

Municipality of McDougall



CIF Project # 209

Final Report - October 2013

Corporation of the Municipality of McDougall

5 Barager Boulevard

McDougall, Ontario

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Photo 1: Two solar compaction units at the Municipal Transfer Station

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Executive Summary

The Municipality of McDougall is committed to reducing the amount of waste filling up its Landfill. In light of this promise, McDougall is always looking for ways to combat the waste management issues that face Northern Ontario Municipalities like seasonal population patterns, and large rural road networks. In 2010, the Municipality in partnership with Waste Diversion Ontario (WDO, the Continuous Improvement Fund (CIF), and Stewardship Ontario entered into an agreement to install equipment to improve efficiency and reduce transportation costs. This objective was achieved by installing 2 compactors and 4 - 40 yard bins at the McDougall Transfer Station. These units decreased the number of lifts and amounts being billed to McDougall for recycling removal from the site. Based on cost analysis, the compactors are saving McDougall approximately \$17,000 per year. The return on municipal investment of the compactor implementation is estimated at 3 years. The compactors at the Transfer Station were operation January 2010.



Photo 2: Solar compaction unit at the Municipal Transfer Station

1 Introduction

The Municipality of McDougall was awarded CIF funding of \$53,822 for best practice improvements. The project consisted of the installation of two compactors at the McDougall Transfer Station to capture mixed paper and plastics. This report provides an overview of the project including an introduction, approach, project results and analysis. Information was gathered by Municipal staff from BFI Canada billing, and McDougall's Waste Diversion Ontario Report. The project data commences January 1, 2009 and ends December 31, 2011.

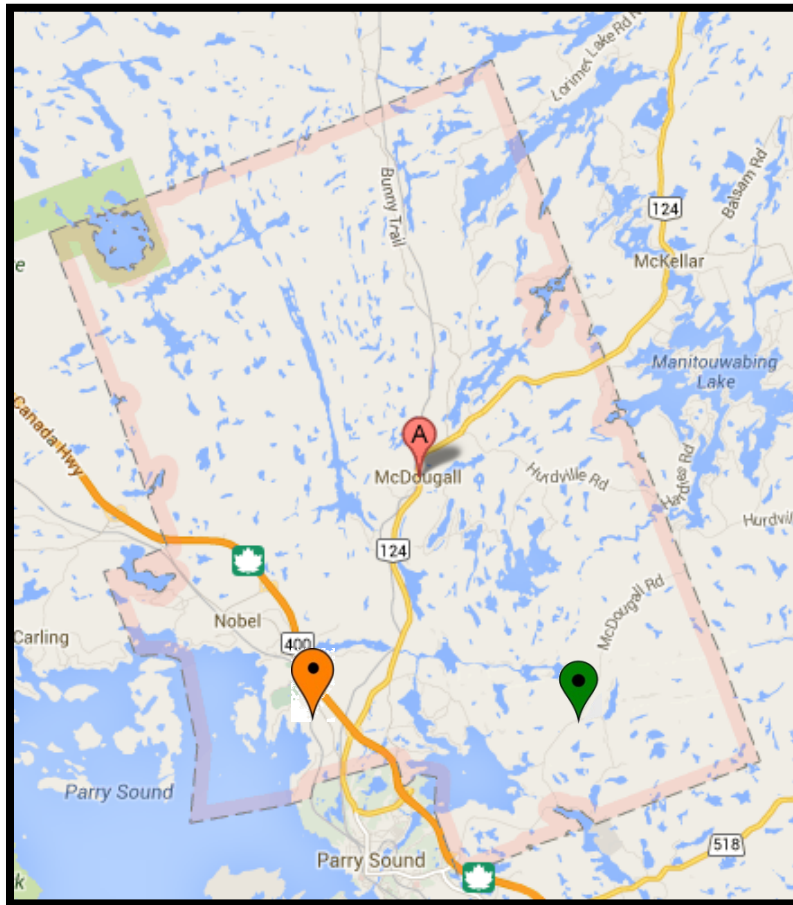
2 Program Background

2.1 Community Profile

The Municipality of McDougall is located in the District of Parry Sound, a 2 hour drive north of Toronto. A majority of the land area in the Municipality is zoned rural. The landscape has many waterfront areas on Georgian Bay as well as many inland lakes and river systems.

