Final Report

CIF 875

City of Woodstock
Depot Upgrade

Woodstock
ONTARIO • CANADA

Final Project Report, October 31, 2018
City of Woodstock
CIF Project number 875
Prepared for:
Resource Productivity and Recovery Authority
Continuous Improvement Fund

Acknowledgement:

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EXECUTIVE SUMMARY

This is the final report of a project implemented by the City of Woodstock to improve public safety, allow for the source separation of Styrofoam packaging material and increase the hours of operation of the recycling depot. The City applied to the Continuous Improvement Fund for financial and technical assistance in completing upgrades to the City's depot / waste transfer site to meet the objectives of the project.

The City completed site upgrades through three phases of project work:

1. Site modification to prepare for a new covered storage structure and to move the public access drop off site outside of the public works yard
2. Construction of a covered storage structure for management of materials
3. Renovations to the existing structures

The project budgeted costs at $101,000 to complete the work, but actuals amounted to approximately $118,000 due to the purchase of additional bins at the depot in the amount of $9,000 for bins to manage greater than anticipated volumes of material and higher than projected costs for the storage building.

This project has made recycling more accessible to residents within the City of Woodstock and the County of Oxford and allowed for a difficult material to be source separated for recycling. Resident reaction to the depot site have been overwhelmingly positive. Volumes were greater than anticipated, resulting in additional labour inputs to manage the materials collected at the depot site.

Some issues did arise with the new hours of operation of the depot in terms of waste being deposited in the recycling bins. This has since been addressed by reducing the number of hours available for residents to drop off materials. Currently, the depot collection program is open for 12 hours a day; 8am – 8pm.

Expanded polystyrene had been collected successfully through the new facility. Staff were pleased with the source separation of the material and resident compliance with the program was good. The recycling market for source separated Styrofoam through the City's marketing agent has disappeared and as such, EPS is not currently being collected through any City run programs. Should a viable market for this material become available again, the City can reinstate this program. The depot will also allow for any other future materials that may need to be source separated for recycling as the methodology has proven itself.

City staff is pleased with the results of this investment and would like to extend their thanks to the Continuous Improvement Fund for financial and technical support in completing the project.

For further information about this project, please contact:

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1 PROJECT INFORMATION

1.1 Municipal Information

The City of Woodstock (City) provides a depot and biweekly two stream curbside recycling services to 17,151[1] households. Through its Promotion and Education efforts, the City targets the following materials: fibres, containers including PET, film plastics polycoat, HDPE, polystyrene, aluminum, steel, and glass for the curbside collection program. Stryofoam is source separated at the recycling depot to ensure it is a clean and uncontaminated source for recycling.

The Works Division of the City of Woodstock is responsible for the operation of the recycling program. During the last few years, many changes within the department have occurred. From our improved recycling program that collects more materials, to the bag tag program we have for garbage, the City is trying to provide incentives to deal with waste properly.

To assist in increasing the overall waste diversion in Woodstock, the recycling depot was improved to make it safer and more accessible to residents by increasing the hours of operation while increasing the materials collected for recycling by adding Styrofoam collection at the depot.

1.2 Project Description

The Continuous Improvement Fund (CIF) provided Staff with technical assistance and a grant to improve the recycling depot at the City of Woodstock. Improvements included addressing public safety issues, increasing the hours of operation and adding the ability to source separate materials at the source. City staff used their experience in the construction and operation of this depot to provide input in the CIF depot handbook.

The existing depot consisted of four one cubic yard bins at the side of the transfer station building. Residents would enter the yard through the gates to drop their blue box recyclable materials off. For residents to exit the depot, they had to do a three point turn to turn around in front of the exit door to the recycling transfer station and then leave the site. This turning movement created an unsafe interaction for staff with the public with the potential of the public backing into a recycling truck or tow motor that was leaving the transfer station.

[1] Statistics Canada Census, 2016

2 Project Implementation

2.1 Existing Conditions

The hours of the depot were limited to the hours of the transfer station as the depot was within the gated compounded. Plus there was not an opportunity to further source separate materials other than the two stream recycling due to limited space, both in bins and material storage.

Figure 1: Picture of the existing depot within the transfer station in May 2009

2.2 New Depot

With the assistance of funding from the Continuous Improvement Fund for Phase 1, the City was able to relocate the location of the depot bins, purchase four additional larger bins with two cubic yard capacity and construct a new material storage facility for storage of source separated materials.

Figure 2: Newly constructed depot with the concrete curb, October 2014

The new depot consists of a simple concrete curb with an access road from Clarke Street to allow residents to drive alongside the bins and safely deposit there blue box materials into the appropriate bins. Staff would work on the other side of the concrete curb shuttling the bins from the depot to the transfer station without having to drive around public vehicles. In addition to this, staff no longer had the public inside the transfer station as the area is secure with a perimeter chainlink fence, improving the safety for both the public and the workers. Having the bins outside of the fenced in compound of the transfer station also allowed for the increase in the operating hours of the recycling depot.

