



CIF Project 241 Final Report

May 2012

CANBOROUGH RECYCLING TRANSFER STATION (CRTS)
HALDIMAND COUNTY, ONTARIO

CIF Project Number 241

Final Report
Date May 2012

Prepared for:
Waste Diversion Ontario
Continuous Improvement Fund Office
Barrie, Ontario

Prepared by:
David Pressey
Haldimand County

Figure 1 - Canborough Recycling Transfer Station (CRTS)



Acknowledgement

This Project has been delivered with the assistance of Waste Diversion Ontario's Continuous Improvement Fund, a fund financed by Ontario municipalities and stewards of blue box waste in Ontario. Notwithstanding this support, the views expressed are the views of the author(s), and Waste Diversion Ontario and Stewardship Ontario accept no responsibility for these views.

© 2012 Waste Diversion Ontario and Stewardship Ontario

All rights reserved. No part of this publication may be reproduced, recorded or transmitted in any form or by any means, electronic, mechanical, photographic, sound, magnetic or other, without advance written permission from the owner.

TABLE OF CONTENTS

1	Executive Summary.....	5
2	INTRODUCTION.....	6
2.1	Community Profile	6
2.2	PROGRAM OVERVIEW.....	7
3	BACKGROUND.....	8
3.1	Waste Management System.....	8
3.2	Waste Management Performance.....	8
3.3	Program Challenges	9
3.4	Goals and Objectives.....	10
3.5	Project Schedule	10
4	PROJECT MONITORING AND MEASUREMENT.....	11
4.1	Approach.....	11
4.2	Baseline.....	11
4.3	New Waste Management System.....	11
4.4	Quarterly Report Summary.....	12
5	ANALYSIS AND RESULTS.....	13
5.1	Collection Tonnage	13
5.2	Program Costs	14
5.3	Material Revenue.....	15
5.4	Transtor System	16
5.5	Program Flexibility	16
6	LESSONS LEARNED	18
6.1	Implementation	18
6.2	Construction.....	18
6.3	Operational Logistics.....	18

LIST OF TABLES

Table 1 - Waste Management System Overview	9
Table 2 - BB Material Tonnages (2009-2011)	13
Table 3 - Datacall Summary (2006 - 2011).....	14
Table 4 - Datacall Operating Summary (2006 - 2011).....	15

LIST OF FIGURES

Figure 1 - Canborough Recycling Transfer Station (CRTS)	1
Figure 2 – Location of Haldimand County.....	6
Figure 3 - BB Material Tonnes Collected.....	14

1 Executive Summary

Haldimand County has been involved in the Blue Box curbside recycling program since the early 1990's. Since its inception, the recycling program has been labeled a success in every facet of its operation. Haldimand and Norfolk County, once joined together as a Region, have continued the programs success by jointly owning and operating a Materials Recovery Facility (MRF) to process their Blue Box materials. Again that facility has proven it's effectiveness within the program. However, times have changed and that means programs must evolve to manage the change.

Municipalities across the province have realized program efficiencies where larger, more regionalized processing facilities, are utilized. Within those programs, efficiencies are seen in managing the Blue Box materials from the curb side in reduced streams; single stream or dual stream. In order for Haldimand to realize these efficiencies, changes would need to be made.

Through the help of the Continuous Improvement Fund (CIF), Haldimand and Norfolk Counties completed a study looking at the feasibility of upgrading the MRF or transferring their Blue Box materials to larger more efficient MRFs. The outcome of the study resulted in Haldimand County developing the Canborough Recycling Transfer Station to manage its own Blue Box materials. Now with the ability to transfer Blue Box materials, Haldimand can reach processing facilities outside its boundaries thus sharing in the benefits of the economies of scale prevalent in those markets.

Through a competitive process, Haldimand entered into a contract with Niagara Region to process Haldimand's Blue Box materials. Niagara's facility receives the Blue Box materials in two streams, fibre and containers.

Although the curbside set out requirements were simplified, that didn't translate into the increased capture rate Haldimand was expecting. Only a two percent increase in tonnes collected was realized. However, the participation rates in the Blue Box program for Haldimand were already high – keeping the program a huge success.

