



Oxford County Single Stream Conversion, P&E Support Campaign  
CIF Project Number # 947

Final Report  
Date March 13, 2017

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

## **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.*

*© 2017 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

Executive Summary.....	i
1 Introduction .....	1
1.1 Oxford County .....	1
1.2 Project Rationale.....	1
1.3 Project Goals and Objectives .....	1
2 Background .....	3
2.1 Community Profile .....	3
2.2 Waste Management System.....	4
2.3 Current Waste Management Performance .....	5
2.4 Program Challenges .....	6
3 Approach.....	8
3.1 Promotion and Education Plan .....	8
3.2 Monitoring and Measurement Plan.....	9
3.3 Contractor Compliance Plan .....	9
3.4 Monitoring and Measurement Methodology.....	10
3.4.1 Audit Results for Curbside Waste, Recycling, Residual Waste and Participation Rates .....	10
3.4.2 Customer Service Data.....	10
3.4.3 Tonnage Data .....	10
3.4.4 Public Engagement Activities.....	10
3.4.5 Financial Analysis .....	11
3.5 Monitoring Challenges, Limitations and Solutions .....	11
4 Project Results and Analysis .....	12
4.1 Project Results .....	12
4.1.1 Audit Results .....	12
4.1.2 Customer Service Data.....	14
4.1.3 Tonnage Data .....	15
4.1.4 Public Engagement Activities.....	15
4.1.5 Financial Analysis .....	17
4.2 Analysis of Results.....	17
4.3 Lessons Learned.....	17
5 Project Budget.....	19
6 Conclusions .....	21

Appendix A – Promotion and Education Plan: Communication Critical Path .....	22
Appendix B – Monitoring and Measurement Plan: Critical Path .....	24
Appendix C – Contractor Compliance Plan: Critical Path .....	26

## Figures

Figure 1: The Impact of a Full User Pay System on Curbside Waste and Recycling Tonnages .....	6
Figure 2: Blue Box Composition Audits, 2011 and 2016 .....	13
Figure 3: Monthly Missed Collection Calls, Old System vs New System .....	14
Figure 4: Collection Calendar Widget, 2015-2017 .....	16
Figure 5: Waste Sorting Game - Game Plays, 2016 .....	16

## Tables

Table 1: Oxford County Population and Household Count, 2014 .....	4
Table 2: Oxford County Garbage and Recycling Collection System, 2001-2014 .....	4
Table 3: Waste Management System Overview for Oxford County, 2014 .....	5
Table 4: Oxford County Garbage and Recycling Collection System, 2015-2016 .....	7
Table 5: Waste and Recycling Set-Out Rates, 2010 and 2016 .....	12
Table 6: Participation Rates, 2010, 2015, and 2016 .....	13
Table 7: Missed Collection and Performance Issue Customer Service Calls, 2014-2016 .....	15
Table 8: Comparison Between 2014 & 2016 Curbside Garbage and Recycling Collection .....	15
Table 9: Project Budget - Approved and Actual .....	19

## Executive Summary

In 2015 the Oxford County received project funding from the Continuous Improvement Fund to support the updating of its curbside collection program which was expected to increase the blue box capture rate, optimize collection efficiencies, and reduce program costs. Historic collection services consisted of three separate collection programs, servicing eight municipalities within the County, providing weekly garbage collection under a full user pay system and bi-weekly two stream recycling collection with varying acceptable program materials. Under the new system three separate collection programs would still exist within the County but the harmonization of the acceptable blue box material list would occur. Additionally, six of the eight municipalities would see a change in service to full user-pay system with weekly co-collection of garbage and single stream recycling. One municipality would offer co-collection of garbage and single stream recycling on a six business day rotating schedule and one municipality would maintain the historic collection system.

An extensive public engagement process and analysis of program efficiencies within the current collection program was undertaken through the County's Waste Management Strategy in 2014. Through this process the County identified that opportunities for program cost savings in excess of \$300,000 from the historic to new program, while enhancing service delivery could be realized. Undergoing route rationalization and the co-collection of garbage and recycling would allow the County to increase the frequency of blue box collection without increasing programming costs. Lastly, the County projected that through these changes its blue box capture rate would increase by 15% and achieve a 7% residual waste rate in a single stream recycling system.

Project results with seven of the eight municipalities implementing the new curbside collection program resulted in the County's blue box capture rate increasing by 12% and achieving a 6% residual rate. Garbage tonnages across the eight municipalities decreased by 4%. The overall curbside garbage and recycling collection and recycling processing program costs resulted in a 15% annual savings (\$351,788). Customer satisfaction with the curbside collection program increased and service calls and the need for subsequent collection inspections decreased. Additionally, resident use of the resource tools found on the County's new waste management website, Wasteline.ca and its new mobile app, Wasteline, continue to be actively used by residents.

Program success can be widely attributed to the efforts of a transition team consisting of representatives from five departments within the County, bringing to the table varying degrees of expertise and skill sets, which resulted in a smooth transition to the new collection program. The total cost of this promotion and education project was \$109,294, 39% under budget. At 41,500 households, the cost per household to deliver this project was \$2.38.

For more information please contact:

Pamela Antonio | Waste Management Coordinator | Oxford County  
p: 519-539-9800 ext. 3114 | e: [pantonio@oxfordcounty.ca](mailto:pantonio@oxfordcounty.ca)

# 1 Introduction

## 1.1 Oxford County

Oxford County is located in Southwestern Ontario, between Kitchener-Waterloo and London, consisting of eight municipalities: the City of Woodstock, the Towns of Tillsonburg and Ingersoll, and the Townships of Blandford-Blenheim, East Zorra-Tavistock, Norwich, South-West Oxford, and Zorra. Agricultural business is well supported in Oxford County with approximately 35% of all households in the County located in rural communities.



The County has a population of 105,719 and a household count of 45,843. As the upper tier municipality, Oxford County is responsible for the delivery of curbside garbage and recycling services to residents residing in eight (8) municipalities. Within this waste collection system, the County retains the services of a private contractor to collect waste and recyclable materials for six (6) municipalities, while the City of Woodstock and the Township of South-West Oxford have been contracted to perform their own curbside collection services through the use of their municipal forces.

## 1.2 Project Rationale

Since 2010 the County has noticed curbside waste and recycling tonnages have remained unchanged. Upon further examination of the waste and recycling stream, the County identified that a considerable amount to blue box materials were making its way into the waste stream while the recycling stream had higher than desired levels of residual waste. Additionally, public engagement activities identified high resident program confusion due to three different curbside collection programs operating within the County. Lastly with growing program costs and the County desire to divert as much waste as possible from landfill while lowering the County's greenhouse gas emissions, the County determined that it was time to make some significant changes to the curbside collection program.

## 1.3 Project Goals and Objectives

Under the new curbside collection program six area municipalities would move from weekly garbage and bi-weekly two stream recycling collection to weekly co-collection of garbage and single stream recycling. The seventh municipality would move from weekly garbage and bi-weekly two stream recycling collection to weekly co-collection of garbage and single stream recycling based on a rotating six business day collection system (similar to the City of London model). This rotating six business day cycle would be

implemented as a pilot to evaluate whether additional program efficiencies could be realized while still maintaining and/or increasing their curbside blue box capture rate. The eighth municipality (City of Woodstock) would continue with the existing weekly garbage collection and bi-weekly two-stream recycling collection program.

While the County had intended to align all three programs with the identical collection system, the program changes did result in aligning the acceptable material list for blue box collection as well as aligning collection standards for garbage and recycling. By standardizing this portion of the program residents would be able to place the same type of material at the curb for pick-up regardless of who is performing their curbside collection.

The goals and objectives of this new collection system were to:

1. To increase resident awareness of the three different curbside collection programs offered in the County.
2. To increase the County's overall blue box diversion rate.
3. To increase the County's overall residential blue box participation rates.
4. To decrease the County's overall blue box residual waste rate.
5. To decrease the County's overall blue box program costs.

## 2 Background

Under the County's curbside collection program, participants (residential, multi-residential and IC&I – only those operations located on a residential collection routes) can participate in the curbside collection program as long as set outs (garbage and recycling) weigh no more than 20 kg (44 lbs) per bag/container; placed at the curb by 7 a.m. on the day of collection; and placed no further than one meter from the curb. Additionally, all garbage set outs must have an Oxford County bag tag affixed to the set out as the County operates a full user pay system. The County does not have a limit on the number of bags/containers of garbage that can be placed at the curb.



The full user pay system was implemented County wide in 2002 of which the County noticed a tonnage decrease of 4,000 tonnes within the first twelve months of implementation. By 2006 the County's annual curbside collection tonnage decreased by 7,300 tonnes as a result of the County wide bag tag program. Since 2007 the County's annual curbside garbage collection tonnage remains at around 13,700 tonnes annually (note, this number excludes bulk collection tonnage).

