

Recycling Contamination Digital Marketing Campaign



CIF Project Number #882

Final Report
May 2019



Let them Loose!

Make Your Recycling Efforts Count

Don't put your recyclables in plastic shopping bags. Recycling tied in plastic shopping bags end up in landfill.

[Find out why](#)



Too much on your plate?

All containers
should be **empty**
before recycling.

[Learn why...](#)



Prepared for:

Resource Productivity and Recovery Authority
Continuous Improvement Fund

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Executive Summary

Since the launch of bi-weekly waste cart collection in 2016, there has been an ongoing problem of increased contamination of non-recyclable items showing up at Peel's MRF, which ultimately negatively impacts operating costs and the quality of recyclables the Region sells to various markets.

To address this issue, the Region chose to use promotion and education to encourage resident behavior change towards proper recycling habits, by testing a digital-only marketing approach focused on a single contamination issue at a time, and one simple message to encourage behavior change.

The digital marketing campaign evolved into two phases over an 18-month period, from July 2017 through to December 2018.

Phases:

- Phase 1 – focused on bagged recycling
- Phase 2 – focused on food in recyclable containers

Campaign Goal:

- Decrease contamination in the Region's recycling stream, while also diverting waste from landfill.

Target audience:

- Peel residents in Brampton, Mississauga, and Caledon who receive curbside waste collection.

Objectives:

- At 6 months, reduce bagged recycling contamination by 250 tonnes (an estimated 25% reduction), measured monthly.
- At 12 months, maintain a minimum 25% reduction in bagged recycling contamination or more to evaluate sustainable campaign impact over time.
- At 18 months, evaluate changes to determine overall business impact since the start of the campaign.

Measurement and Evaluation:

In comparison to more traditional marketing and communications campaigns, where performance and impact is measured after a campaign's completion, the Region of Peel actively monitored, measured and analyzed the campaign's performance throughout its implementation stage and adjusted along the way.

Measurement was focused on two key performance metrics:

- Monthly MRF in-bound audits
- Digital analytics

Due to the dynamic nature of digital metrics, tied in with in-bound waste audit reporting, staff were able to uncover insights and make monthly campaign improvements, allowing the team to test, iterate, and optimize results in a nimble fashion.

Summary of Phase 1 – Bagged Recycling

Phase 1 was launched in June 2017, with an initial focus on bagged recycling. The plan was to sustain the campaign for several months, while measuring business impact (i.e. decrease in the volume of bagged recyclables entering Peel’s MRF) throughout its implementation phase.

Several digital marketing channels, tools and tactics were used including the following:

- 46-second feature video – promoted on YouTube
- Web landing page – which featured the video, key messaging and the Region’s waste sorter tool
- Digital and social media advertising – targeting Peel residents via Google, Twitter and Facebook
- Email marketing – targeting the Region’s more than 110,000 e-newsletter subscriber base
- Social media sharing – through the Region’s Twitter page
- Region of Peel website – featuring banners and call-outs on key pages of the waste site

Results of the campaign proved successful, with monthly in-bound MRF audits showing a significant decrease of bagged recyclables entering the MRF soon after the campaign launch. The Region sustained the campaign for 15 months, making campaign improvements during this time based on digital metric monitoring. This resulted in maintaining lower contamination levels of bagged recyclables.

With these positive impacts, the Region then re-directed its focus on food contamination in recyclable containers, while still maintaining a lower marketing spend on the bagged recycling campaign. This became Phase 2 of the campaign.

Summary of Phase 2 – Food in Containers

Phase 2, focused on emptying food from containers, was launched in September 2018, using the same digital-only marketing approach and campaign improvements from the bagged recycling campaign.

After four months of sustaining the campaign and monitoring monthly digital metrics and in-bound MRF audits, the Region did not see any significant change in the amount of food contamination entering the MRF.

In addition, in-bound audits were also reporting a slow increase in the volume of bagged recyclables showing up again at the MRF, which gave indication that the low marketing exposure to the bagged recycling campaign may have been the reason for the slow increase.

Overall Results Analysis

Phase 1 results gave strong indication that the messaging to residents about bagged recycling made an impact with residents, which only required a small shift in resident behaviour (of keeping recycling loose). Business outcomes showed drastic and positive impact, and in-bound MRF audit data showed a significant decrease in the volume of bagged recyclables showing up at the MRF.