More important is the overall cost saving with regards to processing the Blue Box material. Now that Haldimand can effectively reach the Niagara MRF, the cost to process Haldimand's Blue Box materials have reduced. Although the cost to transfer the materials to Niagara offsets the processing savings, the outcome remains a net savings to the overall program.

The transferring of Blue Box materials via the Transtor system has proven difficult at times and the full effectiveness of the system is still yet to be proven. Operational and logistical issues continue to hinder the efficient operation of the transfer system, yet the system is operating as designed. Haldimand continues to strive for increased trailer weights in efforts to reduce trucking costs and aim to maintain low operating fees. However the system is working and has reduced the operating cost allowing Haldimand to continue recycling in an effective manner.

2 INTRODUCTION

2.1 Community Profile

Haldimand County is where the waters of the Southern Grand River meet Lake Erie – offering visitors the experience of both “Grand River Country” and “Ontario’s South Coast.”

For nearly 300 years, the Grand River has been used for commerce, power and recreation. Enjoy its charm and unique local flora and fauna that stem from being part of the only Carolinian Forest pocket left in Canada. The Grand’s varied resources, its historic echoes; cultural value and uniqueness as a river system are recognized nationally and internationally with its designation as a Canadian Heritage River.

Our unique, historical and picturesque communities offer small town charm and friendliness. Agriculture is a very important aspect of Haldimand County where visitors can enjoy beautiful country vistas or buy farm fresh produce at one of our many farm and roadside markets. If festivals, fairs and events are your style, the County has something for all ages and interests!

Both the Southern Grand River and Lake Erie make Haldimand County a fishing enthusiast’s paradise that is renowned throughout North America! With a long automotive racing history, Haldimand County is also a car buff’s haven – and continues to be a favourite of golfers, hikers, cyclists, campers, birders, boaters, photographers and artists and sightseers.

Haldimand County is located along the North shores of Lake Erie, directly south of the City of Hamilton.

Figure 2 – Location of Haldimand County



2.2 PROGRAM OVERVIEW

Haldimand and Norfolk County jointly own and operate the Haldimand-Norfolk Material Recovery Facility (MRF) located in Simcoe, Ontario. The MRF has been in operation since 1994. Due to the processing capabilities during the time of construction, the MRF was designed to receive blue box materials in 6 separate streams. Today's technology has improved and programs have evolved to a more efficient system where benefits are seen in reducing the streams collected for processing.

As a result of the aging equipment and the benefits seen by reducing the streams collected, Haldimand and Norfolk were faced with a decision to either upgrade the MRF or seek alternative processing capacity. To aid in the decision of which way to proceed, Haldimand and Norfolk County retained the services of 2cg Inc. to complete CIF Project #103, Material Recovery Optimization Study in the Counties of Haldimand and Norfolk, August 2009.

The outcome of the MRF Optimization Study recommended Haldimand and/or Norfolk to cease operations at the MRF and seek third party processing capacity. To accommodate this recommendation, a transfer station would be required to receive the blue box materials and transfer them to the third party processors.

Haldimand County staff determined that a transfer station constructed at the Canborough Waste Management Facility (CWMF) would offer an effective and efficient transfer location for Haldimand's blue box materials.

Through the analysis completed within the MRF Optimization Study a transfer station utilizing the Transtor Transfer System offered the lowest long term operational costs.

3 BACKGROUND

3.1 Waste Management System

Haldimand County provides curbside collection on a weekly basis for garbage and blue box recycling. Curbside set out is restricted to 3 bags of garbage per household (with minor allowances for specific circumstances) per week with unlimited recycling. Haldimand also completes weekly collection for the downtown core of each of the urban centers. All garbage collected is taken to the Tom Howe Landfill Site (Tom Howe) for disposal. A portion of the garbage is taken directly to the landfill and a portion is routed through the Canborough Waste Management Facility (CWMF), then to Tom Howe for final disposal.

