbury – single stream recyclable processing
- William Day Construction – hauling of single stream recyclables between Timmins and Sudbury

C. Level of activity

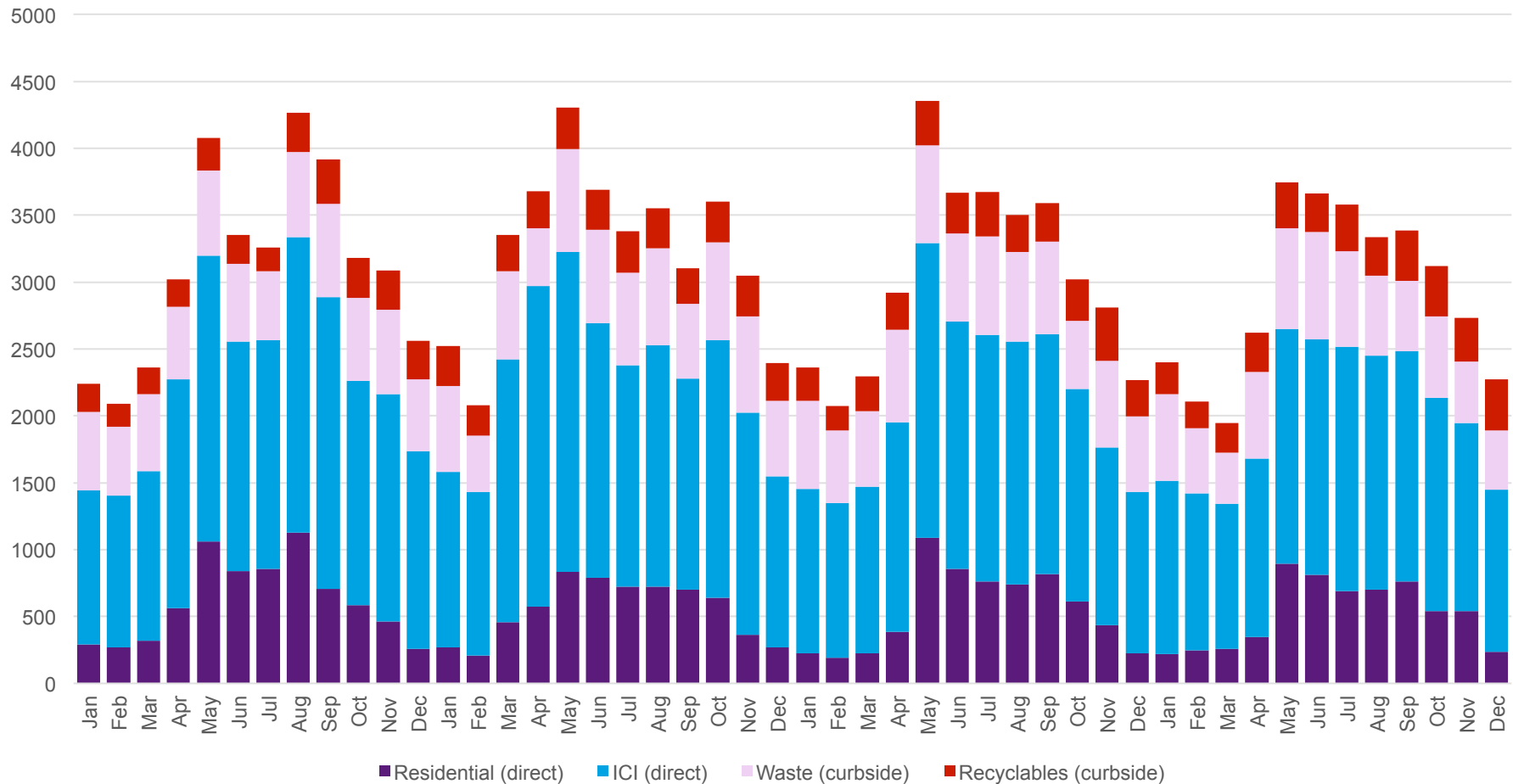
From 2011 to 2014, the City received a total of 147,565 tonnes of solid waste, representing an average of just under 37,000 tonnes per year. The majority of the City's waste (53%) is generated by ICI customers and delivered directly to the City's landfill, while curbside collection of garbage and recyclables accounts for 29% of total waste collected by the City.