When analyzing Phase 2 results, there was no significant change in the metrics. Therefore, the Region safely assumes that Phase 2 messaging to “empty your containers” may not have been as clear and straightforward for residents to receive. The instructions provided also required more time and

effort for residents to do and might be a completely new task for some to start doing. The Region can also safely assume that – based on the Region’s previous behaviour insights research – the “yuck” factor may have also been a barrier for residents to act.

To increase the level of confidence in this analysis, further research could be conducted with residents to test and gather feedback on the effectiveness of the messaging and visual material used in Phase 2 of the campaign.

The Region is now making an assessment on how best to move forward with both campaigns.

1. Background

1.1 Community Profile

The Region of Peel serves more than 1.4 million residents and approximately 173,000 businesses in Brampton, Caledon and Mississauga (see Figure 1), delivering a wide range of resident-focused services across the Region including:

- paramedic services
- health programs
- long-term care and services for seniors
- child care support
- waste management
- water and water treatment
- road maintenance
- financial help
- housing and shelter

The Region of Peel is governed by the Regional Chair and 24 members of Council, who represent Mississauga, Brampton and Caledon.

Figure 1: Peel Region Location Map



Socio-economic and planning data on Peel is available from the Peel Data Centre (PDC) at PeelDataCentre.ca. It includes resources, reports and bulletins that summarize the Census and National Household Survey, and Peel's economic activity, human services, health, transportation, monitoring and the environment and community safety.

Table 1: Number of households in The Region of Peel (2017)

Municipality	Population	Single Family Households	Multi Family Households	Total Households
Region of Peel	1,450,000	338,568	100,758	439,326

1.2 Waste Management System

In 1995, waste collection was uploaded to the Region of Peel to take advantage of economies of scale when combining tonnage from Brampton, Caledon and Mississauga.

Peel now has the second largest waste management program in Ontario.

Gross Operating Budget is \$140 Million:

- 77% (\$108M) is paid by tax payers
- 23% (\$32M) is paid by fees and revenue

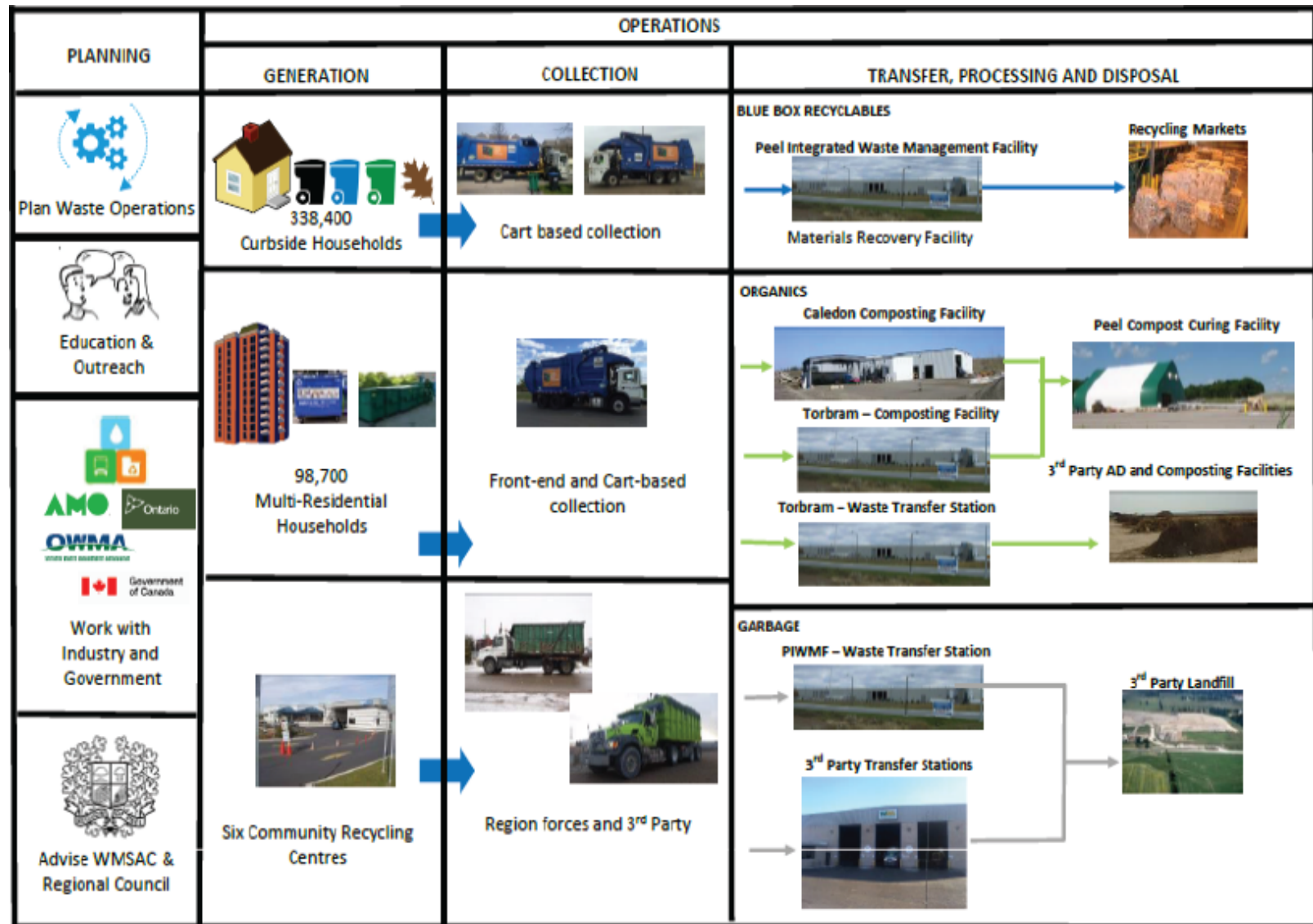
In 2018, Peel's diversion rate was 50% which supports environmental protection and enhanced community sustainability.