Previously, all blue box materials were taken to the Haldimand-Norfolk MRF (MRF). The MRF is located in Simcoe, Ontario and is jointly owned by Haldimand and Norfolk County. Norfolk County operates and maintains the MRF of behalf of both Counties.

Haldimand currently does not partake in an Organics Diversion Program. Organics are managed through the garbage collection and taken to Tom Howe for disposal. A source separated organics diversion program has been identified as a long term diversion goal. A seasonal leaf and yard waste collection program is run in the spring and fall free of charge to residents. Leaf and yard waste is also received at Tom Howe and the CWMF during the spring and fall free of charge.

Haldimand participates in the Used Tires and Waste Electrical and Electronic Equipment (WEEE) diversion programs. Facilities are established at the Tom Howe site and the CWMF to receive these materials for transfer. Metal is also diverted at the landfills and collected for recycling.

Haldimand participates in the Municipal Hazardous or Special Waste (MHSW) Diversion Program by offering rotational MHSW Event days throughout the County. The event days are held in April, June, September, and October and are operated by a contractor.

3.2 Waste Management Performance

For the purpose of this report, the baseline data to be used for comparison is the 2009 operating year. 2009 represents the last full year of operations under the previous structure whereby the blue box materials were processed at the Haldimand Norfolk MRF. The blue box transfer station was built during 2010 and operations started in the fall of 2010, thus the Generally Accepted Practice (GAP) information is split between the two operations.

The 2009 Generally Accepted Practice (GAP) information is summarized below.

Table 1 - Waste Management System Overview

	Units	Blue Box Recycling		Total Waste Diversion		Disposal		Generation (Total)	
		rate	% of total	rate	% of total	rate	% of total	rate	%
GAP Reported	tonnes	3,358.56	20.03	4,768.18	28.43	12,000.62	71.57	16,768.80	100%
	Kg/hhld	173.64		246.51		620.41			

3.3 Program Challenges

As mentioned earlier in this report, Haldimand’s Blue Box Recycling Program faced many challenges due to its aging processing facility. The main challenge was the need to complete a multi sort process at the curb due to lack of processing capability in the MRF.

The other factor that influenced the need for this project is Haldimand’s relatively low tonnage of blue box material. Haldimand is a geographically large municipality with a low population and low population density. That translates into a tonnage recovered that, according to best practices, does not support the need for a sole processing facility. Even with Norfolk County’s tonnage, the Haldimand Norfolk MRF still processed less than 10,000 tpy.

When program challenges present themselves, the resolved outcome usually results in increased efficiency and effectiveness of those programs. Such were the hopes of this project. In changing from a multi sort curbside program to a two stream sort, curbside collection costs were expected to decrease. Reducing the sorting requirements for the residents should also increase the participation rates, thus increasing tonnages recovered. By shifting processing operations from our MRF processing less than 10,000 tpy to a larger MRF, the overall processing costs per tonne were expected to decrease.

It is these assumptions that lead to the proposed changes to our recycling program. County Staff prepared reports to Council to gain approval for the changes. The relevant reports are listed below and are included in Appendix A

1. PW-SW-01-2009 MRF Optimization Study RFP
2. PW-SW-05-2009 MRF RFP Award
3. PW-SW-08-2009 Contract Extension for MRF
4. PW-SW-10-2009 MRF Optimization Study
5. PW-SW-M04-2009 Information on PW-SW-10-2009
6. PW-SW-06-2010 CIF Funding Approval
7. PW-SW-07-2010 Award of Contract ES-SW-02-2010
8. PW-SW-08-2010 BB Transfer Station Contract
9. PW-SW-11-2010 Canborough WMF
10. PW-SW-13-2010 Revisions to Contract ES-SW-2007 04

3.4 Goals and Objectives

As with many programs, the aim is to provide the highest level of service for the least amount of cost; that is the basis of an effective and efficient program. The main objective of CIF Project No. 241 is to lower the long term operating costs of the blue box recycling program in Haldimand County.

In order to achieve this objective, the County set out to accomplish a series of goals. Through the implementation of this project the individual goals established to achieve the objective are as follows:

1. Optimize the curbside collection program;
2. Optimize the processing of the Blue Box materials;
3. Maximize the revenue potential for the commodities marketed; and
4. Reduce the capital output required for the program.

