

Continuous Improvement Fund

Project #162 – Recycling Transfer Station

CORP. OF THE CITY OF TIMMINS

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Introduction

The City of Timmins is centrally located in Northeastern Ontario, and is the regional centre for shopping, culture, commerce, health, industrial supplies and distribution channels. The City of Timmins has a population of 44,000, but draws consumers and business-to-business trade from throughout the Cochrane District, the James Bay Coastal area and nearby communities such as Chapleau and Kirkland Lake for a total regional market of approximately 118,000.

The City of Timmins currently provides waste and recycling collection to 10,250 households. On average 10,000 metric tonnes per year of waste, of that volume 3,000 metric tonnes are diverted from the landfill to recycling facilities. The Deloro Landfill Site is located in the Deloro Township of the City of Timmins, 5kms south of Algonquin Boulevard (Highway 101) on the east side of Pine Street. The licenced area of the site covers 375.2 hectares of land ranging from the dumping areas heading west to the Mountjoy River.

Project Background

The City of Timmins Waste Management Department developed a waste management plan to increase waste diversion and initiate a long term waste management plan in 2009 (CIF Project #129). The waste management plan outlined what would be a paradigm shift in the way waste and recyclable services are delivered to residents and represented best practices within the industry, in keeping with the province, initiatives towards waste diversion and best practices. Detailed in the report was a review of Traditional Transfer Station vs. Transtor Transfer Station.

Table 1: Timmins Best Practices Assessment: Traditional and Transtor Transfer Station

Best Practice	Traditional Transfer Station	Transtor Transfer Station
Makes Use of Capacity	No – oversized because of design restrictions for size of loading bay/trailer space requirements	Yes
Integrated Approach	Yes – can share with other municipalities	Yes – can share with other municipalities
Redundancy	Yes – sufficient tipping floor storage capacity to minimize downtime	Yes – two trailers provide sufficient storage capacity to minimize downtime
Scale to Tasks at Hand	No - building and equipment will be underutilized	Yes
Mechanization vs. Labour	No – cannot make optimum use of labour or equipment	Yes/No – no direct labour requirement for the City/unless the City elects to control trailer loading
Double Handling	No – material tipped then loaded by staff into trailers	Yes – material tipped by hauler directly into Transtor with automated loading of trailer
Flexible Design	Yes – can accommodate new material types/changing operations	Yes – additional Trailer or Transtor units can be easily added

The City of Timmins decided to initiate one of the recommendations from the waste management plan: *Construction and contracted operation (and haulage) of a Transtor Transfer Station that features a Transtor unit and two compaction trailers.*

From a best practices standpoint Timmins is better served by a Transtor transfer system than a traditional transfer station. Not only is it more cost-effective but it meets all of the principles of industry accepted best practices for processing.

Table 2: Recycling System Characteristics Status Quo and Recommended System

Recycling System Characteristics	Status Quo	Recommended System
Number of Trucks*	10	4
Tonnes/Day/Recycling/Truck	3.57	6.34
Tonnes/Day/Garbage/Truck	5.62	12.10
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Total Annual Operating Cost	\$942,031	\$515,203
Total Annual Capital Cost	**	\$292,844
Total Annual Cost	\$942,031	\$808,047
Total Cost/Tonne	\$90	\$77

*includes two spares (1 new, 1 existing)

**existing fleet will need replacement

Recycling Transfer Station Project

The main driver for the success of this project is long term operational cost reduction. The main measurement of concern was the existing operating costs compared to the new operating costs.

Aside from cost reductions the City anticipated an increase in tonnages collected due to the implementation of expanded recyclable material acceptance.

The Transtor is a combination storage and transfer device that has been used in numerous municipal transfer applications including residential drop-off. The Transtor Transfer Station would feature one transtor unit, with 8 tonnes per day capacity and two 25 tonnes transfer compaction trailers. The maximum storage capacity within the blue box transfer station will be 80 cubic yards.