The Region of Peel's waste management system is summarized in Table 2 and Figure 2 below.

Table 2: Overview of Region of Peel's Garbage and Recycling Services (2017)

Single Family Service	Service Description	Collection Provider	Processing Provider
Garbage	Bi-Weekly	Emterra and Waste Connections	Internal/External
Recycling	Bi-Weekly	Emterra and Waste Connections	Canada Fibers Limited
Multi-Residential Service	Service Description	Collection Provider	Processing Provider
Garbage	Bi-Weekly	Emterra and Waste Connections	Internal/External
Recycling	Bi-Weekly	Emterra and Waste Connections	Canada Fibers Limited

Figure 2: Overview of Peel's Waste Management System



1.3 Current Waste Management Performance

Table 3: Region of Peel's Current Waste Management Performance (2017)

		Blue Box Recycling		Total Waste Diversion		Disposal		Generation (Total)	
	Units	rate	% of total	rate	% of total	rate	Units	rate	% of total
GAP Reported	tonnes	102,098.97	20%	248,696.71	49%	263,298.70	51%	511,995.41	100%
	Kg/hhld	232.40	20%	566.09	49%	599.32	51%	1,165.41	100%
Single Family	tonnes	88,539.22	20%	235,136.96	54%	199,821.24	46%	434,958.20	100%
	Kg/hhld	261.51	20%	694.50	54%	590.20	46%	1,284.70	100%
Multi Family*	tonnes	13,559.75	18%	13,559.75	18%	63,477.46	82%	77,037.21	100%
	Kg/hhld	134.58	18%	134.58	18%	630.00	82%	764.58	100%

2. Approach

2.1 Planning and Implementation Process

The following steps were taken when planning and implementing the campaign, with details of each step described below:

- Define problem and intended outcomes
- Understand problem/issue
- Create measurement plan
- Design campaign
- Implement
- Evaluate and re-assess

Define problem and intended outcomes

Since the launch of bi-weekly waste cart collection in 2016, there has been an ongoing problem of increased contamination of non-recyclable items showing up at Peel's MRF, which ultimately negatively impacts operating costs and the quality of recyclables the Region sells to various markets.

To address this issue, the Region chose to use promotion and education to encourage resident behavior change towards proper recycling habits.

The main goal of this effort was to decrease contamination in the Region's recycling stream, while also diverting waste from landfill.

Target audience:

Peel residents in Brampton, Mississauga, and Caledon who receive curbside waste collection.