From 2011 to 2014, the City managed 13,544 tonnes of recyclables, resulting in a four-year diversion rate of 9.2%.

Costing Analysis for Transfer Station Recycling Activities

Overview of the City's Solid Waste Management Activities

Solid waste under management (in tonnes) – 2011 to 2014



Overview of the City's Solid Waste Management Activities

	2011	2012	2013	2014	Total
Waste received:					
Curbside collection	7,082	7,622	7,663	7,075	29,442
Direct from residents	7,339	6,560	6,567	6,243	26,709
Direct from ICI	20,061	21,076	18,826	17,907	77,870
Total waste (non-recyclable)	34,482	35,258	33,056	31,225	134,021
Recyclables (curbside)	2,927	3,443	3,488	3,686	13,544
Total	37,409	38,701	36,544	34,911	147,565
Diversion rate	7.8%	8.9%	9.5%	10.6%	9.2%

D. Financial performance

For financial reporting purposes, the City allocates solid waste management costs between three cost centres:

- Collection (includes garbage and recyclables)
- Landfill operations
- Recycling processing

During 2014, the City spent a total of \$2.941 million on solid waste management, with the processing of recyclable materials (excluding curbside collection) amounting to \$833,000.

A summary of the City's solid waste expenditures for 2013 and 2014 (actual) and 2015 (budget) is included on the following page.



Costing Analysis for Transfer Station Recycling Activities

Overview of the City's Solid Waste Management Activities

	2013 Actual	2014 Actual	2015 Budget
Collection			
Wages and benefits	\$ 646,502	\$ 430,827	\$ 496,700
Contractor costs	\$ 138,782	\$ 167,550	\$ 95,400
Other expenses	\$ 395,357	\$ 381,382	\$ 416,400
Total collection costs	\$ 1,180,641	\$ 979,759	\$ 1,008,500
Landfill operations			
Wages and benefits	\$ 498,938	\$ 562,506	\$ 518,000
Contractor costs	\$ 54,349	\$ 116,262	\$ 133,000
Other expenses	\$ 305,379	\$ 449,931	\$ 854,400
Total landfill operating costs	\$ 858,666	\$ 1,128,699	\$ 1,505,400
Recycling costs			
Wages and benefits			
Contractor costs	\$ 675,613	\$ 630,439	\$ 555,000
Other expenses	\$ 155,939	\$ 202,378	\$ 243,000
Total recycling costs	\$ 831,552	\$ 832,817	\$ 798,000
Total solid waste costs	\$ 2,870,859	\$ 2,941,275	\$ 3,311,900