The Township was originally incorporated on May 1, 1872 and was named after William McDougall, one of the Fathers of Confederation. In 2000 the merger of the Township of McDougall and the unorganized Township of Ferguson created the Municipality of McDougall. The area has a population of 2,428 people consisting of 1,838 households, 637 of which are seasonal.

2.2 Waste Management System



The map above details the location of the Transfer Station (orange pin) and the Landfill (green pin) within the pink boundary lines of the Municipality of McDougall. Both sites have received CIF for the installation of compactors.

McDougall's waste management system consists of the Municipality owned and operated Waste Transfer Station and Landfill. McDougall does not operate a curb side pickup program; instead residents can take their waste to the Municipal Transfer Station or Landfill.

The Transfer Station acts as an interim storage facility for waste to make it more efficient, effective and convenient for residents prior to shipping the waste to its final disposal location. Separation of waste at the Transfer Station and Landfill is achieved

through bins to separate waste into two waste streams, household material going to the landfill and material for diversion.

The Landfill is used by McDougall and commercial accounts from neighboring Municipalities. McDougall reduces waste by operating a recycling program that diverts the standard blue box program items: glass, card board, newspapers, and certain plastics. These recyclables are taken by BFI Canada to the Bracebridge Materials Recovery Facility (MRF). All mixed paper products that enter the Landfill are compacted prior to shipping out using 2 solar powered compactors (acquired with past CIF funding). These compactors have helped McDougall to reduce CH₄ and CO₂ by reducing the number of trips and lifts required by BFI and overall waste management efficiency. In addition, the Municipality also operates diversion programs for all metals, white goods (fridges, stoves, and freezers), tires, hazardous materials and wood. If the above programs operate properly the only material that is being land filled is standard non-hazardous residential, commercial waste.

Processing and treatment of waste is undertaken at the Landfill on a daily basis. One by product of household land filling is leachate which is extracted from the Landfill and processed in a leachate processing plant on site. Wood waste is chipped on site and used for daily cover or in the onsite road construction.

2.3 Pre - Compactor Waste Management Performance

Prior to the compactor installation all mixed paper and plastic products were diverted from the Transfer Station by BFI to the Bracebridge MRF. Compactors had never before been in operation at the Transfer Station.

3 Project Description & Goals

3.1 Description of the Project

Further increase waste management system efficiency and effectiveness by adding compaction units to McDougall's recycling program. The two compaction bins will be mounted on concrete a pad with a rail system complete with four collection bins at McDougall's Transfer Station.

3.2 Goals

The goals set out by the Municipality of McDougall for this project centre on efficiency and include:

- Increase capacity of bins from 28 yard of material to approximately 220 yards of loose material prior to requiring a lift
- Decrease truck loads by 720 loads from the Transfer Station over the 20 year life cycle of the project
- Cost savings of approximately \$29,898 in operating expenses per year
- Decrease amount of recyclable material going to the landfill by 75%

3.3 Approach

The Municipality estimated that a total of \$112,364 would be required for the project and was granted \$53,833 by CIF. This estimate included:

- 2 compactors
- 4 - 40 yard bins
- Concrete pads
- Hydro setup

Tender for the compactors was awarded to Efficient Waste Management Services Inc. (EWM). Installation of the concrete pads was awarded to Parry Sound Ready Mix.

3.4 Project Monitoring & Reporting

Performance measures used for this project included:

- BFI Billings - Monthly lifts
- Waste Management Staff Reports to C.A.O. and Council

4 Project Results and Analysis

4.1 Overview of Results

Results used in this report include BFI billing and Waste Management Staff reports. The timing of this information spans January 1st, 2009 through December 31st, 2011.