An increase in blue box tonnage of 2,000 tonnes was observed by the County when the full user pay system was implemented in 2002. However, from 2003 - 2014 the County's annual blue box tonnage has remained relatively the same, averaging around 6,800 tonnes annually.

### 2.1 Community Profile

Geographically Oxford County spans 2,049 square kilometers and supports strong urban and rural communities. The population growth for the County rests at less than 1% per year with the heaviest population growth located in the County's three urban centres, the City of Woodstock and the Towns of Ingersoll and Tillsonburg.

As expected in an urban/rural municipality, single family homes are the prominent residential structure. While multi-family dwellings exist in the County, they tend to consist more of townhouses and three story walk-ups, outside of the City of Woodstock which is home to several apartment high-rises.



The community profile for the County can be summarized in the table provided below.



**Table 1: Oxford County Population and Household Count, 2014**

Municipality	Population	Single Family Households	Multi Family Households	Total Households
Township of Zorra	8,058	3,288	65	3,353
Township of East-Zorra Tavistock	6,836	2,619	153	2,772
Township of Blandford-Blenheim	7,359	2,825	68	2,893
Township of Norwich	10,721	3,881	44	3,925
Township of South-West Oxford	7,544	3,092	15	3,107
Town of Ingersoll	12,146	4,723	480	5,203
Town of Tillsonburg	15,301	6,241	1,014	7,255
City of Woodstock	37,754	15,783	1,567	17,350
<b>Total</b>	<b>105,719</b>	<b>42,452</b>	<b>3,406</b>	<b>45,858</b>

Source:

Population Count - Statistics Canada 2011 Census Profile

Household Count – MPAC

The County's curbside collection program is heavily influenced by the City of London's and the Region of Waterloo's curbside programs as many County residents commute to these larger urban centres for employment and/or read about these programs in the local newspapers. This cross boundary influence created an expectation among County residents that an updated curbside collection program was needed. The difficulty in doing so was that the heavy rural presence in the County made operating a cost effective curbside collection program challenging.

## 2.2 Waste Management System

In 2001 the County assumed responsibilities for waste and recycling collection services. In doing so the County became responsible for programing, promotion and education, service delivery, program costs and provincial reporting associated with waste and recycling collection for all eight municipalities residing within the County's borders. Table 2 below identifies curbside collection and disposal/processing responsibilities under the new waste management structure for the County from 2001 - 2014.

**Table 2: Oxford County Garbage and Recycling Collection System, 2001-2014**

Services		Service Providers				
		Ingersoll	Tillsonburg	Blandford-Blenheim, East Zorra-Tavistock, Norwich, Zorra	South-West Oxford	Woodstock
Garbage*	Collection – Curbside Weekly	County – Emterra Environmental			South-West Oxford	Woodstock
	Disposal	County				
Blue Box*	Collection – Curbside Bi-weekly	County – Emterra Environmental			South-West Oxford	Woodstock
	Processing	County – HGC Management			Woodstock – Canada Fibres	

\*These programs are open to the industrial, commercial, and institutional sector as long as program requirements are met.

As the waste management program evolved and new collection/diversion programs were added to the overall County Waste Management System, the County entered into Municipal Waste Management Service Agreements with each area municipality in 2008. These agreements outlined specifics pertaining to program service delivery, roles and responsibilities, and program costs including Municipal and County responsibilities.

In 2002 The County implemented a full user pay system across all eight municipalities. The price of bag tags introduced at \$1.00/bag, increasing to \$2.00/tag by 2014. The purpose of the bag tag system was twofold, first, all costs associated with the collection and disposal of curbside waste was to be covered by bag tag revenue and second, the County hoped that the use of bag tags would drive diversion throughout the County.

While intended for the residential sector, the curbside collection program was made available to the multi-residential and IC&I sectors located on a residential collection route and who complied with program guidelines which were:

- Waste and recycling placed within one meter of the municipal curb
- Waste set outs tagged with Oxford County bag tags and each bag/container not exceeding 20 kg (44 lbs)
- Recycling set outs separated into two streams, not exceeding 20 kg (44 lbs) with 360 litres (95 gallon) totes available to the multi-residential and IC&I sectors

## 2.3 Current Waste Management Performance

The information contained in Table 3 below represents the County waste management performance prior to the start of the CIF project for all eight municipalities contained within the County's borders.

**Table 3: Waste Management System Overview for Oxford County, 2014**

		Blue Box Recycling		Total Waste Diversion		Disposal		Generation (Total)	
	Units	rate	% of total	rate	% of total	rate	% of total	rate	%
GAP Reported	tonnes	10,533	26%	19,732	49%	20,440	51%	40,172	100%
	Kg/hhld	233	26%	437	49%	453	51%	890	100%
Single Family	tonnes	9,740	26%	18,247	49%	18,901	51%	37,148	100%
	Kg/hhld	233	26%	437	49%	453	51%	890	100%
Multi Family	tonnes	793	26%	1485	49%	1,538	51%	3,024	100%
	Kg/hhld	233	26%	437	49%	453	51%	890	100%

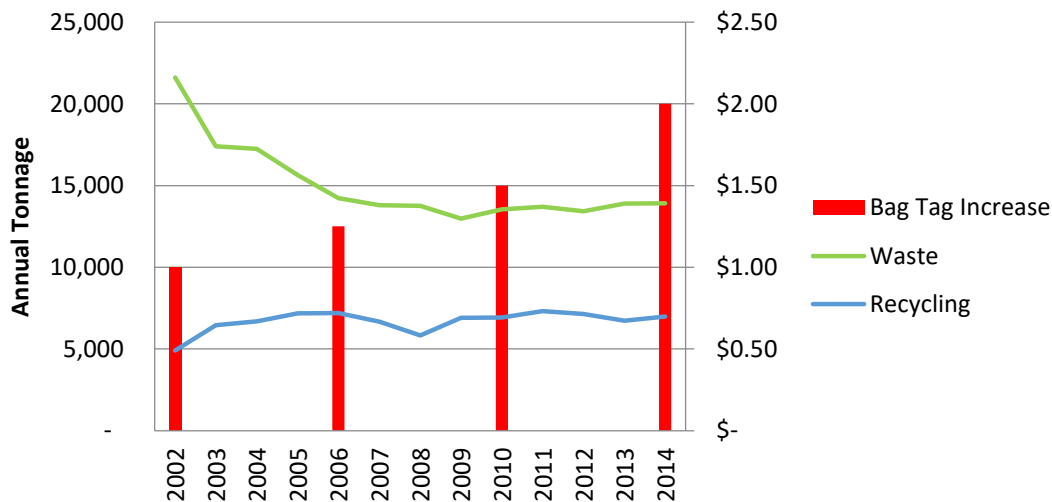
## 2.4 Program Challenges

In 2013 staff identified a need to develop the County's first ever [Waste Management Strategy \(WMS\)](#). The rationale for undertaking this project was based on the following:

- The revenue gained from increasing the cost of bag tags did not match the inflationary increase observed with waste collection and disposal costs, resulting in annual waste program deficits.
- The average residential garbage bag consisted of 24% (by volume) of blue box materials.
- The recycling stream contained 9% (by volume) of residual waste.
- Since 2010 the curbside waste and recycling tonnages remained unchanged.

During the research and analysis phase of the WMS, staff identified that while decreased waste tonnages and increase recycling tonnages were realized upon the implementation of bag tags, subsequent bag tag price increases had little to no impact on the material tonnages. Figure 4 below illustrates the historical changes in material tonnages when a full user pay system was implemented across the County.

**Figure 1: The Impact of a Full User Pay System on Curbside Waste and Recycling Tonnages**



Additionally, the public engagement portion of the WMS identified that residents were interested in modernizing the current curbside collection program, moving from bi-weekly two stream recycling and weekly garbage collection to weekly garbage and recycling collection with more acceptable blue box materials.

With the knowledge gained through the WMS (adopted by Council in 2014), staff was directed to:

- Increase curbside recycling collection.
- Expand the acceptable material list for the blue box program.
- Minimize the differences between the three curbside collection programs operating within the County.

- Increase public education and awareness surrounding recycling and overall waste diversion in an effort to capture the blue box materials present in the waste stream.
- Lower the overall program cost of the curbside collection program for both waste and recycling.
- Reduce the amount of greenhouse gas emissions generated from the curbside collection program.

As a result of this process and an extensive RFP process staff came back to County Council with a proposal to implement a co-collection of waste and single stream recycling on a weekly basis, including a more extensive acceptable blue box material list that would ultimately save the County approximately \$380,000 in annual operational program costs as well as decrease greenhouse gas emissions caused by the collection vehicles. The new garbage and recycling system is depicted in Table 4 below.