Objectives:

- At 6 months, reduce bagged recycling contamination by 250 tonnes (an estimated 25% reduction), measured monthly.
- At 12 months, maintain a minimum 25% reduction in bagged recycling contamination or more to evaluate sustainable campaign impact over time.
- At 18 months, evaluate changes to determine overall business impact since the start of the campaign.

Understand problem/issue

Discovery sessions were held involving a few teams, including Digital Marketing, Waste Planning and Waste Collections, to better understand the recycling contamination problem in more depth. These discovery sessions also provided an opportunity for healthy collaboration among the teams and to gather input from various subject matter experts.

Through these discovery sessions, the Region examined both the process and available contamination data, with a focus on monthly MRF in-bound waste audits.

Figure 3 shows an in-bound audit report summary that was examined to help better understand the contamination issue at the Region's MRF.

Early into the discussions, the Region identified one main strategy in mind: to focus on a single item or single action that would be easy for residents to quickly understand and take minimal effort to do, but with the potential to make a worthwhile and measurable impact at the MRF.

To support this strategy, the teams considered the following key factors:

- Contamination rank by tonnage and percentages from in-bound waste audit data
- Potential upside for measurable improvement at the MRF and diversion overall
- Ease of communicating the action to a general audience of residents in Peel
- Amount of effort it would be for residents to make the change or take the action

In the end, the Region decided to test a digital-only marketing campaign, focusing on one single item and action: stop putting recyclables in plastic shopping bags.

This focus not only addressed the high volume of blue box material in grocery bags entering the MRF, but it was also an easy behavior to change, requiring low effort on the resident's part to recycle. It also avoided recyclables being processed as garbage and sent to landfill.

Figure 3: 2016 Year-To-Date Report Summary of Non-Recyclable Material, Curbside Collection

2016 - YTD Non-Recyclable Material	
Curbside Collection	
Material	Percent
100% Non-Recyclable	
BAGGED GARBAGE	2.91%
HOME OFFICE SUPPLIES (binders, cases, etc.)	1.25%
HARD PLASTICS (toys)	1.01%
COMPOSITE PACKAGING	0.66%
INCONTINENCE and SANITARY PRODUCTS	0.41%
WRAPPERS	0.38%
OTHER PLASTICS (CAPS, BROKEN PLASTIC)	0.34%
HOT TAKE OUT CUPS	0.33%
OTHER POLYCOATS	0.12%
HHW	0.07%
Mistakenly Placed in Recycling Carts	
GREEN BIN MATERIAL	2.04%
BLUE BOX MATERIAL with CONTENTS	1.02%
TEXTILES	0.77%
CONSTRUCTION MATERIAL	0.72%
SCRAP METAL	0.66%
ELECTRONIC MATERIAL	0.23%
MOTOR OIL CONTAINERS	0.03%
Considered Proper with Corrections	
BLUE BOX MATERIAL in GROCERY BAGS	2.04%
FIBRE with PLASTIC OVERWRAP	0.50%
Recyclable (unable to recover)	
DEBRIS and GLASS FINES	8.90%
LESS THAN 4 x 6 FIBRE	0.91%
FUSED BLUE BOX MATERIAL	0.38%
LESS THAN 50ML CONTAINERS	0.06%
Total	25.72%

This focus also allowed the Region to test how effective it would be to deliver key messages to Peel residents, using only digital-based communication tools (such as video, a custom landing page, social media advertising, search engine advertising, and email marketing) rather than traditional channels (such as newspaper print ads and mobile street signs), to influence behavior change.