3.5 Project Schedule

Haldimand County first initialized this project in late 2008. Staff examined the feasibility of installing the required upgrades to the existing MRF. The following list is a schedule that would provide an answer to that question and the resulting work required to achieve the solution.

- March 2009 – Award of MRF Optimization Study
- July 2009 – Haldimand Norfolk MRF Operating Contract Extension
- October 2009 – Haldimand approved the divesture of the Haldimand Norfolk MRF
- May 2010 – Haldimand County approved the receipt of CIF Funds
- May 2010 – Haldimand awarded the hauling, processing, and marketing of BB Materials to Niagara
- June 2010 – Award of tender for construction of CRTS
- July 2010 – executed lease agreement for use of the Canborough WMF
- August 2010 – Revisions to curb side recycling collection contract

Urban and Environmental Management (UEM), along with VQuip, now know as NEXGEN, were retained to complete the design and contract administration for the CRTS. UEM managed the general engineering and consulting duties for the project while NEXGEN supplied the equipment and technology for the process. As the equipment selected for transfer was proprietary in nature, Haldimand was able to sole source the equipment and process.

In accordance with Haldimand County's procurement policy, the construction of the transfer station was tendered in 2010 and awarded to Geo Barnes and Sons Ltd. Due to the pending MRF operating contract, due to expire in October 2010, the implementation timeframe was extremely short. The transfer station was required to be operational on October 1, 2010.

4 PROJECT MONITORING AND MEASUREMENT

4.1 Approach

The main driver for the success of this project is long term operational cost reduction. As such the main measurement of concern was the existing operating costs compared to the new operating costs. Aside from cost reductions; the county anticipated an increase in tonnes collected mainly due to the launch of the new 2-Stream sort program. A comprehensive multimedia promotional campaign was undertaken using CIF funding, to launch the new two-stream recycling program. The rigorous promotion of a new program usually results in increased program participation characterized by an increase in curbside collection tonnages. As such the comparison of pre and post project collected tonnes were monitored and compared.

4.2 Baseline

The Canborough Recycling Transfer Station (CRTS) was constructed over the summer of 2010 and commissioned in October 2010. As such, the 2010 Blue Box Recycling data for 2010 is split between the MRF operations and the CRTS operations. For the purposes of monitoring and measurement, the 2009 operational data was used as that was the last year the MRF operated for the entire year.

Baseline data for comparison included the information submitted in the 2009 Datacall with attention on the tonnes collected, and processed, the gross processing costs and the revenues generated.

Comparing the MRF operations to that of a transfer station is not a straight apple to apples comparison. As such, the MRF processing fees will be compared to the CRTS operating fees, material transfer fees, and the processing fees at the Niagara MRF.

With regards to the revenues, a comparison is hard to make due to the volatile market conditions for blue box commodities. More importantly, what was compared was the cost sharing arrangement between Haldimand and Norfolk regarding revenues to the cost sharing arrangement for the new system and relationship with Niagara Region.

4.3 New Waste Management System

As stated above the CRTS was commissioned in 2010. To allow for a true comparison of operating costs, an entire year of operating within the new system was required. The 2011 data call information will capture the entire Blue Box Program costs for the new recycling system. The 2011 data will be used to compare against the 2009 data.

Tonnages collected and transferred will be compared to the 2009 collected tonnages to demonstrate the effect that the new two-stream collection program had on the capture rate. Again as stated above, the operating costs of the CRTS, the transfer costs, and the processing fees of the new system will be aggregated and compared to the MRF operating costs of 2009.

Under the new processing contract with Niagara Region, Haldimand County receives a percentage of the revenue derived from the sale of recyclables. The resulting revenues gained by Haldimand through that arrangement will be compared to the revenue allocation used by Haldimand and Norfolk in 2009.

4.4 Quarterly Report Summary

Throughout the first 12 months of operating under the new transfer system, Haldimand was required to submit quarterly reports to the staff of the CIF. The quarterly reports included such information as listed below.