**Table 4: Oxford County Garbage and Recycling Collection System, 2015-2016**

Services		Service Providers				
		Ingersoll	Tillsonburg	Blandford-Blenheim, East Zorra-Tavistock, Norwich, Zorra	South-West Oxford	Woodstock
<b>Co-Collection Garbage and Single Stream Recycling*</b>	Curbside Collection – Weekly	County – HGC Management				
	Curbside Collection – 6 day Cycle				South-West Oxford – Municipal Staff	
	Disposal	County				
	Processing	County – HGC Management				
<b>Weekly Garbage and Bi-weekly Two Stream Recycling*</b>	Curbside Collection – Bi-weekly					Woodstock – Municipal Staff
	Disposal	County				
	Processing					Woodstock – Canada Fibres

Furthermore, under the new blue box program, residents living in all eight area municipalities would be able to recycle the same blue box materials, allowing the County and area municipalities to harmonize its promotion and educational material. This meant that there would no longer be confusion among the residential community on what materials are collected through the three individual curbside collection programs. By implementing this new collection and recycling processing program, the County expected to lower the overall blue box program costs, increase its blue box capture rate by approximately 15%, and reduce its residual blue box waste from 12% to 7%. This initiative was approved by Council in February 2015 with a program implementation date of September 14, 2015.

### 3 Approach

The primary focus of this funding application centred on:

- a) The launch of two new curbside recycling programs affecting seven of the eight municipalities located in the County.
- b) The associated promotion and educational materials required to properly communicate the new and old program requirements of the three curbside collection systems running within the County.
- c) The necessary monitoring and measuring activities that will take place to evaluate the success of the new program changes.

The following sections outline the various steps taken to achieve and track program success.

#### 3.1 Promotion and Education Plan

One of the outcomes from the Waste Management Strategy's engagement process undertaken in 2014 identified that greater efforts were required on behalf of the County to notify residents of waste management program requirements and changes. The County embraced this comment and identified the need to increase curbside education and awareness as one of eighteen service improvement options required to streamline and enhance waste management services within the County. Additionally, during the analysis of curbside collection and recycling processing RFP submissions, the County identified a need to substantially increase promotion and education around the blue box collection and recycling processing programs in order to achieve a successful transition the new program.

In collaboration with the County's Strategic Communication and Engagement Department, public education began with Council approval of the new waste management service level on February 11, 2015. As part of this funding proposal the County committed to implementing a targeted communication campaign, beginning in the summer of 2015 which would last for the first twelve months of the new program. The communication campaign consisted of the following phases:

- **Phase 1: Awareness building and launch of Wasteline tools.** This phase would focus on getting people to sign up for Wasteline automatic reminders to help prevent missed collection and support a smoother transition to the new program.
- **Phase 2: Priming for pending change** through repetition and reinforcement. Specific details about changes to recycling, such as new materials accepted, would be the focus in this phase.
- **Phase 3: Launch.** This phase would let people know that the new program was now in place, and prepared people for possible delays as collectors carries out new routes and schedules.
- **Phase 4: Post Launch.** This phase would focus on updating residents on the new program's success, opportunities for improvement (i.e.: how to reduce residual waste, what can go in the blue box and the results of curbside and audits at the material recovery facility).

Appendix A contains a detailed Communication Critical Path outlining all of the action items to be undertaken for Phases 1 through 4.

### 3.2 Monitoring and Measurement Plan

A robust monitoring and measurement plan was developed to help guide the County in developing targeted educational campaign for the new curbside blue box program as well as assess the effectiveness of the new program. Data collected during the implementation and post launch phase of the new program was used to develop targeted promotional material with the intent to increase program participation, increase the County's blue box capture rate, and decrease the County's residual waste rate.

The monitoring and measurement activities occurred in four phases:

- **Phase 1: Evaluation of Previous Blue Box Curbside Collection Program and Recycling Processing Services.** This phase would evaluate historical curbside and recycling processing tonnage data under the previous curbside collection program as well as past curbside participation and garbage and recycling audits and customer service data. This information would also serve as the County's basis line data for garbage, blue box, and residual waste tonnage data, along with residential curbside participation rate.
- **Phase 2: Evaluation of Pre-New Blue Box Curbside Collection Program Promotion and Education Initiatives.** This phase would focus on evaluating the promotion and education activities undertaken between February 2015 and September 2015 which were designed to roll out the new curbside collection program changes. This phase would evaluate the effectiveness of the County's public engagement process which was designed make it easier for residents to access program information, educate residents on proper blue box set out requirements and provide customer service staff with resources and tools to resolve customer service questions quickly and accurately.
- **Phase 3: Evaluation of Post Launch of New Blue Box Curbside Collection Program.** This phase would evaluate curbside garbage and recycling collection data and recycling processing data, as well as waste and recycling audit data between September 2015 and August 2016 to see what impact the new curbside collection program had on the County's diversion, participation, and blue box residual waste rates.
- **Phase 4: Financial Analysis of the New Blue Box Curbside Collection Program.** This phase would evaluate the entire new program changes along with associated promotion and educational activities undertaken to determine overall program savings and assess the return on investment.

Appendix B contains a detailed Monitoring and Measurement Critical Path outlining all of the action items to be undertaken for Phases 1 through 4.

### 3.3 Contractor Compliance Plan

Curbside enforcement by the County's curbside collection contractor was critical to achieving program success. Between collection crew complacency and staff turnover, failure by the collection crew to enforce the County's program guidelines could have a negative impact on blue box capture rates and residual waste rates.

The contractor compliance activities to be undertaken during the project were:

- **Phase 1: Contract Enforcement Activities.** This phase would focus on ensuring that the County and the Contractor follow the terms and conditions identified in the County's curbside collection contract for program enforcement by the collection crew.
- **Phase 2: Creation of Contractor Enforcement Tools.** This phase would focus on developing the necessary tools and resources to ensure that the collection crew has the necessary resources to make informed program decisions. These tools and resources would serve to ensure a standardized level of service among the collection crew, regardless of staff turnover.
- **Phase 3: Evaluation of Contractor Enforcement Activities.** This phase would focus on the monitoring collection activities at the curb to ensure program guidelines are being enforced.

Appendix C contains a detailed Contractor Compliance Critical Path outlining all of the action items to be undertaken for Phases 1 through 3.

### ***3.4 Monitoring and Measurement Methodology***

#### **3.4.1 Audit Results for Curbside Waste, Recycling, Residual Waste and Participation Rates**

- Audit results from 2010-2011 waste, recycling and participation rate studies.
- Participation audits from September 2015 and June 2016.
- Waste and recycling audits performed in May 2016.
- Residual waste audit data performed in December 2015 and May 2016.

#### **3.4.2 Customer Service Data**

- Customer service reporting data bases would be used to quantify the amount of issues handled and the effectiveness of customer service staff to resolve issues under the previous and new curbside collection program.

#### **3.4.3 Tonnage Data**

- Evaluation of tonnage data under the previous and new curbside collection data, looking for trends and indicators demonstrating program success and/or failures.

#### **3.4.4 Public Engagement Activities**

- Assess the impact that the pre-new program implementation process had on program roll out.
- Evaluation will be based on both quantitative and qualitative data ranging from curbside and participation audit results, to use of tools and resources made available through Wasteline, to frequency and type of customer service issues raised.

#### 3.4.5 Financial Analysis

- In addition to the annual program savings realized through the new curbside collection and processing contracts the County will attempt to evaluate if any additional program savings were realized as a result of the various tools and resources implemented for the new program and what if any impact they had on material tonnages.

### ***3.5 Monitoring Challenges, Limitations and Solutions***

Difficulty in the monitoring and measurement phase of the project occurred in two areas. First, staff originally assigned to monitor the project by performing curbside collection audits and contractor performance audit had to be reassigned to other areas within the Waste Management division because of staff shortages. As a result, monitoring timelines had to be adjusted and the monitoring frequency reduced. Second, historical baseline data was up to five years old with audit methodology not well documented. This made replicating the same audit conditions during this project difficult and at times hard to make exact comparisons when analyzing data.



## 4 Project Results and Analysis

### 4.1 Project Results

#### 4.1.1 Audit Results

##### Curbside Waste and Recycling Set Out Rates

Curbside waste and recycling audits and participation rate audits were conducted by County staff in 2010, 2011, 2015 and 2016. Data obtained from audits conducted prior to 2015 was used as baseline data for this report. In 2015 and 2016 County staff followed the recommended audit protocols made available through CIF for conducting curbside waste audits in small communities. In all of the audits a sample size of 100 homes was taken and evaluated over four consecutive weeks.