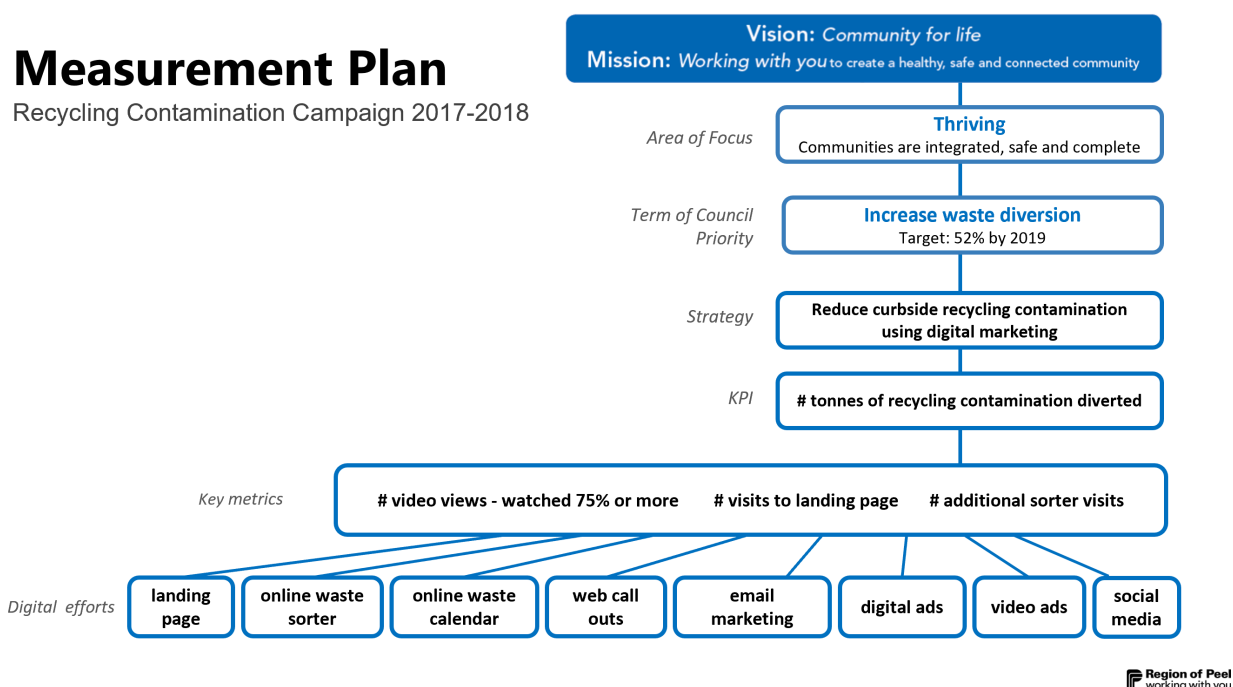
Create measurement plan

Due to the dynamic nature of digital metrics, tied in with in-bound waste audit reporting, staff used digital metric data to uncover insights and make monthly campaign improvements, allowing the team to test, iterate, and optimize results in a nimble fashion.

The plan was a staged approach, which included: 1) Test and learn; 2) Ramp up; and 3) Iterate. Plans were to sustain it for at least one year – 15 months in this case – while measuring monthly in-bound audit results at the MRF.

The following measurement plan was created to connect the digital metrics with results at the MRF for bagged recycling in plastic grocery bags.

Figure 4: Measurement Plan for Recycling Contamination Campaign 2017-2018



The monitoring and measurement methodology is explained in more detail under section 3 of this report.

Design Campaign and Implement

Key Messages:

Delivering simple, concise messaging to residents was critical to the effectiveness of the campaign. In collaboration between the Region's Marketing and Communications and Waste Management teams, the following messages were developed and used:

- Let them Loose! Don't tie recyclables in grocery bags.
- Set them Free! Make your recycling efforts count. Don't put recyclables in plastic shopping bags. Recycling tied in grocery bags end up in landfill.
- Visit peelregion.ca/waste to learn more and find out how to properly dispose of hundreds of items, using our online waste sorter.

Communications Tools Used:

The Region took an integrated digital marketing approach to implement the campaign, using a mix of digital channels and tactics.