4.2 Comparison of Results

Data from BFI billings from years 2009, 2010 and 2011 are compared below. They span 12 months over each year beginning January 1st and ending December 31st. The pre-compaction amount of mixed paper (MP) and mixed recycling (MR) is shown in the year 2009 data against 2010 when the compaction units were added at the beginning of January. The year 2011 is also shown to demonstrate the full impact of the compactors. All billing information is shown before tax.

Table 4.2 Decreased Lifts and Billings with Compaction

Year	Recycling Depot Pick Ups (MR & MP)	Total Billed
2009	105*	\$40,094.38

2010	40	\$17,816.33
2011	42	\$17,332.64

** Included in this number are 66 single lifts and 39 double pick-ups via truck roll off train. This translates into 105 single pick-ups in 2009.*

4.3 Key Findings

The installation of two compactors at the Transfer Station proved effective. The first year savings realized after the installation were \$22,278.05, a 56% decrease in cost. The number of lifts required was also reduced by 65 lifts or 62% in 2010. The reduction in lifts was emphasized by the Municipality's use of double lifts in 2009 via BFI's truck roll off train. With the addition of the compactors, double lifts are no longer required by McDougall have not been used since 2009.

4.4 Lessons Learned

The following section is based on Waste Management Staff reports concerning the compactors:

- Minor problems at the beginning as the machines were being set-up but all issues were quickly rectified by supplier.
- The compaction units are very efficient in terms of cost and diversion.
- Regular maintenance is required and should be included in operating budgets.
- These units have reduced the work for Staff as they no longer have to hand crush boxes.
- The workplace is much safer with the addition of compactors because Staff don't have to get into the mixed paper bins to crush boxes.

5 Project Financials

5.1 Budget

Table 5.1 depicts the financial planning behind the compaction project. The compaction units' installation was over budget by \$10,496.61. The tax applied to the compactors may have been a major contributor to the projects over budget status. The cost of the setup station was under budget by \$2,875.71. Funding from CIF remained unchanged and McDougall paid \$69,038.61 for the project. With annual savings from the lifts alone of approximately \$23,000 the payback period for the project is 3 years.

Table 5.1 Project Budget and Actual Spending

Cost of Bins	Budget	Actual
Two Compactors	\$ 69,664.00	\$ 69,664.00
Four Forty Yard Bins	33,200.00	33,200.00
Taxes*	0.00	13,372.32
Total	102,864.00	116,236.32
Cost of Station Setup	Budget	Actual
Concrete Pads	\$ 3,000.00	\$ 2,133.00
Hydro Setup	6,500.00	4,013.33
Taxes*	0.00	477.96
Total	9,500.00	6,624.29
Final Total	112,364.00	122,860.61
CIF Funding	(53,822.00)	(53,822.00)
Municipality of McDougall	58,542.00	69,038.61

* Agreement was entered into prior to HST; estimate was drafted using GST and PST

5.2 Project Schedule

Table 5.2 outlines the budgeted time allocated for each major step in the project and the funding associated with it.

Table 5.2 Project Schedule and Actual Completion

Project Deliverables	Approved Payment	Percent of Funding	Expected Completion	Completion Date
Phase 1 – <i>Installation of compaction units</i>	\$ 40,367	75%	January 30, 2010	January 12, 2010
Phase 2 – <i>Final report, detailing costs & savings over 8 months of unit operation</i>	13,455	25%	September 31, 2010	September 30, 2013
CIF Funds Requested	53,822	100%		

6 Conclusions

In summary, the compaction project was a success for the Municipality of McDougall. Council and Staff are satisfied with the addition and its positive results. All goals were achieved including:

- Relief to WM budget and environment.
- Increase Waste Management efficiency.
- Reduce CH4 and CO2 by reducing number of trips required by BFI.
- Reduce number of lifts per months, thus reducing the fuel surcharge.