The 2016 curbside audits were more comprehensive than previous audits, looking at the number of garbage bags, the number of recycle bins, the acceptable number of bag tags, acceptable recycle materials, and acceptable set-out requirements for each of the 100 homes evaluated. As well, the audit team returned to the study areas after the collection contractor had performed collection to identify if any set-outs had remained uncollected and whether the contractor was justified in their actions.

Table 5 below summarizes the waste and recycling set out rates during 2010 (old collection system) and 2016 (new collection system). The audit results identified that there was almost no change in the amount of garbage bags placed at the curb on a weekly basis between 2010 and 2016. However, it is assumed that amount of garbage contained within the weekly garbage bag was less in 2016 than in 2010 as the County saw an overall annual curbside tonnage decrease of 200 tonnes with a housing increase of 7% over this six year period.

The recycling data, when considered over a two week period for both 2010 and 2016 showed an increase in blue box materials by half a bin. This capture rate may be more than half a bin due to the fact that in 2010 the primary blue box container used by residents as the 16 gallon blue box. Whereas in 2016 residents widely used a combination of the 16 and 22 gallon bins for blue box collection.

**Table 5: Waste and Recycling Set-Out Rates, 2010 and 2016**

Audit Year	Average # of Garbage Bags/Bins per Cycle	Average # of Blue Boxes per Cycle
2010	.7 bags/containers weekly	2.3 blue boxes/bi-weekly
2016	.6 bags/containers/weekly	1.4 blue boxes/weekly

##### Curbside Waste and Recycling Participation Rates

Participation rate studies were conducted in 2010, 2015 and 2016. The results of these studies can be found in Table 6 below. Baseline data was taken from 2010 under the old program of weekly garbage and bi-weekly two stream recycling collection. The participation rate was reasonably high with 70% and 79% participation rate for garbage and recycling. This participation rate made sense at the time given that the price of the bag tag was \$1.25 per tag, making it affordable to set garbage out frequently and recycling collection was on two week cycle meaning that missed collection resulted in stockpiling four weeks of blue box materials.

Two months into the new program the County observed a decrease in participation rates of 50% for garbage and 63% for recycling. Again these results were not surprising to the County as by this time bag tag pricing had increased to \$2 per tag making it less economical to place partial bags of garbage at the

curb for collection. As well recycling collection participation rates at this time appeared to still reflect the bi-weekly collection cycle.

By 2016, almost a year into the new program, participation rates were 43% for garbage and 70% for recycling. The County assumes that the lower garbage set out rate is indicative of a costly user pay system, an increase collection frequency for recycling collection, and an expanded recyclable material list.

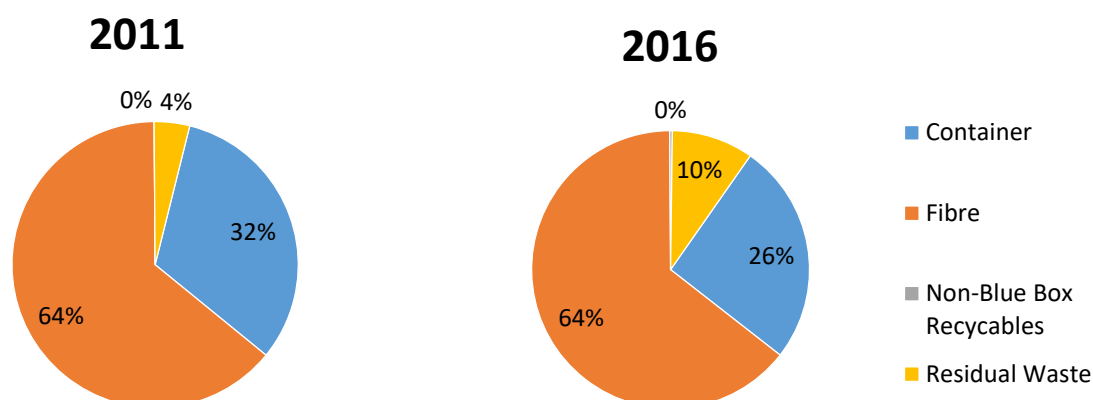
**Table 6: Participation Rates, 2010, 2015, and 2016**

Audit Year	% of households with garbage set-out	% of households with recycling set-out
Summer 2010 – weekly garbage, bi-weekly recycling	70%	79%
Fall 2015 – weekly garbage and recycling	50%	63%
Spring 2016 – weekly garbage and recycling	43%	70%

#### Recycling Composition Results

Figure 2 below shows the recycling composition results from 2011 and 2016. Overall, the County anticipated an increase in the amount of residual waste found in the recycling stream under the new program given the move from a two stream to a single stream recycling system.

**Figure 2: Blue Box Composition Audits, 2011 and 2016**



In 2011 the County audited blue boxes, separating material between fibres, containers, and residual waste. While the County's processor consistently reported a 5% residual waste rate, the 2011 audit identified a 4% residual waste rate as shown in Figure 2 above. The County assumed that the 1% variance was attributed to auditing anomalies.

In 2016 the County audited a recycling collection vehicle containing 3.4 metric tonnes (MT) of recycling material. Two eight yard samples, representing approximately 18% of the load were audited. The audit findings showed a variance between containers and residual waste between the two audit years. Additional variances were observed between the County's processor reported residual waste rate of 6% to the County audit rate of 10%. The difference between these two residual waste rates may be attributed to the experience level and industry knowledge level of the County's auditor as to what were acceptable items and the County's processor being able to recycle items in excess of the standard blue box material list.

### Recycling Residual Waste Composition Audits, 2015 and 2016

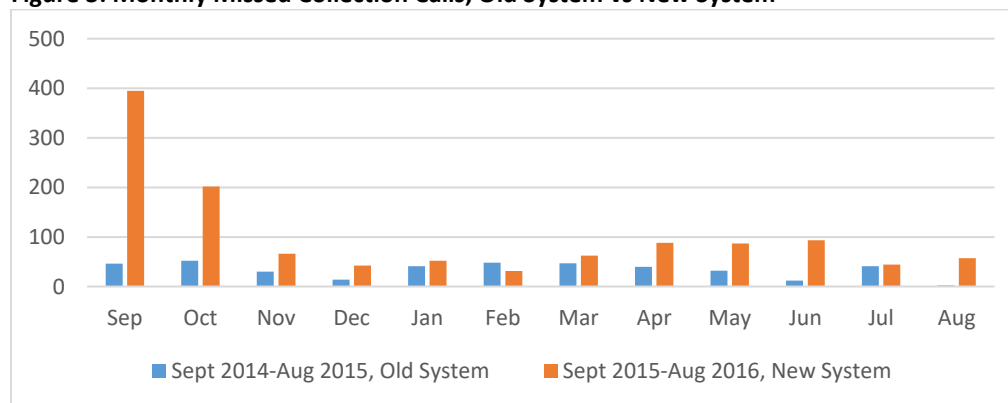
An additional residual audit was conducted in December 2015 and May 2016. As the County's contractor was reporting a low residual waste rate for a single stream system of 6% the County elected to verify this data. During a processing facility audit in 2015, whereby several sample loads were extracted from incoming County collection vehicles, a volume audit placed the residual waste rate at 4.29%. During the May 2016 audit the residual waste rate was reported as 9.5%. The main difference between these two audits was that dirty recycling was separated from residual in 2015. There were other anomalies between these two audits making it difficult to compare the data. Such anomalies included a volume based audit to a weight based audit; different auditors and the skill set and knowledge of the auditors. Since the County was unable to obtain a good set of comparable data to verify the new program's residual waste rate, the County will defer to the processor's 6% residual waste rate for the single stream program.

#### 4.1.2 Customer Service Data

Due to a significant change in the program, for seven of the eight municipalities in the County of Oxford, it was a necessity to properly inform the public of their collection changes. When analyzing customer service calls over the first three months for the six municipalities that the County's contractor collects, it was determined that 95 households (0.4% of households) identified that they were unaware of the program changes. In the Township of South-West Oxford, it was determined that 58 households (1.9% of households) were unaware of the of the program changes. This data indicates that the Promotion and Education Plan (Appendix A) developed for the program launch was highly effective during the transition.

The number of customer service calls tracked for the year prior to and the year after the implementation of the new program is represented in Figure 3. The data reported under the old system represents the number of missed collection calls received by the County's Waste Management Department; calls logged by the area municipal customer service departments were not tracked during this time period. The data reported under the new system represents the number of missed collection calls received by County and seven area municipalities. April to June 2016 data includes missed collection data for the County's large article collection program in addition to the garbage and recycling program. Upon examination of the data it is assumed that the number of missed collection calls had decreased since the implementation of the new program.