- documenting any difference in labour or operating costs resulting from the new operations, such as additional litter control or haulage costs;
- determining processing savings related to facility design including a break down that shows the difference between budgeted and real costs for installation and operation;
- observing transfer station operations and documenting any materials or events that are problematic;
- documenting maintenance required on the system in the period since the last report;
- documenting health and safety issues related to the operation, including lost time in the period since the last report;
- reporting on feedback from markets regarding the quality and value of the materials received in the period since the last report; and
- other information relevant to the current effective and efficient operation of the facility.

Copies of the quarterly reports are included within Appendix B.

5 ANALYSIS AND RESULTS

In order to effectively monitor and measure this project, the recycling program was monitored over a period of one calendar year. By monitoring the CRTS for one calendar year, the County was able to monitor the operations through the seasonal changes and allow for operational issues to be identified as either “one off issues” or problematic issues that will effect the long term operations of the CRTS.

5.1 Collection Tonnage

The main focus of this project is to reduce long term operating and capital costs related to the Blue Box Recycling Program in Haldimand County. As part of the transition to the new 2-stream sorting requirements, a promotional and education program was launched. Due to the launch of a comprehensive Promotion and Education campaign, an increase in tonnes collected was anticipated.

Haldimand’s original estimate for tonnage increase was 5%. This was based on the results seen in other municipalities when they reduced the sorting requirements for their residents. However, Haldimand only experienced a 2% increase in tonnes collected. With this small amount of change it is difficult to directly correlate the launch of the new system with the increase in capture rate. A fluctuation of 2% can also be explained by annual variability relating to the blue box program.

It is important to note that tonnage is the main measure for determining the amount of materials collected but that does not capture the whole picture. A common trend in the packaging industry know as light weighting is impacting the ability to accurately measure materials collected at the curbside. The packaging material is becoming lighter and the volumes are increasing. This trend leads to increased volumes of materials collected, however at a reduced weight.

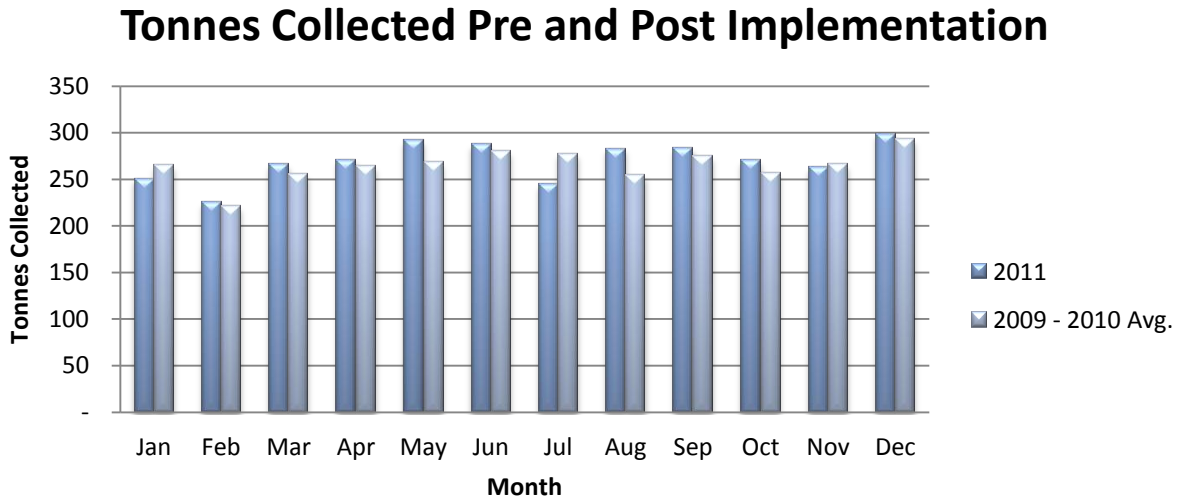
The table below shows tonnage data for Haldimand County for 2009 through 2011.

