

Final Report

CIF

#636.4

City of Kawartha Lakes P&E Initiatives for Plastic Packaging Recovery



Final Project Report, June 17, 2014

City of Kawartha Lakes

CIF Project Number 636.4

Acknowledgement:

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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.

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Executive summary

In September 2011, the City of Kawartha Lakes received a letter of approval from the Continuous Improvement Fund (CIF) for Project #636.4 (Communications & Education) Promotion & Education Initiatives for Plastic Packaging Recovery.

This plastics recovery project was employed to deliver a new method of promoting recycling messaging at the rural depots operated by the City of Kawartha Lakes and enhance current promotion & education (P&E) efforts. Specifically, the P&E efforts that were delivered included graphic design of vehicle wraps and development of signage for the five (5) public recycling depot drop-off points at the City's landfill sites.

Overall, the results from this project have been positive and the City has seen a decrease in the contamination levels at its five public drop-off depots. These methods of education have proven effective for the City and would recommend to other municipalities for consideration.

Thank-you to the Continuous Improvement Fund for providing the City of Kawartha Lakes with this funding opportunity.

BACKGROUND INFORMATION

1.1 Municipal Information

The City of Kawartha Lakes provides waste management services to 39,000 households. Blue box recycling is provided through alternating weekly two-stream collection services (blue container recycling and green fibre recycling). Residents also have the opportunity to bring their recyclables to five (5) public drop-off points at the City's open landfill sites. These depots are monitored by landfill attendants and the hours of operation at each site vary.

The City targets the following materials in the blue container recycling: Glass bottles, Polycoat, Metal Cans, Plastic Bag and Film, Plastic Containers #1 to #7 and Styrofoam. In the green fibre recycling the following materials are targeted including newspaper, fine paper, other packaging, boxboard and corrugated cardboard. Curbside collection and the transfer of recyclable materials to a material recovery facility are completed by Miller Waste Systems Inc. The City's recycling program is a member of the Rural Regional Group (#4), on the Waste Diversion Ontario datacall and operates at a net cost of \$2, 326,294 or a net cost of \$397/tonne of marketed material.

1.2 Project Description

This plastics recovery project was employed to deliver a new method of promoting recycling messaging within the City of Kawartha Lakes and enhance current promotion & education (P&E) efforts. More specifically, City staff focused on P&E to directly increase the collection of #3 to #7 plastic packaging. This messaging also incorporated the City's waste management branding logo, 'Be Waste Wise: Sort it Out!'.

This project focused on depot recycling as a "Plastics are In" campaign was completed in 2011 in partnership with several neighbouring municipalities which focused on curbside collection.

Funding was utilized for the graphic design and display of vehicle wraps for City Waste Management vehicles. Prior to project implementation, these City vehicles did not have any waste management messaging on their exterior; only the City's corporate logo.

Also, funding was utilized for the development of depot signage at the five (5) public drop-off points at the City's open landfill sites. Prior to project implementation these drop-off points did not have any signage to assist residents with the sorting and deposit of their recyclable materials. This traditionally led to high contamination rates.

2 IMPLEMENTATION

2.1 Goals and Objectives

Both the P&E efforts described in section 1.2 were employed with the goal of:

- 1) Increasing the collection of recyclable materials (specifically plastic packaging)
- 2) Reducing contamination levels at the public depot drop-off points

These goals would be accomplished through developing and employing the following objectives

- 1) Three (3)- tailgate vehicle wraps
- 2) One (1)- side panel vehicle wrap
- 3) Fifteen (15)- metal depot signs

2.2 Implementation Schedule

The following is the implementation schedule that was followed to deliver this project.

Item	Timeline
Secure CIF Funding & Sign Letter of Agreement	November 2011
Develop Content	April 2012
Secure Quotes	May 2012
Graphics Production	June 2012
Graphic Installation/ Launch (both vehicle wraps and signs)	July 2012
Monitoring and Measuring	July to December 2012

2.3 Budget

The following is the proposed and actual budget of this project.

Task	Proposed Budget	Actual Cost	% of Work Completed
Tailgate Vehicle Wraps	\$800	\$590	100%
Side Panel Vehicle Wraps	\$2,300	\$600	100%
Metal Signs	\$3,900	\$1470	100%
Total	\$7,000	\$2,660	100%

3 RESULTS

3.1 Results

Tracking methodologies that were utilized to determine if the goals and objectives of this project were achieved are summarized below.

Tracking Methodology	Source of Data	Ease of Collection	How Data was Quantified
Number of education pieces developed	Business Invoices	Easy	Receipt of Invoice, review by City staff
Monitoring Recycling Contamination	Five (5) public depot drop-off points (landfill sites)	Difficult	Visual inspections
Depot Recycling Tonnes	20-yard roll off bins from landfill sites	Easy	Weight scale tickets

The goals and objectives were met with a varying degree of success. The amount and weight of recyclable materials, specifically plastic packaging, collected did not increase over the year. In fact, they went down across all of the depots by an average of 28%. This can be attributed to three things: a contractor change to Miller Waste Systems who may handle their numbers differently; a reduction in contamination in the front end bins as residents stopped putting unacceptable materials in the bins; and the light weighting of plastic packaging. Lastly, tonnage may have gone down due to reduced resident participation, but there is no definite proof this happened.

The second goal was achieved, as contamination did go down. However, as no quantitative way to measure this contamination was established, no clear numbers exist for reduced contamination.

3.2 Analysis of project

3.2.1 Number of Education Pieces Developed

The following table presents the results for education pieces that were developed for this project.