**Figure 3: Monthly Missed Collection Calls, Old System vs New System**



Since November 2015, the number of customer service calls for missed collections and misconducts has decreased significantly. The monthly average from November 2014 to April 2015 was found to be 37 missed collection calls and 7 performance issue calls. With the new program starting September 2015, the

monthly average of missed collections calls from November 2015 to April 2016 dropped by 49% to 18 and the number of performance issue calls dropped by 67% to 2 as seen in Table 7.

**Table 7: Missed Collection and Performance Issue Customer Service Calls, 2014-2016**

Averaged Months	Missed Collection Calls Average	Difference	Performance Issue Calls Average	Difference
Nov 2014 – Apr 2015	36.7		7.2	
Nov 2015 – Apr 2016	18.7	-18 (49%)	2.3	-4.8 (67%)

#### 4.1.3 Tonnage Data

The new curbside collection program for seven of the eight municipalities located in the County began on September 14, 2015. Because the new program started part way through 2015 the County compared 2016 new program data to the 2014 baseline data for the three curbside collection programs, thus comparing two 12 month periods, operating under no program change.

Table 8 illustrates that upon implementation of the new collection program within seven of the eight municipalities, the County observed an overall garbage tonnage decrease of 278 tonnes and an increase in the amount of collected blue box materials of 631 tonnes (12% increase). The results contained within Table 8 did not come as a surprise to the County as it was anticipated that garbage tonnage would decrease and recycling tonnage would increase with an increase frequency in recycling collection and an expanded blue box material list.

During this same period the City of Woodstock's program, which has remained unchanged, saw a decreasing in blue box tonnage by 269 tonnes and a decrease in garbage tonnage of 71 tonnes. Collectively between the three recycling programs the County saw a 5% increase in its blue box capture rate.

**Table 8: Comparison Between 2014 & 2016 Curbside Garbage and Recycling Collection**

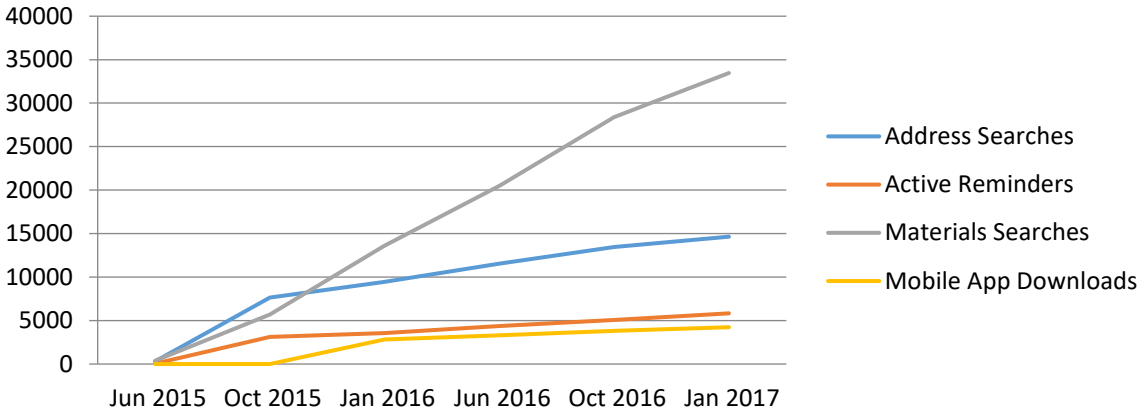
Comparison 2014 vs 2016 Curbside Garbage and Recycling Collection				
Area	Recycling		Garbage	
	Tonnage Change +/- 2014 vs 2016	% Change +/- 2014 vs 2016	Tonnage Change +/- 2014 vs 2016	% Change +/- 2014 vs 2016
County Serviced - Program Change	540	12%	-209	-3%
SWOX Serviced - Program Change	91	21%	-69	-11%
Woodstock Serviced - No Program Change	-269	-9%	-71	-1%

#### 4.1.4 Public Engagement Activities

Appendix A provides a comprehensive list of all promotion and educational activities undertaken to aid in a successful program switch over. Audit and tonnage data, in addition to the volume and nature of customer service calls all provide an indication of the success of the promotion and educational efforts. Additionally, through the launch of the County's new website, Wasteline.ca and its mobile app, Wasteline, the County was able to track how many residents downloaded the mobile app onto their smartphone, requested curbside collection reminders and performed address searches looking for waste information specific to their location within the County and utilized the Waste Sorting Game.

Figure 4 illustrates the effectiveness of the Collection Calendar Widget. This widget allows residents to identify their curbside collection schedule and where and how to dispose/recycle material specific to their property address.

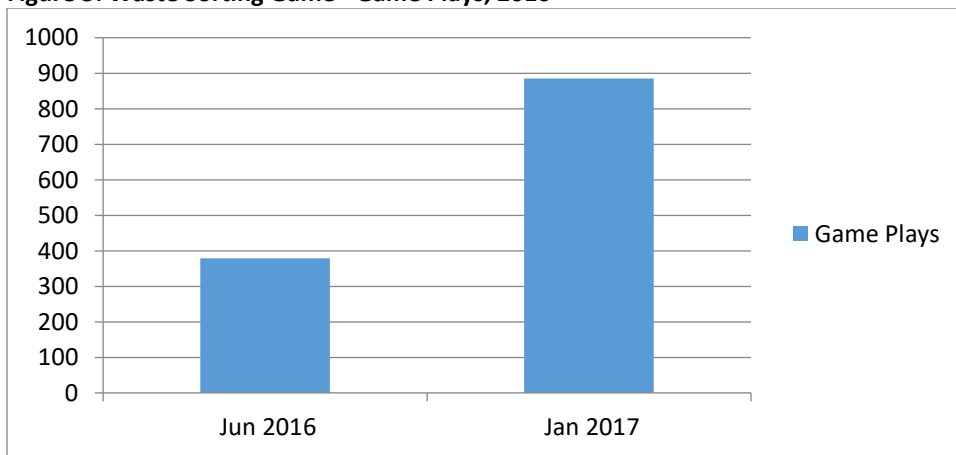
**Figure 4: Collection Calendar Widget, 2015-2017**



This widget can be access through the County's Wasteline.ca site or through a downloadable mobile app. Since the launch of this widget, 14,600 addresses have been searched, 5830 active reminders have been set up, 33,400 materials searched, and 4,200 mobile app downloads have been done by County residents.

In January 2016 the County launched its Waste Sorting Game which received 885 game plays during the first twelve months (see Figure 5). During this period the average cost to play the game was \$3.39/play. Implementation of the waste sorting game came four months after the start date of the new program and did not receive the same level of promotion as the mobile app, the waste goes where and when's my collection tools. It is assumed that had the Waste Sorting Game been launch at the same time as all of the other new program tools, the number of game plays would have been greater.

**Figure 5: Waste Sorting Game - Game Plays, 2016**



Tracking website hits, use of the calendar and waste sorting tools, along with active collection reminders, provides firm quantitative data that the County promotion and educational efforts have been effective.

#### 4.1.5 Financial Analysis

The County anticipated that the new program changes would result in an overall program savings. When comparing the County's 2014 and 2016 Waste Management budget, a program savings of 15% was seen for curbside garbage and recycling collection and recycling processing collectively. Although unquantifiable, it is assumed that additional savings were realized with the implementation of the new collection programs, due to the reduction on customer service calls, less staff time required to investigate collection issues, and less staff time was required to manage the curbside contracts.

## 4.2 Analysis of Results

The County was very pleased with the roll out of the new program. Program changes included:

- Changes to collection frequency, collection day, collection times, and how the material would be collected;
- Expanded acceptable recyclable material list;
- A new curbside collection provider; and,
- New tools and resources to provide residents with quick access to program information.

Additionally all new promotion and educational material was needed to reflect the new program and substantial public engagement was performed to spread the word to residents living across the County.

Emails received from residents indicating their pleasure with the new program, Wastline.ca, and with the new curbside collection contractor confirmed that the County had made the right decision to change the curbside collection program. Tonnage data, customer services calls and resident's use of the online and mobile app resources cemented our new program change as well as the overall program success.

When considering the triple bottom line (social, economic, and the environment), the County deemed the new collection program a success. Socially, residents were happy with the increase frequency of recycling collection along with the expanded material list. Economically, the new program reduced the County's Waste Management collection and recycling processing budget by 15%. Environmentally, the County saw a greenhouse gas savings of due to the fact that the roads were being travelled less by the collection vehicles.

Operational improvements were also realized through the new program as routing efficiencies were undertaken to allow the collection vehicles to complete their routes within the allotted time frame. During the first two weeks of the new program, collections were delayed a maximum of two hours as the drivers learn the routes, but collections were never, not completed on their scheduled day. The amount of missed collections from the old to new program reduced as wells. The County believes this is a direct result of better routing, driver meetings held by the County to review the new program and discuss collection challenges, and the effectiveness of the promotion and education plan (Appendix A).