Table 2 - BB Material Tonnages (2009-2011)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTAL
2009	279	225	247	267	268	278	277	246	266	269	260	291	3172
2010	251	217	263	261	268	281	277	262	283	244	271	295	3173
2009 - 2010	265	221	255	264	268	280	277	254	275	256	265	293	3172
Avg.													
2011	250	225	266	271	292	288	245	283	283	271	263	299	3234
Tonnage Change	-14.3	4.2	10.9	6.8	24.3	8.0	-32.5	28.7	8.6	14.1	-2.5	5.7	61.9
Change	-5.4%	1.9%	4.3%	2.6%	9.1%	2.9%	-11.7%	11.3%	3.1%	5.5%	-0.9%	2.0%	2.0%

As you can see in the graph below, the overall tonnage increase maintained the existing trends as seen in 2009/2010.

Figure 3 - BB Material Tonnes Collected



5.2 Program Costs

For comparison and measurement purposes, the operating years of 2009 and 2011 will be compared. The 2010 operating year was excluded from this review as the 2010 year represents the transition year from one process to the other. For reference, the costs for 2006 through 2011 are shown.

When comparing the 2009 costs to the 2011 costs we see an increase in operating expenditures. The balance of that increase is due to curbside collection contract increases and the capital depreciation costs now incurred under the Depot/Transfer Cost section.

The table below includes the summarized costs as reported in the Datacall submission per year.

Table 3 - Datacall Summary (2006 - 2011)

	2006	2007	2008	2009	2010	2011
Collection Cost	933,144	907,934	1,223,390	1,210,872	1,277,232	1,340,557
Processing Cost	369,071	414,222	477,429	433,188	442,601	263,074
Depot/Transfer Cost	3,359	3,143	3,208	12,715	182,848	245,359
P&E Cost	52	1,830	4,087	12,302	42,524	5,263
Admin Cost	42,120	43,611	55,798	54,233	69,031	63,331
Interest on Mun. Cap.	355	518	958	993	26,411	27,432
Gross Cost	1,348,101	1,371,258	1,764,870	1,724,302	2,040,647	1,945,016

Important trends to note are the processing and depot/transfer costs. As anticipated, the processing costs have reduced. This cost reduction is a direct result of the economies of scale present at the Niagara MRF. Adversely the depot/transfer costs have increased due to the shift in operations.

In order to accurately identify any efficiency gained through the implementation of this project, the cost centers directly affected must be compared. The completion of the CRTS directly impacts the processing

capacity and material handling portions of the program. Thus the overall processing cost and depot/transfer costs should be assessed.

In order to see the true “Apples to Apples” comparison, the processing costs and depot/transfer costs were adjusted slightly. Any of the costs within the Datacall relating to the capital investment (i.e. capital depreciation costs, etc.) were removed. Yes, these costs are real and need to be accounted for when addressing return on investment, but when comparing the pre and post implementation for operations, they are omitted.

Table 4 - Datacall Operating Summary (2006 - 2011)

	2006	2007	2008	2009	2010	2011
Processing Cost	366,220	411,372	474,579	430,694	420,760	241,203
Depot/Transfer Cost	3,359	3,143	3,208	12,715	57,094	116,038
Gross Cost	369,579	414,515	477,787	443,409	477,854	357,241

The costs in the table above are only those costs incurred through the operation of the Haldimand-Norfolk MRF and Haldimand’s transfer operations prior to project implementation and the costs incurred for the Niagara MRF processing fees and Haldimand’s new transfer fees post project implementation. As such this is the true impact of transitioning from operating our own MRF to transferring to a regional MRF, capital investment aside.

The cost savings from 2010 to 2011 are evident. We have realized \$120,613 worth of annual operational savings directly due to the implementation of this project. When comparing the 2009 costs to the 2011 costs, again we see savings, although not as dramatic, but still significant at \$86,168.

What is important to note, is the 2011 costs compared to the previous 5 years of operation. The 2011 operating year has seen the lowest cost in the past 5 years. The operational cost seen through the collaboration with Niagara Region has allowed Haldimand to take advantage of the economies of scale present in that market. Something the Haldimand-Norfolk MRF could never accomplish. That in its self is proof of the effectiveness of this best practice.