Figure 5: Campaign's Integrated Digital Marketing Approach

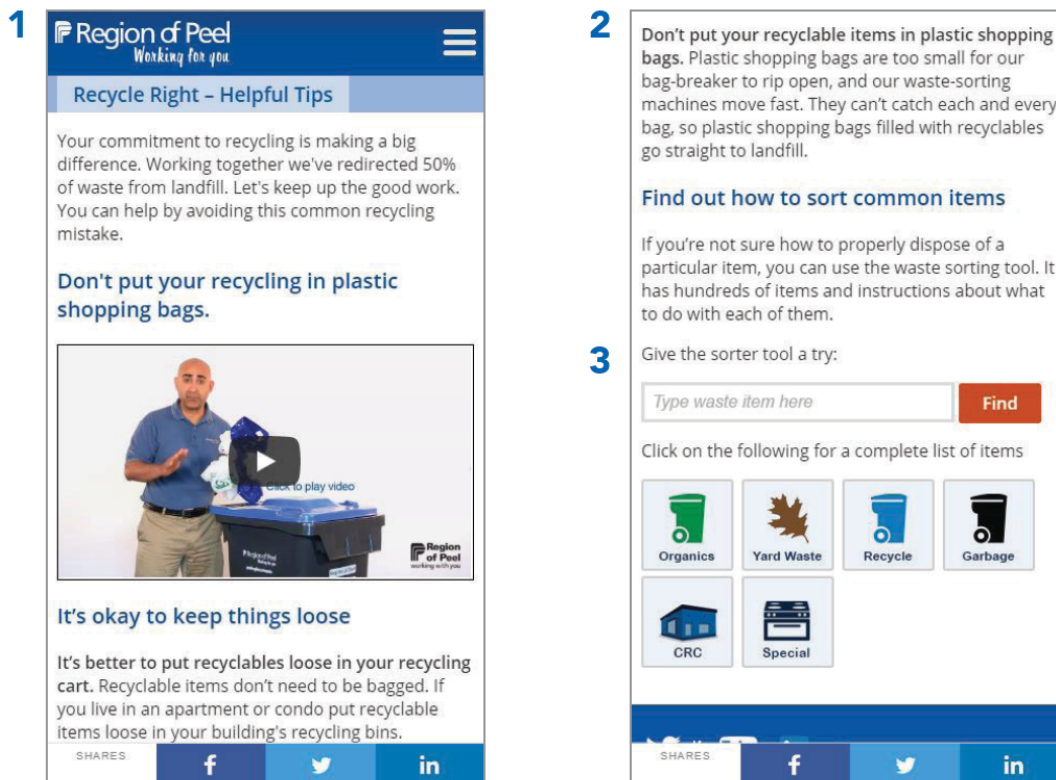
Approach



A) Landing Page

- Positioned to recognize positive participation and good work done by residents and designed to be clear and specific with 3 goals: 1) watch the video, 2) consume info, and 3) use the sorter.

Figure 6: Images of Campaign's Landing Page (Mobile Version)



B) Video

- 46-second [video](#) featured on the campaign landing page and promoted on YouTube.

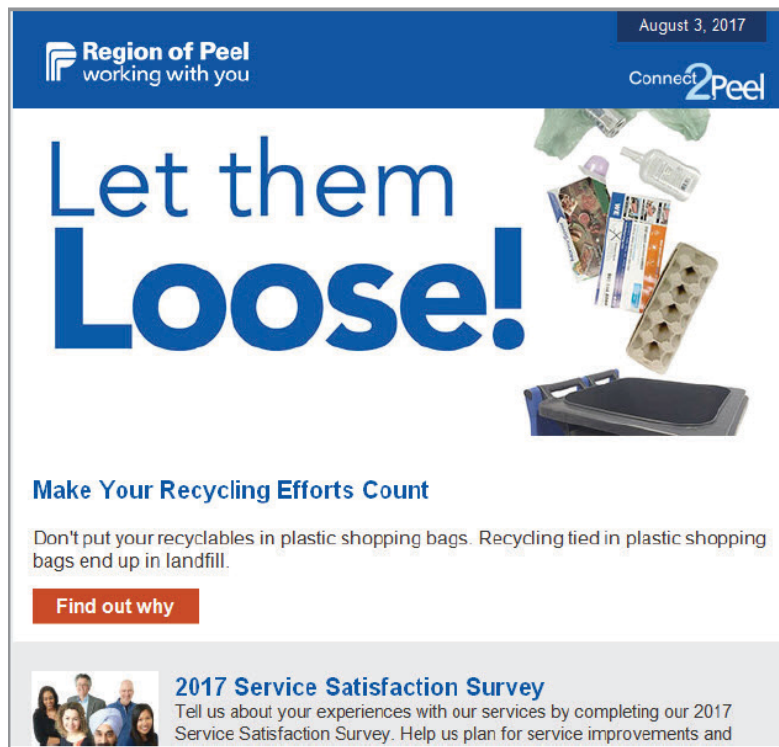
Figure 7: Image of Campaign Video



C) Email Marketing:

- Multiple mailings sent to Region of Peel's email subscriber lists, including Connect to Peel with over 110,000 subscribers.