Transfer Station Financial Analysis

Transfer Station Financial Analysis

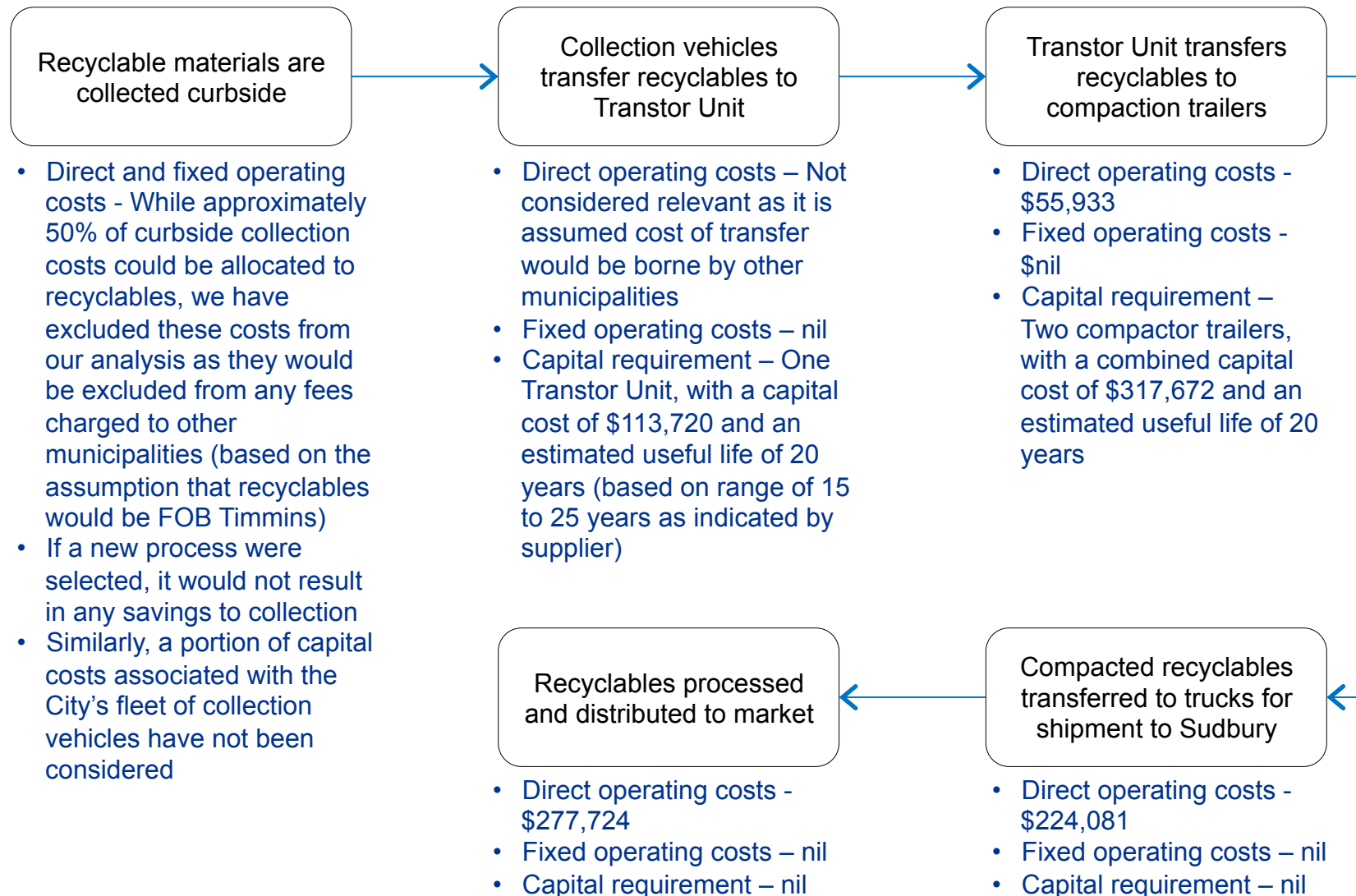
A. Basis of analysis

Our analysis of the cost of the City's recycling processing function is based on the following:

1. A business process map was prepared for the City's recycling processing function in order to provide an understanding of the nature of the activities and the associated costs;
2. Direct operating costs associated with the individual activities were quantified based on the City's 2014 actual costs;
3. Fixed operating costs associated with the individual activities were quantified based on the City's 2014 actual costs;
4. Capital equipment utilized by the City in connection with the individual activities was identified, with an estimated annual cost calculated based on acquisition cost and estimated useful lives of the equipment involved;
5. Corporate overhead costs were reviewed and where considered appropriate, an allocation of relevant costs was calculated based on the City's 2014 actual costs;
6. The results of the above analysis were consolidated to provide an overall cost of the transfer station operation, which was also expressed on a per tonne basis.

The results of our analysis are presented on the following pages.