Although we have seen this cost reduction for 2011, Haldimand is aware that this will most likely be a one time event. The cost of fuel will rise as always which will drive up our transfer costs. Haldimand is committed to optimizing its operations to reduce the number of trips for transfer and maintaining a clean material stream off the curb in efforts to reduce overall costs. However, costs will increase for the program, but at a controllable rate.

5.3 Material Revenue

The Haldimand-Norfolk MRF is owned and operated jointly by Haldimand and Norfolk County. As the MRF is located in Norfolk County, Norfolk operates the MRF on behalf of both Counties. The revenues from the MRF were shared between the Counties based on a cost sharing formula derived from the tonnages delivered by both counties. For example if Norfolk brought in 60% of that years tonnage, Norfolk would receive 60% of the revenues. In essence each municipality received 100% of the revenues generated from the sale of their recyclable material.

Under the new program, Haldimand is delivering their recyclable materials to the Niagara MRF also under a cost sharing formula. The details of the cost sharing formula are confidential; however the outcomes are consistent with previous years. Haldimand and Niagara have agreed to use the “The Ontario Price Sheet” as provided through Steward Edge. The monthly composite index is applied to the full suite of material that Haldimand delivers and the revenue generated is shared between Haldimand and Niagara at an agreed percentage.

Material Audits are completed regularly and confirm that the material makeup of Haldimand’s Blue Box material is in line with those shown on the Price Sheet. This allows the use of the Composite index for a simple calculation.

As the composite index has been relatively high for the past 18 months, Haldimand has been realizing a net positive gain for the program. This is true when speaking of only the costs to operate the transfer station and the processing fees charged by Niagara. The capital costs have been removed in this assumption to allow for comparison. Under the assumption of costs for 2011, the revenue break even point for operations is roughly \$125/tonne. That is to say, as long as the operating costs remain relatively similar to those seen in 2011 and the composite index remains above \$125/tonne, a net positive program is seen. Should prices fall below that mark, losses will be realized.

5.4 Transtor System

Throughout the development of the 2008 report “MRF Optimization Study” prepared by 2cg in consultation with Haldimand County, the technology selected for transfer was the Transtor System. In essence the Transtor system involves the use of large rotating hoppers and self compacting long haul trailers. The operational logistics includes the loading of the Transtors via the curb side collection trucks, and then the Transtors rotate on their axes and fill the charge zone of the compaction trailer for compaction and transfer.

Throughout the first year of operation, the Transtor system proved to operate as designed. However Haldimand experienced operational issues regarding the contracted operation of the CRTS. Some of those issues included, contractor training, miss-use of equipment, etc. More details of these issues can be found in the quarterly monitoring reports included in Appendix B.

As Haldimand transitioned from a multi stream sorting program to a two-stream sort, the CRTS was designed to handle each stream separately. Generally there is one Transtor for each stream, serviced by three transfer trailers. Under normal operations, this system works fine, but during mechanical break downs or transportation logistic issues; this system does not provide adequate onsite storage for materials. Thus an alternative drop off location, the Norfolk MRF, is required to handle our blue box materials during these times.

5.5 Program Flexibility

As the Blue Box Program is ever evolving, an efficient material handling system must be adaptable. That is the case regarding the CRTS. By outsourcing the processing of the blue box materials to the larger MRF in Niagara, the impacts of program changes are also reduced. Should new materials be added to

the blue box, Haldimand can simply collect them and transfer them out. No need to make any modification to the CRTS.

The processing contract with Niagara has a 5 year term. Once that term expires, Haldimand will again issue an RFP for processing capacity. Should the successful bidder be a single stream MRF, then again no major modifications are required for the CRTS. Simply use each Transtor as one unit and transfer the material out. The only work required by Haldimand County staff would be the P&E program to advertise the reduced sorting requirements – again simplifying the system for the residents.

Actually, the current design of the CRTS would operate more effectively if we were able to collect the BB materials in a single stream. Using the Transtors to store both streams in each Transtor would remove almost all of the logistical issues Haldimand experiences due to onsite storage. However in discussions with other municipalities who use the Transtor system in single stream programs, the co-mingling of the fibre stream and the container stream could result in lower compaction ratios therefore hauling costs could potentially increase.