Figure 1: Transtor in place at Deloro Landfill



Figure 2: Transtor dumping into Compaction Trailer

The construction of the Transtor Transfer Station was completed in late fall 2010 and began with soft implementation with selected identified trucks dumping into the Transtor station and continuing use of contractor MRF.

With the Transtor station in use, the City tendered out the transportation and disposal (haulage) services of the recyclable material to Sudbury's Processing Facility. An agreement with the City of Sudbury and the City of Timmins was established for the processing of recyclable material.

As the waste management department began receiving the automated/manual dual stream refuse packers and solely began city wide dual collection and relieving the contractor from their contractual duties. Once the City solely conducted dual stream collection and the implementation of automated collection system with expanded recyclable material list has brought about an increase in tonnage of 32% with seasonal peaks in the 37% range.

Table 3: Comparative tonnages of waste and recycling 2010-2012.

	2012		2011		2010	
	Waste	Recycling	Waste	Recycling	Waste	Recycling
Jan	637.539	300.5	585.01	210.61	575.99	170.92
Feb	425.542	225.86	513.00	173.08	523.035	139.63
Mar	659.066	272.62	573.75	197.31	640.685	150.95
Apr	434.602	278.62	541.22	203.13	643.16	149.51
May	772.76	309.03	641.28	240.88	702.26	184.93
Jun			583.84	217.41	692.805	228.68
Jul			518.02	177.24	628.5	198.59
Aug			637.06	292.62*	634.39	204.02
Sept			697.11	333.66	672.085	223.36
Oct			618.14	301.66	649.42	219.8
Nov			635.39	292.73	649.55	242.92
Dec			539.08	286.88	613.82	210.87
Total	3136.759	1487.7	7082.884	2927.21	7625.7	2324.18

❖ *start of automated collection system*

With increased tonnages of recyclable material received at the Transtor Station the compacting trailers were not being maximized to their full potential. Predicted load weights of 20 tonnes

were never achieved as typical load weights averaged about 17 tonnes per trailer. Two factors came to roost for this issue as City staff would “juggle” trailers to Sudbury in order to consistently have an empty trailer on site. The other factor was compaction issues with the trailers as the trailers have not been able to achieve the rated weights.

Project Financials

The total cost of the project was \$975,250 which is made up of the construction of the transfer facility at our City landfill for a cost of \$952,360. The remaining balance of \$22,890 was spent on advertising and promotion. This was an unbudgeted expense however it was determined that education and promotion was the key success factor to this project’s success therefore dollars were allocated to ensure public awareness and education. The project did incur some overages on some materials and labour due to some issues with the initial pouring of the concrete footings.

The Continuous Improvement Fund (CIF) funded a portion of the project where the City received \$400,000 in funding. The remaining balance of unfunded costs will be paid for by the City by the annual savings the project is estimated to generate until the project is paid in full. It is estimated to be paid off in 10 years.

Lessons Learned

During construction of the Transtor a significant error was immediately noticed. The concrete anchor slab for the Transtor unit needed to be re-poured as it was noted that the form for the concrete footing was not stable. Upon further investigation it was found that the form was unstable right from the start and therefore required to be reformed and poured again. This process caused some delay as season and weather changes were starting to play a major factor during construction.

An oversight that had also occurred was for the compaction trailers as the engine was not covered. The compaction trailer engine should be covered to prevent the elements and blowing sand to impede the engine. Covering the engine would also help with preventative maintenance activities to the compaction trailers.

A significant issue which the City of Timmins still faces is trailer compaction. The compaction trailer is rated for 20 tonnes, but on average it’s weighed at 17 tonnes per trailer. With this in mind and with an increasing trend of recyclable material volume, it is best that an additional compacting trailer be on hand to help maximize trailer loads to Sudbury. There have been few

instances; during statutory holidays, that the waste management department rented out a walking trailer to help with surplus collected recyclable material. An extra trailer would also aid with preventative maintenance as downtime would be greatly minimized.