## 4.3 Lessons Learned

Ideally, the best case scenario would have been to align all three curbside collection programs operating within the County. Through this project we were only able to align the blue box acceptable material list; doing this alone reduced resident confusion on what they could put in their blue box as advertising for

the program now reflected consistent messaging. With that said, further operational efficiencies, financial efficiencies, and a possible increase in the blue box capture rate could have been realized if one curbside program had been implemented County wide.

None the less, transitioning to the new program went very well. To aid in a seamless program transition, representatives from the County's Web, GIS, Communication, Customer Service, and Waste Management teams came together to work on the successful launch of the new program. The transition team enabled the County to ensure that key implementation initiatives were not over looked. An examination of the program launch revealed that the only change the transition team would have made was simply to start working on the program implantation sooner, thus relieving tight time constraints towards the implementation date.

## 5 Project Budget

The total cost of this promotion and education project was \$109,294. At 41,500 households, the cost per household to deliver this project was \$2.38, achieving an increase in blue box material capture rate of 12%.

The project budget for this initiative can be broken down into three components as presented in Table 9. Component One represents the initiatives undertaken for the seven municipalities switched over to the new curbside collection program consisting of weekly co-collection garbage and single stream recycling. Component Two represents the initiatives undertaken by the City of Woodstock which maintained the existing curbside program consisting of weekly garbage and bi-weekly two stream recycling collection. Component Three represents the initiatives undertaken for all eight municipalities to align service delivery and monitor program results throughout the duration of this project.

Component One and Three saw a reduced project budget by of 33% and 39% respectfully. Key members of the transition team, possessing expertise in their given areas, were able to reduce project costs through bulk sourcing of work and absorbing some project costs within pre-existing operational budgets within other areas of the organization. Print and advertising for the project did exceed project costs by \$5,000. The County believes that this additional expenditure was well spent given the successful project launch. Component Two saw a reduced project budget by 70% which was due to completing two of the six project initiatives.

**Table 9: Project Budget - Approved and Actual**

Component One: Activities for County and Township of South-West Oxford Collection Systems - 28,500 Households					
Category	Description	Total Cost Budgeted	Total Actual Costs	BB Share	% Change
Program Education	Customer Service Tool Kit	\$500	\$0	\$0	-100%
Program Education	Collection Changes Notices	\$3,000	\$1,788.00	\$894.00	-40%
Program Education	Collection Calendar	\$24,000	\$16,763.87	\$5,587.40	-30%
Program Education	Collection Stickers	\$5,000	\$2,835.60	\$2,552.10	-43%
Communications	Advertising - Print and Social Media	\$15,000	\$20,283.40	\$10,448.99	26%
Communications	Vehicle Signage	\$20,000	\$5,357.64	\$2,678.82	-73%
Software and Equipment	Customer service software and mobile devices	\$7,000	\$4,836.52	\$2,418.26	-31%
Staffing	Customer Service Co-op Student	\$13,600	\$11,593.70	\$11,593.70	-15%
Equipment	Vehicle Rental	\$7,000	\$0	\$0	-100%
<b>Subtotal</b>		<b>\$95,100</b>	<b>\$63,458.73</b>	<b>\$36,173.27</b>	<b>-33%</b>



Component Two: Activities for City of Woodstock Collection System - 17,343 Households					
Category	Description	Total Cost Budgeted	Total Actual Costs	BB Share	% Change
Communications	Radio Advertising Campaign	\$9,800	\$0	\$0	-100%
Communications	Newspaper Advertising Campaign	\$3,500	\$1,876.20	\$1,876.20	-46%
Communications	Social Media	\$0	\$0	\$0	0%
Program Education	Community Outreach at Market	\$500	\$0	\$0	-100%
Communications	Magazine Advertising	\$1,000	\$0	\$0	-100%
Program Education	City Services Calendar	\$8,600	\$5,153.40	\$1,288.35	-40%
<b>Subtotal</b>		<b>\$23,400</b>	<b>\$7,029.60</b>	<b>\$3,164.55</b>	<b>-70%</b>

Component Three: Activities for All Three Collection Systems - 45,843 Households					
Category	Description	Total Cost Budgeted	Total Actual Costs	BB Share	% Change
Software	ReCollect Communication System	\$10,000	\$12,999.00	\$4,332.57	23%
Staffing	Auditing	\$40,800	\$20,137.90	\$20,137.90	-51%
Supplies	Audit supplies	\$2,000	\$0	\$0	-100%
Equipment	Vehicle Rental	\$7,000	\$2,090.26	\$2,090.26	-70%
Staffing	Monitor and Final Report	\$0	\$3,578.49	\$3,578.49	100%
<b>Subtotal</b>		<b>\$59,800</b>	<b>\$38,805.65</b>	<b>\$30,139.21</b>	<b>-35%</b>

**Total Costs      \$78,300.00      \$109,293.98      \$69,477.03      -39%**

**CIF Blue Box Funding at 30% with HST      \$21,179.81**

## 6 Conclusions

The success of any project, whether large or small rests with having the right people on the implementation team to assist with development, implementation, and monitoring and measurement. This project is the first time the County brought together a multi-departmental team and will serve as an example within the Corporation of the need for departments to work with each other more to achieve success and budget efficiencies.

The second take away is to do the necessary public engagement ahead of time to determine residents' opinions and desires for service delivery. Demonstrating that you have listened to the residents' will go a long way in obtaining buy-in and support when making program changes.

Third, don't be afraid to push the envelope and implement multiple changes. With proper planning and education, program success can be achieved.

Fourth, do not underestimate the need for a well-designed promotion and education plan. Waste management personnel are experts in waste management not communications. Having access to a professional and/or quality communication team, which understands the need for simplistic messaging and how to engage the public is critical in a successful project implementation.

## Appendix A – Promotion and Education Plan: Communication Critical Path

## COMMUNICATION CRITICAL PATH

TIMING	ACTIVITY	DESCRIPTION
<b>PHASE 1: AWARENESS BUILDING, BUILDING AUDIENCE FOR APP &amp; ONLINE TOOLS</b>		
<b>JAN-APR</b>	<b>VARIOUS</b>	<ul style="list-style-type: none"> <li>Support for ads, handouts, calendar review, app design, etc.</li> </ul>
<b>MAY/JUNE</b>	<b>WEB UPDATES</b>	<ul style="list-style-type: none"> <li>Temporary web copy on County website</li> <li>Widgets added to County site</li> <li>Outreach to municipalities re: widgets</li> </ul>
<b>JULY 2 - 31</b>	<b>WEB WRITING</b>	<ul style="list-style-type: none"> <li>Writing web copy for wireframes</li> </ul>
<b>STARTING JULY 6</b> (Booked in June)	<b>ADVERTISING LOCAL PUBS</b>	Village Voice <ul style="list-style-type: none"> <li>Thamesford</li> <li>Embro</li> <li>Ingersoll</li> <li>SWOX</li> </ul>
<b>AFTER JULY 15</b>	<b>SOCIAL MEDIA ORIENTATION</b>	<ul style="list-style-type: none"> <li>Orientation to County social media management and policy</li> </ul>
<b>JULY 21</b>	<b>MEDIA</b>	<ul style="list-style-type: none"> <li>News release re web app and widgets, upcoming changes</li> <li></li> </ul>
<b>JULY 21</b>	<b>AREA MUNICIPAL</b>	<ul style="list-style-type: none"> <li>CAO update re news release and ad campaign, upcoming training sessions</li> </ul>
<b>JULY 21</b>	<b>INTERNAL</b>	<ul style="list-style-type: none"> <li>Update re roll-out of new waste management program and Wasteline tools</li> </ul>
<b>JULY 21</b>	<b>SOCIAL MEDIA ADS &amp; POSTS</b>	<ul style="list-style-type: none"> <li>County social media sites + promoted posts on Facebook</li> </ul>
<b>JULY 21-25</b>	<b>ADVERTISING NEWSPAPER</b>	¼ page ads in newspapers (approx. 4"X6") <ol style="list-style-type: none"> <li>Oxford Review</li> <li>Tillsonburg Independent</li> <li>Tillsonburg News</li> <li>Ingersoll Times</li> <li>Norwich Gazette - Post Media</li> <li>Tavistock Gazette</li> <li>St. Mary's Journal-Argus</li> <li>Ayr News (Aug 5)</li> </ol>