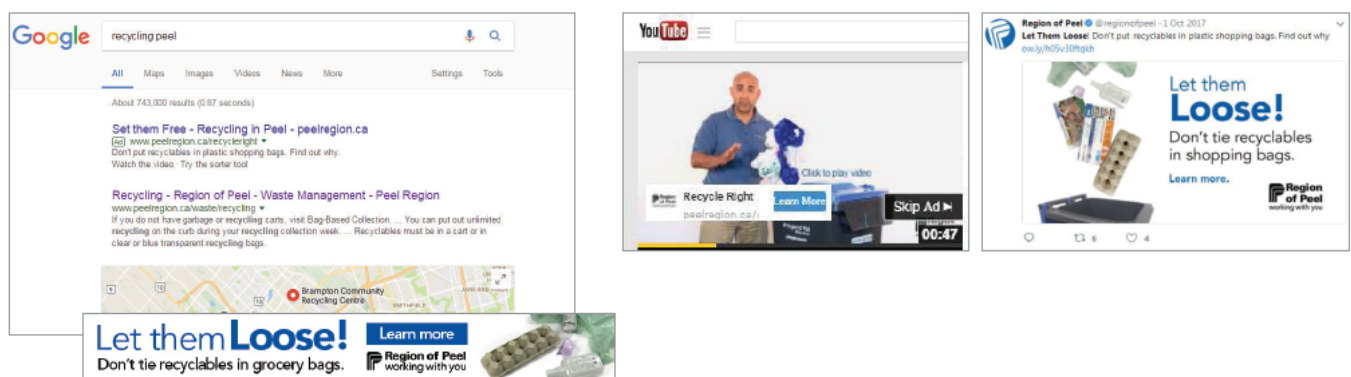
Figure 8: Image from Connect to Peel e-Newsletter, August 2017 Issue



D) Digital and Social Media Advertising:

- Paid promotion using YouTube, Google Ads, Twitter and Facebook to reach Peel residents

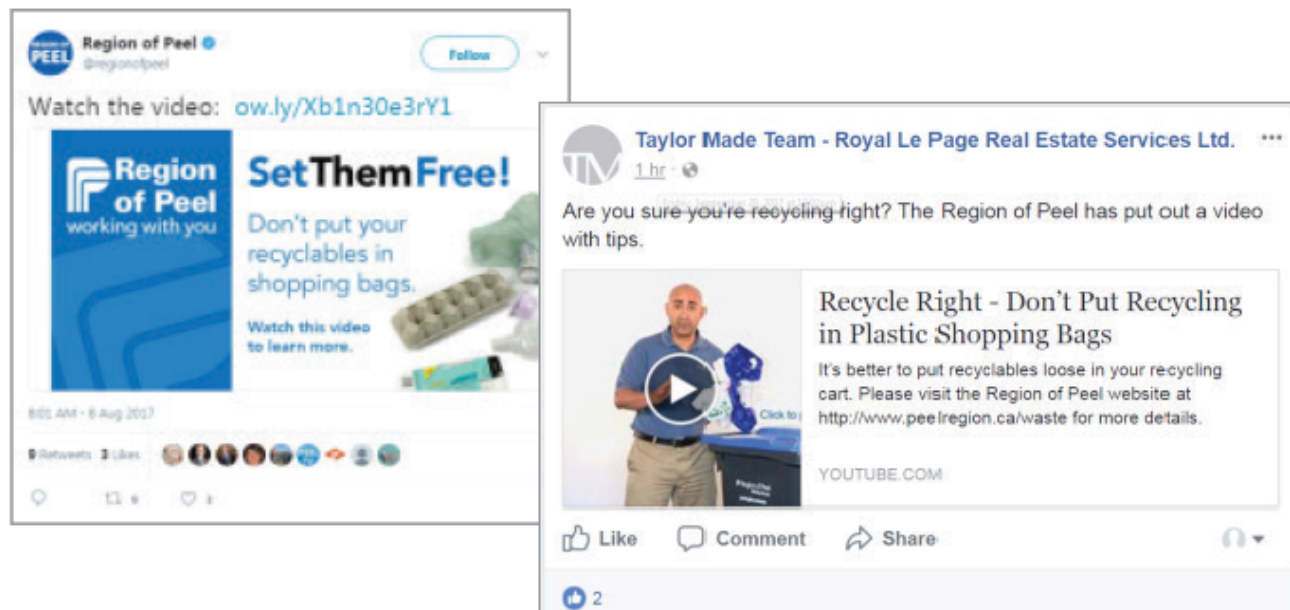
Figure 9: Images from Digital/Social Media Advertising (Google, YouTube, Twitter and Facebook)