Four new steel bins were purchased for this depot to increase the capacity from four cubic yards to eight cubic yards. The bins the City purchased for the new depot were tipping bins that could be moved with the existing tow motor and had polyethylene lids to reduce materials blowing around. The bins were colour coded and labelled for containers, fibres and source separated Styrofoam. Staff searched the local markets for these bins and eventually found a welding manufacturing company in Michigan that constructs a tipping bin with lids. The bins have proved to be adequate, however the welds used to construct the bins have been reinforced due to breakage overtime.

The existing hours of operation of the depot was limited to the hours of the transfer station, Monday to Friday 8:00am to 3:00pm. Relocating the depot outside of the perimeter fence not only addressed a safety issue, but allowed the City to increase the hours of operation of the depot. When the depot first opened in late 2014, the hours were 8:00am to 11:00pm. The hours of operation were reduced to 10:00pm approximately six months after opening as there was not a lot of usage after 10:00pm.

Staff further reduced the operating hours to 8:00pm, again for the limited usage in the evening and the issues arising with contamination of non-recyclable materials being dropped off in the dark. The current hours of operation are 8:00am to 8:00pm and these hours meet the needs of the community. Traffic counters were installed to verify the hours of usage of the depot to assist in the decision in reducing the hours of operation.

2.3 Material Storage

Phase 2 of the depot project was the construction of a 36'wide by 42' long fabric covered storage building. Many different options were considered and the City selected a fabric covered building with precast concrete walls. The building size was determined by calculating the space required to store one tractor trailer load of source separated baled cardboard when stacked in a pyramid configuration and then doubling it in size. A concrete divider wall was installed in the middle of the building to keep the materials separated. This calculation also met the space limitations of the site.

The other side of the building is used for source separated Styrofoam collected from the depot. Styrofoam is dumped loose in this side of the building and when this side is full, the material is manually loaded into a rear packer truck and transported to our MRF contractor for processing.

Figure 3: Fabric Storage Building

3.0 Advertising Campaign

A simple advertising campaign was used to promote the extended hours of the recycling depot and the ability to drop off Styrofoam packaging material for recycling. Print ads as shown in Figures 4 and 5 were published in the local What's on Woodstock Magazine and the local Shopping News. The What's on Woodstock Magazine is a monthly publication produced by the City to inform residents of what is happening the community and is circulated to all residents within the City of Woodstock. The Shopping News is a weekly publication delivered to houses within Oxford County with a weekly news review and shopping flyers.

The extended hours of the depot has been successful with the increased usage of the depot. Traffic counting has verified the usage of the depot in the extended hours and staff have commented on the increase in usage throughout the year. Simple signage at the depot also shows what materials are accepted in the City of Woodstock recycling program as shown in Figure 4. Unfortunately with the change in the recycling markets, Styrofoam is no longer accepted at the depot.

Figure 3: Left: Depot Advertisement used for after Christmas and Right: Current recycling depot signage