Item	Proposed	Actual	Performance
Tailgate Vehicle Wraps	3	4	Target exceeded by 25%
Side Panel Vehicle Wraps	1	1	Target Met
Metal Signs	15	14	Target missed by 7%

Overall, the City was able to exceed the number of education pieces created through this project by 18%. This was accomplished by receiving improved pricing through an informal quotation process. It should be noted that the production of the metal signs was decreased as a result of reducing the number of 20-yard roll off bins available at the public drop-off depot points due to limited physical space at the sites.

The production of these signs proved to be an easy process as well as installation on the vehicles and at the depot sites. In terms of other types of P&E materials created, I would recommend vehicle wraps and site signage as an inexpensive method of advertising recycling messaging. Photos of the P&E items that were developed are shown below.

Photo 1: Container Sign



Photo 2: Fibre Sign



Photo 3: Tailgate Vehicle Wrap



Photo 4: Side Panel Vehicle Wrap



3.2.2 Monitoring Recycling Contamination

The metal signs that were created were adhered to the outside of 20-yard roll off bins that are located at each of the City's landfill sites and serve as a public drop-off point for recyclable materials. At each landfill site, there are multiple 20-yard roll off bins to sort container and fibre recyclable materials. These signs were adhered to these bins with magnets to allow them to be removable.

The bins are monitored daily (end of each day of operation) by staff through informal visual inspections to ensure that contamination levels remain low. When the installation of these signs occurred, these visual inspections continued to occur.

The number of daily visual inspections that were conducted from July 2012 to December 2012 is summarized in the table below.

Month Inspection Completed	Lindsay Ops Landfill	Fenelon Landfill	Somerville Landfill	Laxton Landfill	Eldon Landfill
July	12	7	10	4	6
August	22	13	17	9	13
September	21	13	17	9	14
October	22	14	18	8	11
November	22	12	17	9	8
December	22	14	18	9	9
Total Inspections Completed	121	73	97	48	61

In total, there were 400 daily visual inspections completed by landfill staff of the public depot drop-off bins for a five (5) month period after the installation of education signage. It was noted that a decrease in contamination items was seen however, no formal documentation to quantify the percentage decrease in contamination was completed due to limited staff time.

3.2.3 Depot Recycling Tonnes

All recycling collected, either at the curb or at the depot drop-offs, is consolidated at a transfer station building located at the Lindsay Ops landfill site. The recyclable materials are tipped onto the floor in the facility by the City's collection contractor. Plastics are not separated and get mixed in with the rest of the recyclables throughout the process all the way to the MRF where everything is properly separated. On a monthly basis, the number of lifts required and tonnes transported to the transfer station facility are reported to the City based on weigh scale tickets. The number of lifts required and tonnes collected from the public depot drop-off points for July to December 2011 and 2012 are presented in the tables below.

2011	Fenelon		Somerville		Laxton		Eldon	
	# Lifts	Tonnes	# Lifts	Tonnes	# Lifts	Tonnes	# Lifts	Tonnes
June	10	10.9	1	1.2	3	3.2	5	5.5
July	10	10.7	5	5.5	8	7.2	5	4.5
Aug	9	9.9	4	5.4	3	2.6	6	6.1
Sept	7	8.1	4	3.4	2	2.0	2	2.1
Oct	8	8.8	4	2.8	5	2.7	4	3.5
Nov	5	6.2	3	1.6	2	1.1	0	0

Dec	3	3.9	2	1.2	2	1.3	3	1.8
Totals	52	58.5	23	21.1	25	20.1	25	23.5

2012	Fenelon		Somerville		Laxton		Eldon	
	# Lifts	Tonnes	# Lifts	Tonnes	# Lifts	Tonnes	# Lifts	Tonnes
June	5	3.2	0	0	2	2.5	2	1.4
July	8	6.0	6	4.0	5	2.7	4	2.9
Aug	10	7.8	6	3.5	5	3.7	6	4.1
Sept	4	3.0	2	1.5	5	2.6	3	1.1
Oct	5	5.1	1	0.9	3	2.8	4	2.2
Nov	4	3.5	2	1.3	2	2.6	3	2.9
Dec	5	6.8	2	1.4	2	1.3	3	3.1
Totals	41	35.4	19	12.6	24	18.2	25	17.7

It should be noted that the number of lifts and tonnes for the fifth landfill site- Lindsay Ops- are not recorded in the two tables above as these quantities are tracked through a different method that cannot be compared to this information. Also, in September 2011, the City executed a new collection contract with Miller Waste Systems Inc.

To verify the reduced contamination that was seen during the visual inspections the number of lifts and tonnes collected from four of the City's public drop-off depot locations from 2011 and 2012 were compared. A trend of decreased number of lifts and decreased collected tonnes can be seen in the table below.

Year	Fenelon		Somerville		Laxton		Eldon	
	# Lifts	Tonnes	# Lifts	Tonnes	# Lifts	Tonnes	# Lifts	Tonnes
2011	52	58.5	23	21.1	25	20.1	25	23.5
2012	41	35.4	19	12.6	24	18.2	25	17.7
Trend	21% ↓	40% ↓	17% ↓	40% ↓	4% ↓	9% ↓	0%	25% ↓

Other than a change in collection contractor, the only other change with the public recycling drop-off depots from 2011 to 2012 has been the addition of the education signage. Overall, an average 10% reduction of the number of lifts required and an average decrease of 28.5% in the quantity of tonnes collected have occurred. This may be a direct result of contaminated items being disposed of in an appropriate manner and not ending up in the recycle bins at the public drop-off depots.

The key take away from the installation of these signs is that signs that have many graphic and few words are effective to assist residents with the correct recycling of their materials. The City continues to recommend this as an effective method of education.