With the CIF completing its MRF Optimization Study for the province of Ontario, Haldimand is well suited for what ever the outcome is. Now that a transfer system has been implemented, Haldimand's ability to reach numerous MRFs is already established.

6 LESSONS LEARNED

6.1 Implementation

Although the implementation of this project went relatively smoothly, the only real issue was timing. As the existing Haldimand-Norfolk MRF operating contract was expiring in October 2010 we had a tight deadline to have the CRTS operational.

6.2 Construction

The construction phase of this project again went relatively smoothly. One of the lessons learned includes the design and construction. The orientation and location of the CRTS within the CWMF is situated in such a way that it is exposed directly to the West prevailing winds. A screening berm was constructed with the left over soils to help protect the operation, but really had no effect except to offer visual screening.

The winds prevalent at the CRTS pose an issue with regards to wind blown litter. The CRTS is situated so that the Transtors rotate perpendicular to the west prevailing winds. This prevents excessive wind forces on the units themselves while they rotate, but provides a wind tunnel effect when loading the compaction chamber. Additional wind screens were installed on the sides of the Transtors to aid in catching the blown litter before it can leave the unit. This helps but doesn't prevent litter.

Due to the structure of the contract to construct this CRTS, two separate contractors were on the site at the same time for short periods. This causes issues with – who is the Constructor? Delineation of work areas and adjustments to construction schedules were needed to avoid any confusion and to protect the County.

6.3 Operational Logistics

Of all the lessons learned on this project, the operation of the CRTS is the most valuable lesson learned. Haldimand County is a small municipality with limited staff and equipment resources. As such the operation of the CRTS was contracted out. The CRTS contractual operation looks like this:

1. Contracted curbside drivers operate the Transtors and the compaction trailers;
2. Contracted haulers transfer the materials to the MRF
3. Contracted site control, fueling of trailers, and clean up.

Having this system operated by various contractors proves challenging at times. The details can be read in the quarterly reports.

Other logistical issues were encountered relating to the unloading time for the curbside trucks. The time it takes to unload the curbside trucks is longer than estimated during the design of the system. Due to the increased unloading times, longer wait times are experienced by the curbside haulers ultimately effecting their operational hours.

The original design of the CRTS allowed for temporary storage of materials in the Transtor hoppers in the event a trailer was being moved around, still on route, or other system failures. This temporary storage would allow the curbside trucks to unload and return to route. However, the storage capacity of the Transtors only provides approximately 2 or 3 trucks worth of temporary storage. During the regular operating day, most of the trucks come off route at roughly the same time, thus there could be 5 to 7 trucks lined up and waiting to unload at the same time. Should a failure occur at this point, there is not enough temporary storage room to unload all the trucks.

A large operational and cost issue realized during the first year of operation remains to be the compaction ratios achievable in the transfer trailers. During the design of the CRTS assumptions were made for achieving material densities and the resulting tonnage capacity of each transfer trailer. The lower than anticipated tonnages in the trailers has resulted in an increase in the transfer rates which drive up transfer costs. Important lesson learned is to fully understand the materials you are transferring and the capabilities of your equipment to densify and handle that material.

APPENDIX A

PW-SW-01-2009 MRF Optimization Study RFP
PW-SW-05-2009 MRF RFP Award
PW-SW-08-2009 Contract Extension for MRF
PW-SW-10-2009 MRF Optimization Study
PW-SW-M04-2009 Information on PW-SW-10-2009
PW-SW-06-2010 CIF Funding Approval
PW-SW-07-2010 Award of Contract ES-SW-02-2010
PW-SW-08-2010 BB Transfer Station Contract
PW-SW-11-2010 Canborough WMF
PW-SW-13-2010 Rev Cont ES-SW-2007 04

APPENDIX B

CIF Project #241 – Q1 Report
CIF Project #241 – Q2 Report
CIF Project #241 – Q3 Report
CIF Project #241 – Q4 Report