Transfer Station Financial Analysis



Transfer Station Financial Analysis

Activity	Reference	Variable Costs	Fixed Costs	Capital Allocation	Total
Collection vehicles transfer recyclables to Transtor Unit	<i>Note 1</i>			\$5,686	\$5,686
Recyclables transferred to compaction trailers	<i>Note 2</i>	\$55,933		\$15,884	\$71,817
Compacted recyclables transported to Sudbury MRF		\$224,081			\$224,081
Recyclables processed at MRF and distributed to market		\$277,724			\$277,724
Software licensing fees			\$19,470		\$19,470
Allocated corporate costs	<i>Note 3</i>	\$11,000	\$500	\$500	\$12,000
Total		\$568,738	\$19,970	\$22,070	\$611,084
Total tonnage transfered		3,686	3,686	3,686	3,686
Cost per tonne		\$154.30	\$5.41	\$5.98	\$165.69

1. The capital allocation is calculated based on an estimated Transtor replacement cost of \$113,720 divided by a useful life of 20 years.
2. The capital allocation is calculated based on estimated compactor trailer replacement costs (2) of \$317,672 divided by a useful life of 20 years.
3. For the purposes of our analysis, we have included a 2% corporate allocation to compensate the City for costs associated with supervision, insurance, financial processing and other corporate support services.



Suggested Rate Mechanism for Participating Municipalities

Suggested Rate Mechanism for Participating Municipalities

Several alternatives exist for the sharing of costs incurred by the City with respect to the management of recyclables for other municipalities, including but not limited to:

- A fixed costs per-tonne received, which could either (i) remain fixed regardless of the level recyclables received; or (ii) decrease based on the achievement of certain threshold volumes, which would reflect the potential achievement of economies of scale due to higher levels of recyclables being processed
- A fixed periodic charge (e.g. monthly, annually); or
- A hybrid model that would combine a fixed periodic charge with a per-tonne charge.

In selecting a preferred cost sharing model, we suggest that the following attributes be reflected:

- **Fairness**, with costs allocated based on utilization of the system;
- **Consistency**, with communities that have similar circumstances being allocated the same proportion of costs;
- **Ease of administration and understanding**, avoiding the need for complex formulae or onerous record keeping; and
- **Sustainability**, with the cost sharing model encouraging diversion while at the same time providing sufficient funding to ensure that capital reinvestment requirements can be met.

As noted earlier in our report, we have assumed that participating municipalities would be required to bear the cost of transporting recyclables to the City's transfer station. As such, the consideration of which costs should be recovered through the suggested rate mechanism does not include these costs but rather attempts to compensate the City for costs incurred from the point of receipt of the recyclables through to processing at the MRF.

Suggested Rate Mechanism for Participating Municipalities

Our analysis indicates that the City does incur some fixed costs with respect to the transfer of recyclables (specifically with respect to software licensing and capital replacement of the Transtor Unit and compaction trailers); however, we note that these are relatively small with respect to the variable costs incurred by the City, which account for more than 90% of total costs incurred. While the incurrence of fixed costs could support the use of a hybrid model which would include a fixed period charge, we suggest that this could be problematic from a fairness perspective and the benefits to the City of recovering its fixed costs through this approach would likely be offset by resistance on the part of participating municipalities, resulting in reduced preference to utilize the City as a regional centre.

As a result of the above and other aspects of our analysis, we suggest that the City consider the use of per-tonne charge for recycling processing of \$165 per tonne. The City may also wish to consider:

- Providing some form of rebate to participating municipalities in the event that volumes of recyclables processed exceed the levels considered in the analysis, resulting in a lower average cost per tonne than anticipated. We consider this to be preferable to a fee structure that decreases as volumes increase as adjustments would be made based on actual volumes processed;
- Update the per-tonne fee on an annual basis so as to reflect cost increases and changes in the level of recyclables processed; and
- Consider alternative processing solutions to the Sudbury MRF, which could allow the City to realize lower net costs in the event that (i) transportation costs could be reduced (recognizing that a local MRF would not incur long distance hauling costs for shipping recyclables to its facility); and (ii) the City is able to negotiate some form of revenue share agreement, which currently does not exist under the terms of its contract with the Sudbury MRF.



kpmg.ca



© 2016 KPMG LLP, a Canadian limited liability partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative (“KPMG International”), a Swiss entity. All rights reserved. The KPMG name and logo are registered trademarks or trademarks of KPMG International.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavour to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.