<b>AUG 27-SEPT 2</b>	<b>PW SENIOR WEB APPROVE</b>	<ul style="list-style-type: none"> <li>• Approval by director and manager of Public Works; review by CAO</li> </ul>
<b>WEEK OF AUG 4-7</b>	<b>MATTE STORY/ NEWSLETTER COPY</b>	<ul style="list-style-type: none"> <li>• Matte article that can be used for municipal newsletters</li> </ul>
<b>WEEK OF AUG 4-7</b>	<b>POSTERS</b>	<ul style="list-style-type: none"> <li>• Posters for locations that sell bag tags, municipal offices, etc.</li> </ul>
<b>WEEK OF AUG 4</b>	<b>SOCIAL MEDIA ADS &amp; POSTS</b>	<ul style="list-style-type: none"> <li>• Refresh: County social media sites + promoted posts on Facebook</li> </ul>
<b>PHASE 2: COUNTDOWN TO LAUNCH OF NEW SERVICE</b>		
<b>AUG</b>	<b>WEBSITE</b>	<ul style="list-style-type: none"> <li>• New web copy added to website structure</li> </ul>
<b>AUG 4</b>	<b>AREA MUNICIPAL STAFF</b>	<ul style="list-style-type: none"> <li>• Email invitation to training sessions</li> </ul>
<b>AUG 6</b>	<b>RECOLLECT CAMPAIGNS</b>	<ul style="list-style-type: none"> <li>• Demo of campaigns and service alerts</li> <li>• Protocol for use</li> </ul>
<b>AUG 7</b>	<b>WEB PHOTOGRAPHY</b>	<ul style="list-style-type: none"> <li>• Source photos for web pages</li> </ul>
<b>AUG 9/10</b>	<b>MUNICIPAL TOOLKIT</b>	<ul style="list-style-type: none"> <li>• Finished toolkit available for distribution to municipalities to support training</li> <li>• Training begins Aug 15</li> </ul>
<b>STARTING AUG 4</b>	<b>ADVERTISING COMMUNITY PUBS</b>	<ol style="list-style-type: none"> <li>1. Village Voice <ul style="list-style-type: none"> <li>– Thamesford</li> <li>– Embro</li> <li>– Ingersoll</li> </ul> </li> <li>2. SWOX</li> <li>3. Zorra Now – Deadline Aug. 13 (fall edition)</li> <li>4. EaZy Talk – Mid-Aug deadline</li> </ol>
<b>AUG 21</b>	<b>COUNCIL UPDATE INFO</b>	<ul style="list-style-type: none"> <li>• Summary of communication activity for presentation to Council</li> </ul>
<b>WEEK OF AUG 24</b>	<b>MEDIA</b>	<ul style="list-style-type: none"> <li>• News release re upcoming turnover of new waste management service</li> </ul>
<b>WEEK OF AUG 24</b>	<b>BIA COMMUNITY</b>	<ul style="list-style-type: none"> <li>• pick-up times for downtown core</li> </ul>

<b>WEEKS OF AUG 24</b>	<b>SOCIAL MEDIA ADS &amp; POSTS</b>	<ul style="list-style-type: none"> <li>County social media sites + promoted posts on Facebook</li> </ul>
<b>WEEK OF AUG 24</b>	<b>PRINT NEWSPAPER</b> 8.13" wide x 7" deep	Larger ads in newspapers (8"x7") <ol style="list-style-type: none"> <li>Oxford Review</li> <li>Tillsonburg Independent</li> <li>Tillsonburg News</li> <li>Ingersoll Times</li> <li>Norwich Gazette</li> <li>New Hamburg Ind.</li> <li>Tavistock Gazette</li> <li>Ayr News</li> <li>St. Mary's Journal-Argus</li> <li>Stratford Gazette</li> </ol>
<b>WEEKS OF AUG 24</b>	<b>ADVERTISING RADIO</b>	<ol style="list-style-type: none"> <li>Heart FM</li> <li>Easy 101/Country 107.3</li> </ol>
<b>PHASE 3: LAUNCH OF NEW SERVICE</b>		
<b>STARTING SEPT 1</b>	<b>ADVERTISING COMMUNITY PUBS</b>  Full page ad except ½ page in Ingersoll	<ol style="list-style-type: none"> <li>Village Voice               <ul style="list-style-type: none"> <li>Thamesford</li> <li>Embro</li> <li>Ingersoll</li> <li>SWOX</li> </ul> </li> </ol>
<b>STARTING SEPT 1</b>	<b>SOCIAL MEDIA ADS &amp; POSTS</b>	<ul style="list-style-type: none"> <li>Refresh: County social media sites + promoted posts on Facebook</li> </ul>
<b>SEPT 1</b>	<b>INTERNAL</b>	<ul style="list-style-type: none"> <li>Reminder re launch of new waste management program</li> </ul>
<b>SEPT 7</b>	<b>WEB MUNICIPAL</b>	<ul style="list-style-type: none"> <li>Check with municipalities re web content</li> </ul>
<b>SEPT 9</b>	<b>COUNTY COUNCIL UPDATE</b>	<ul style="list-style-type: none"> <li>Briefing on final implementation steps + overview of what's taken place over past 60 days to prepare</li> </ul>
<b>SEPT 10</b>	<b>MEDIA</b>	<ul style="list-style-type: none"> <li>Photo opp / advisory as reminder</li> </ul>
<b>SEPT 10</b>	<b>WEBSITE</b>	<ul style="list-style-type: none"> <li>New web section goes live</li> </ul>
<b>SEPT 14</b>	<b>MEDIA</b>	<ul style="list-style-type: none"> <li>News release re launch of new waste management service</li> </ul>
<b>WEEK OF SEPT 14</b>	<b>ADVERTISING PRINT</b>	¼ page ads in newspapers

		<ol style="list-style-type: none"> <li>1. Oxford Review</li> <li>2. Tillsonburg Independent</li> <li>3. Tillsonburg News</li> <li>4. Ingersoll Times</li> <li>5. Norwich Gazette</li> <li>6. Tavistock Gazette</li> <li>7. Ayr News</li> <li>8. St. Mary's Journal-Argus</li> </ol>
<b>STARTING SEPT 14</b>	<b>SOCIAL MEDIA ADS &amp; POSTS</b>	<ul style="list-style-type: none"> <li>• Refresh: County social media sites + promoted posts on Facebook</li> </ul>
<b>WEEK OF SEPT 1</b>	<b>VEHICLE SIGNAGE</b>	<ul style="list-style-type: none"> <li>• Install signage on all collection vehicles</li> </ul>
<b>WEEK OF SEPT 7</b>	<b>ADVERTISING RADIO</b>	<ol style="list-style-type: none"> <li>1. Heart FM</li> <li>2. Easy 101/Country 107.3</li> </ol>
<b>PHASE 4: Post Launch – Education phase</b>		
<b>OCT 14-15</b>	<b>PRINT ADS - “Thank You” ad – 30 days after launch</b>	<p>Oxford Review Tillsonburg Independent</p>
<b>OCT/NOV</b>	<b>SOCIAL MEDIA</b>	<ul style="list-style-type: none"> <li>• “Thank you” for program launch success</li> <li>• Education campaign on proper set outs</li> <li>• Continue push for app downloads, follow @Wasteline</li> </ul>
<b>OCT 14</b>	<b>MEDIA</b>	<ul style="list-style-type: none"> <li>• News release 30 days after launch discussing program success.</li> </ul>
<b>OCT 14</b>	<b>CAO UPDATE</b>	<ul style="list-style-type: none"> <li>• CAO update to County Council and CAO's re program status 30 days after launch</li> </ul>
<b>MID – LATE NOV</b>	<b>PRINT ADS – Proper set outs/winter is coming</b>	<p>¼ page ads in newspapers (approx. 4”X6”)</p> <ol style="list-style-type: none"> <li>9. Oxford Review</li> <li>10. Tillsonburg Independent</li> <li>11. Ingersoll Times</li> <li>12. Norwich Gazette</li> <li>13. Tavistock Gazette</li> <li>14. St. Mary's Journal-Argus</li> <li>15. Ayr News</li> </ol>
<b>OCT/NOV</b>	<b>VIDEO – PROPER SET OUTS</b>	<p>Video displaying proper curbside set outs to be uploaded online, shared on social media.</p>