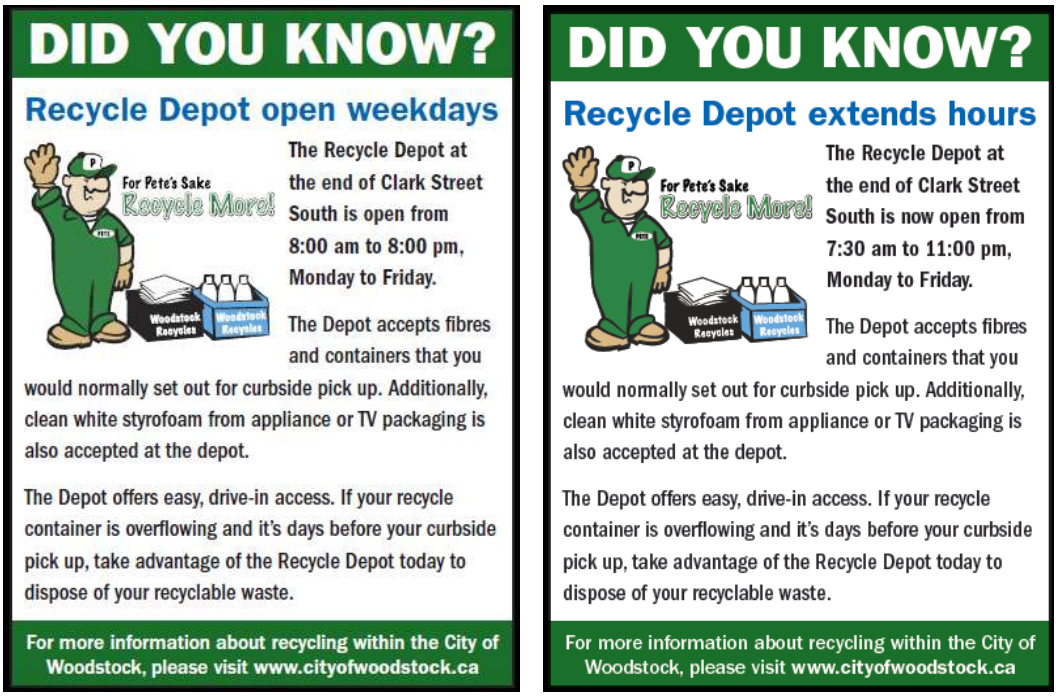

Figure 4: Left: Depot advertisement January 2018 and Right: Depot advertisement March 2015

4.0 Budget

The estimated budget for this project was $101,573.60. The Continuous Improvement fund provided funding for this project in the amount of $34,894. Phase one of the project was for the relocation and construction of the depot with an estimated budget of $16,573. The costs associated for this project was $10,204.

Phases 2 and 3 where combined. This portion of the project was the construction of the storage building to contain the source separated Styrofoam material and some interior renovations. The budget at the time of the submission was $85,000 and was increased to include the contribution made by CIF, however knowing that the grant money was not going to increase. The cost of the storage building was $108,412.

On the entire project, the cost was $118,412. Based on the funding agreement, the City has invoiced the Continuous Improvement $34,894.

The overages within the budget are for some additional bins at the depot in the amount of $9,000 for bins and higher than anticipated costs for the storage building.

5.0 Operating Expenses

The existing depot was staffed with a split in duties of the Assistant Supervisor assigned to empty the bins as part of his daily work assignment. The intent was to be able to maintain this staffing assignment, however with the depot improvements became more successful with the increase usage by the public. Therefore, the City has had to allocate a full time employee to the depot during the day to keep up with the demand. With the reducing the hours in the evening to 8:00pm, the afternoon shift can manage the depot and work in the transfer station.

After a Holiday it is common to see lineups of vehicles coming to drop off blue box materials. On days the depot is not open, the public has dropped off blue box materials, causing the City added expenses in cleaning up the depot. The picture below is material dropped off after a weekend. This kind of activity supports the need to increase the availability of the recycling depot to the public, however there is a cost associated with staffing the depot to empty the bins.

6.0 Dealing with Problematic Materials

The depot was constructed to deal with the problematic material of Styrofoam in the Blue Box. At the time of this project, the best way to deal with this material was to source separate this material and the best way was to do this through a depot. The depot was constructed to include this material.

The addition of the source separated Styrofoam to the depot was not a major operating expenses as a staff person and equipment was already assigned daily to empty the bins. The only costs associated with adding Styrofoam was the capital costs of the bin and the additional storage.

During the spring of 2018, the City decided to stop accepting Styrofoam at the depot because the end market for Styrofoam processing no longer existed, leaving no viable market for this material. Today, Styrofoam is not being collected at the depot and the staff requirement for the depot remains the same. Should a market become available for Styrofoam material and need to be source separated to deal with this material, the bins can be reinstated at the depot.

Figure 5: July 2016 weekend

7.0 Depot Cost Model

As part of this project, the City was asked to assist with the Continuous Improvement Funds depot cost model project. This model was developed after this depot was constructed, allowing City staff to provide design considerations and costs for operating, constructing and advertising a blue box recycling depot.

Staff were able to use this model to verify operating costs and prove the model for CIF to ensure the costing model will give a true representative cost of constructing and operating a depot for future projects.

8.0 Results

The depot has been a successful project in terms of addresses the safety issues, increasing the bin capacity, increasing the hours of availability to the public and allowing for the source separation of materials. Table 1 shows the usage of the depot continues to be strong.

Table 1: recycling weights in tonnes collected at depot

Depot Recycling Weights (tonnes)					
	2014	2015	2016	2017	2018
Fibres	534	294	68	152	345.1
Containers	106	129	171	129	105.3
Styrofoam	n/a			1.88	0.44

Although the recycling market for source separated Styrofoam has disappeared, should a viable market for this material become available again, the City can reinstate this program. The depot will also allow for any other future materials that may need to be source separated for recycling.

9.0 Conclusions

City staff are very satisfied with the project as a whole. The newly upgraded facility has improved public safety, provided for the source separation of Styrofoam packaging material (or other streams if necessary), and increased the hours of operation of the recycling depot. This project has made recycling more accessible to residents within the City of Woodstock and the County of Oxford and allowed for a difficult material to be source separated for recycling.

City staff is pleased with the results of this investment and would like to extend their thanks to the Continuous Improvement Fund for financial and technical support in completing the project.