

# **TRI R LANDFILL, RECYCLING AND REUSE CENTRE**



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On behalf of the TRI R COMMITTEE  
PROJECT #511.11

## EXECUTIVE SUMMARY

The Municipalities of Armour, Burk's Falls and Ryerson have jointly managed the financial obligations associated with the TRI R Landfill, Recycling and Reuse Centre since 1988. Representatives from each of the three municipalities form the TRI R Committee, with Armour Township as the administrating body. Armour (44%), Burk's Falls (26%) and Ryerson (30%) apportion the costs associated with the centre on tax base and population.

For the 1689 households in Armour and Ryerson an onsite depot service is provided and another 494 are served by curbside collection in the Village of Burk's Falls. The costs associated with the curbside collection are managed solely by the Village.

*Table 1. Population and portion of cost*

Municipality	Households	Population
Armour (44%)	1132	1241
Burk's Falls (26%)	494	848
Ryerson (30%)	557	591
<b>Total</b>	<b>2183</b>	<b>2680</b>

The TRI R MRF is situated in a rural Northern Ontario town in the East Parry Sound District. Small populations and long distances to the recycling markets in the south present operational and economic challenges for managing the recycling program. As well, all of the processing equipment that was purchased in 1988 remain in operation today.

The MRF is hampered with ongoing and increasingly expensive repairs to the skid steer and cardboard baler. The Committee budgeted for replacement in 2010 and made application to the CIF for assistance with the project to improve the E&E factors at the facility.

*Table 2 Capital Cost of Upgrade*

AREA TO ADDRESS	DESCRIPTION	PRICING
Progar Baler	20 + year old	\$19,000 delivered and installed
1845C Skid Steer	20 + year old	\$29,000-\$8,000 trade in
<b>Total (before tax)</b>		<b>\$48,000</b>

## PROJECT ABSTRACT

Located on the edge of the Village of Burk's Falls, the site operates as a landfill, recycling and reuse centre. As residents enter the site, they stop at the reuse centre and report to the attendant. The depot area is a 900ft<sup>2</sup> quonset with bins to sort material. The residents sort HDPE, PETE, mixed metal, clear and coloured glass. Bins for old corrugated cardboard, paper and boxboard are located at the entrance to the MRF. Other services available at the site include, scrap metal, electronics, tires and wood waste, which are managed within the operations area of the landfill.

*Material Recovery Facility*

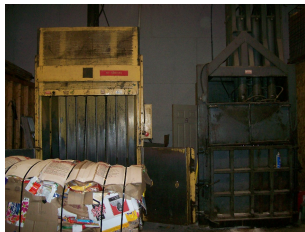


*Recycle Depot and Reuse*

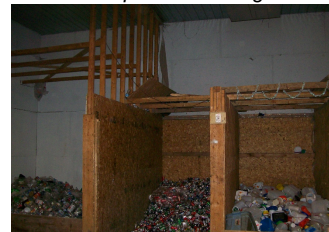


The Material Recovery Facility, a timber framed, steel sided building, consists of a Progar cardboard baler, a Thompson densifier and a Gensco magnetic separator. Mobile equipment includes a Yale forklift, Case skid steer and a Cat landfill compactor. The skid steer is used to crush and move glass, prep electronics for shipping and site maintenance. Budgets for the two operations are projected by the TRI R Committee with final approval coming from each of the three municipal councils. Site staffing consists of a Supervisor, and 3 assistants. Currently, the MRF operates 6 days a week, 5 hours a day.

*Baler and Densifier*



*Work in process storage*



The mixed metal that is dropped off at the site is sorted by staff using the magnetic separator. Aluminum and Steel are separated in the processing area before being sent to the densifier for baling. HDPE and PETE are also processed with the densifier.

The Progar baler has had the most dramatic effect on the cost/tonne and processes 65% of the total tonnage. The summer of 2010 came with 373 hours of downtime on the baler and repair costs over \$8,000. During this downtime OCC was shipped to a neighbouring municipal MRF.

With the expense of a landfill expansion in progress, the recycling program has been maintained at a minimum. The 22 year old MRF is faced with the challenges caused by aging equipment. Operating costs have climbed by 25% over the last 3 years.

*Table 3 Gross operating cost and cost/tonne*

Year	Gross Operating	Cost/Tonne
2007	\$140,918.35	\$481.71
2008	\$150,173.60	\$619.47
2009	\$175,511.46	\$1,025.02

*Table 4 Marketed Material*

MATERIAL (tonnes)	YEAR		
	2007	2008	2009
<b>Thompson Densifier</b>			
Aluminum	8.62	13.9	4.3
HDPE	2.64	8.99	6.61
PETE	9.8	20.11	8.84
Steel	32.58	21.74	0
Processed	53.64	64.74	19.75
<b>Progar Baler</b>			
OCC	102.3	74	82.77
ONP	71.14	98.06	57.73
Processed	173.44	172.06	140.5
<b>Stored on Site</b>			
Glass	53.32	21.9	21.61
<b>TOTAL TONNAGE</b>	<b>280.40</b>	<b>258.70</b>	<b>181.86</b>

## Justification and Benefits

Equipment repair and maintenance costs have been sporadic. Minimizing the repair cost with quick fixes result in major equipment breakdown. Implementing a proactive preventative maintenance schedule will eliminate the breakdowns and assist with budget projection. Researching the cost of trucking and bin rentals for local municipal

transfer stations and evaluating the site alterations required to process material as a transfer station, lead the committee to decide to repair and replace the existing equipment.

The replacement of these units will bring the annual equipment maintenance budget to a more manageable level. A diligent maintenance schedule will control the downtime on equipment and staff. Throughput at the MRF will improve with more consistent bale weight and size for OCC and ONP.

The aging Progar baler was constantly losing down pressure which made the bales difficult to deal with in the warehouse. The rounded bales create warehouse health and safety concerns and are often put back to the baler because of broken bands or the quality of the bale.

*Old bales along side new*



*New Harris-Selco Baler*



*450CT Case Skid Steer*



The new baler produces tighter, more consistent bales, that will take up less space both in warehouse and transport. The expense of rework will be removed from the overall processing cost and increase productivity. With the improvements to baling equipment there will be opportunities to increase throughput. The mobile equipment upgrade will minimize the overall operating cost. The replacement of parts due to aging will be eliminated and the preventative maintenance schedule will be implemented.

## IN CLOSING

The efficiency and effectiveness factors at the facility are expected to improve dramatically in 2011. The new baler will eliminate downtime, minimize repair and maintenance cost and the cost of shipping to the southern markets will be reduced. The \$1000/tonne operating cost incurred in 2009 is expected to level off and begin to decrease in 2011. The skid steer upgrade has already begun to minimize fuel cost with its improved technology. The larger bucket minimizes the trips required to move material. The tracks will last for 3500 operating hours, whereas the foam filled tires wore out after 1000 hours. Controlling the costs associated with the facility will ensure its operation for another 22 years. Moving forward, the Committee intends to increase the diversion rate with the implementation of a Waste Recycling Strategy and mandatory recycling by-laws. The process will also be reviewed with recommendations for other improvements.