DEC 16-17	PRINT ADS – Special holiday collection schedule	<ol style="list-style-type: none"> <li>1. Oxford Review</li> <li>2. Tillsonburg Independent</li> <li>3. Ingersoll Times</li> <li>4. Norwich Gazette</li> <li>5. Tavistock Gazette</li> <li>6. St. Mary's Journal-Argus</li> <li>7. Ayr News</li> <li>8. Village Voice <ul style="list-style-type: none"> <li>• Thamesford</li> <li>• Embro</li> <li>• Ingersoll</li> <li>• SWOX</li> </ul> </li> </ol>
DEC 14 - 22	ADVERTISING RADIO – Holiday collection info	<ol style="list-style-type: none"> <li>1. Heart FM</li> <li>2. Easy 101/Country 107.3</li> </ol>
JAN 29 2016	FUTURE OXFORD EXPO	<ul style="list-style-type: none"> <li>• Participate in Future Oxford Expo</li> </ul>
JAN 2016	VIDEO – WINTER COLLECTION TIPS	<ul style="list-style-type: none"> <li>• Video displaying proper curbside set outs to be uploaded online, shared on social media.</li> </ul>
JAN 2016	ADVERTISING COMMUNITY PUBS – winter set out tips, and post MRF audit communication	<ol style="list-style-type: none"> <li>1. Village Voice <ul style="list-style-type: none"> <li>– Thamesford</li> <li>– Embro</li> <li>– Ingersoll</li> <li>– SWOX - \$100</li> </ul> </li> <li>2. Zorra Now</li> <li>3. EaZy Talk</li> </ol>
JAN 2016	ADVERTISING RADIO - winter set out tips, and post MRF audit communication	<ol style="list-style-type: none"> <li>3. Heart FM</li> <li>4. Easy 101/Country 107.3</li> </ol>
JAN 2016	SOCIAL MEDIA ADS & POSTS - winter set out tips, and post MRF audit communication	<ul style="list-style-type: none"> <li>• Refresh: County social media sites + promoted posts on Facebook</li> </ul>
MAR 23	CAO UPDATE	<ul style="list-style-type: none"> <li>• CAO update to County Council and CAO's re program status 6 months after launch</li> </ul>
WEEK OF MAR 28	MEDIA	<ul style="list-style-type: none"> <li>• News release 6 months after launch discussing program success.</li> </ul>
JUNE 2016	ADVERTISING COMMUNITY PUBS – post curbside and MRF audit communication	<ol style="list-style-type: none"> <li>1. Village Voice <ul style="list-style-type: none"> <li>– Thamesford</li> <li>– Embro</li> </ul> </li> </ol>



		<ul style="list-style-type: none"> <li>– Ingersoll</li> <li>– SWOX</li> </ul> <ol style="list-style-type: none"> <li>2. Zorra Now</li> <li>3. EaZy Talk</li> </ol>
<b>JUNE 2016</b>	<b>ADVERTISING RADIO – post curbside and MRF audit communication</b>	<ol style="list-style-type: none"> <li>5. Heart FM</li> <li>6. Easy 101/Country 107.3</li> </ol>
<b>JUNE 2016</b>	<b>SOCIAL MEDIA ADS &amp; POSTS – post curbside and MRF audit communication</b>	<ul style="list-style-type: none"> <li>• Refresh: County social media sites + promoted posts on Facebook</li> </ul>
<b>JULY-AUG 2016</b>	<b>COMM OUTREACH – WOODSTOCK MARKET</b>	<ul style="list-style-type: none"> <li>• Participate in community outreach opportunities at the Woodstock Market</li> </ul>
<b>JULY 2016</b>	<b>VIDEO – RECYCLING MRF</b>	<ul style="list-style-type: none"> <li>• Video displaying what happens when your recycling goes to a processing facility, to be uploaded online, shared on social media.</li> </ul>
<b>SEPT 7</b>	<b>CAO UPDATE</b>	<ul style="list-style-type: none"> <li>• CAO update to County Council and CAO's re program status 12 months after launch</li> </ul>
<b>WEEK OF SEPT 12</b>	<b>MEDIA</b>	<ul style="list-style-type: none"> <li>• News release 12 months after launch discussing program success.</li> </ul>

## Appendix B – Monitoring and Measurement Plan: Critical Path

## MONITORING AND MEASUREMENT PLAN

TIMING	ACTIVITY	DESCRIPTION
SEP/15- AUG/16	EVAL CURRENT CUSTOMER SERVICE	<ul style="list-style-type: none"> <li>Monthly evaluation of customer service call through the new customer service reporting system</li> </ul>
SEPT/15- AUG/16	EVAL CURRENT TONNAGE DATA	<ul style="list-style-type: none"> <li>Evaluate monthly curbside garbage, recycling and residual waste tonnage data</li> </ul>
DEC/16	RESIDUAL WASTE AUDITS	<ul style="list-style-type: none"> <li>County staff to perform audit of residual waste at recycling processing facility</li> </ul>
JAN/16	EVAL HISTORICAL AUDIT RESULTS	<ul style="list-style-type: none"> <li>Evaluation of audit data from 2011-2102 curbside audits and waste and recycling audits to establish baseline data for garbage, blue box and residual waste data</li> </ul>
JAN/16	EVAL HISTORICAL CUSTOMER SERVICE	<ul style="list-style-type: none"> <li>Evaluation of customer service tracking data and MPMP annual reporting data</li> </ul>
JAN/16	EVAL HISTORICAL TONNAGE DATA	<ul style="list-style-type: none"> <li>Evaluation of tonnage to establish base line tonnage data for garbage, blue box and residual waste</li> </ul>
FEB/16	EVAL PUBLIC ENGAGEMENT ACTIVITIES	<ul style="list-style-type: none"> <li>Review of customer service statistics, social media hits, Twitter and Facebook activities as well as Wasteline.ca monthly activity reports</li> </ul>
MAY/16	CURBSIDE WASTE/RECYCLING AUDITS	<ul style="list-style-type: none"> <li>Perform curbside waste and recycling audits</li> </ul>
MAY/16	CURBSIDE PARTICIPATION AUDITS	<ul style="list-style-type: none"> <li>Perform curbside participation audits</li> </ul>
JUN/16	EVAL CURRENT AUDIT RESULTS	<ul style="list-style-type: none"> <li>Evaluation of curbside audits and waste and recycling audits to establish for garbage, blue box and residual waste data</li> </ul>
AUG/16	RESIDUAL WASTE AUDITS	<ul style="list-style-type: none"> <li>County staff to perform audit of residual waste at recycling processing facility</li> </ul>
AUG/16	FINANCIAL ANALYSIS	<ul style="list-style-type: none"> <li>Evaluate the financial performance of the new curbside program along with the financial impact that educational activities on improving program performance</li> </ul>

## Appendix C – Contractor Compliance Plan: Critical Path

## CONTRACTOR COMPLIANCE PLAN

TIMING	ACTIVITY	DESCRIPTION
SEPT/15-	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Meeting with Contractor to review the curbside collection program and identified deficiencies</li> </ul>
SEPT/15	EDUCATIONAL TOOLS	<ul style="list-style-type: none"> <li>Program training for collection crew by County</li> </ul>
SEPT/15- AUG/16	EDUCATIONAL TOOLS	<ul style="list-style-type: none"> <li>Development of collection crew tool kit               <ul style="list-style-type: none"> <li>Collection notices</li> <li>Do's and Don'ts</li> <li>Program guidelines</li> </ul> </li> </ul>
SEPT/15- AUG/16	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Monitoring of customer service issues for contractor compliance issues</li> <li>Address deficiencies with contractor after each identified issue</li> </ul>
OCT/15	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Meeting with Contractor to review the curbside collection program and identified deficiencies</li> </ul>
DEC/15	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Meeting with Contractor to review the curbside collection program and identified deficiencies</li> </ul>
JAN/16	CURBSIDE ENFORCEMENT ACTIVITIES	<ul style="list-style-type: none"> <li>Random before and after collection service audits performed by County staff to verify contractor compliance</li> <li>Notify contractor of audit results</li> </ul>
FEB/16	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Meeting with Contractor to review the curbside collection program and identified deficiencies</li> </ul>
MAR/16	CURBSIDE ENFORCEMENT ACTIVITIES	<ul style="list-style-type: none"> <li>Random before and after collection service audits performed by County staff to verify contractor compliance</li> <li>Notify contractor of audit results</li> </ul>
APR/16	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Meeting with Contractor to review the curbside collection program and identified deficiencies</li> </ul>
MAY/16	CURBSIDE ENFORCEMENT ACTIVITIES	<ul style="list-style-type: none"> <li>Random before and after collection service audits performed by County staff to verify contractor compliance</li> <li>Notify contractor of audit results</li> </ul>
JUN/16	CONTRACT ENFORCEMENT	<ul style="list-style-type: none"> <li>Meeting with Contractor to review the curbside collection program and identified deficiencies</li> </ul>

<b>JUL/16</b>	<b>CURBSIDE ENFORCEMENT ACTIVITIES</b>	<ul style="list-style-type: none"><li>• Random before and after collection service audits performed by County staff to verify contractor compliance</li><li>• Notify contractor of audit results</li></ul>
<b>AUG/16</b>	<b>CONTRACT ENFORCEMENT</b>	<ul style="list-style-type: none"><li>• Meeting with Contractor to review the curbside collection program and identified deficiencies</li></ul>