E) Social Media Sharing

- On-page social sharing options and posts on the Region of Peel's Twitter accounts

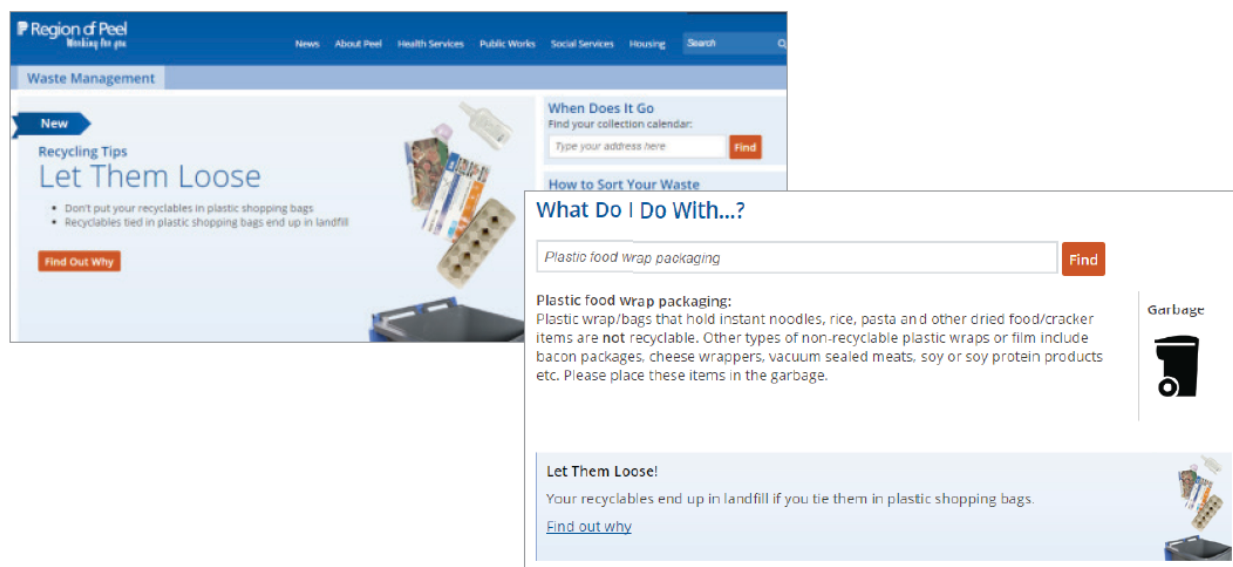
Figure 10: Images of Social Media Posts



F) Region of Peel Website – Peelregion.ca

- Featuring waste site banners, waste-specific section web banners, and waste sorter call-outs.

Figure 11: Images of Web Promotion on Region of Peel's Website (peelregion.ca)



2.2 Monitoring, Measurement Methodology and Analysis

Unlike traditional communication campaigns, where analysis is performed after campaign execution, a digital marketing campaign is iterative, and data collection and analysis are done during the campaign. The insights are used to optimize outcomes and make decisions while the campaign is in market. As such, measurement methodology and analysis are combined and will be discussed together.

Staged Monitoring and Analysis

The implementation of the Region's digital marketing campaign was a staged approach, and monitoring digital performance and analysis was done throughout the campaign's various stages.

The "Test and Learn" stage and the "Ramp Up" stage involved more monitoring and analysis due to more experimentation and testing across channels. As the most effective approaches and channels became clear, the monitoring was scaled back and became focused on key metrics (video views, landing page visits, and waste sorter visits).

In the early stages, digital metrics and tracking was monitored on a weekly basis across the digital channels in play. To deliver across multi-channels and monitor performance, a variety of analytics platforms were used as shown in Figure 12.

Figure 12: Digital Analytics Platforms Used During Campaign



From these analytic tools, several categories of metric data were captured and monitored at the beginning of the campaign, as shown in Figure 13.

Figure 13: Example of Digital Marketing Metrics Gathered During Campaign's First 11 weeks

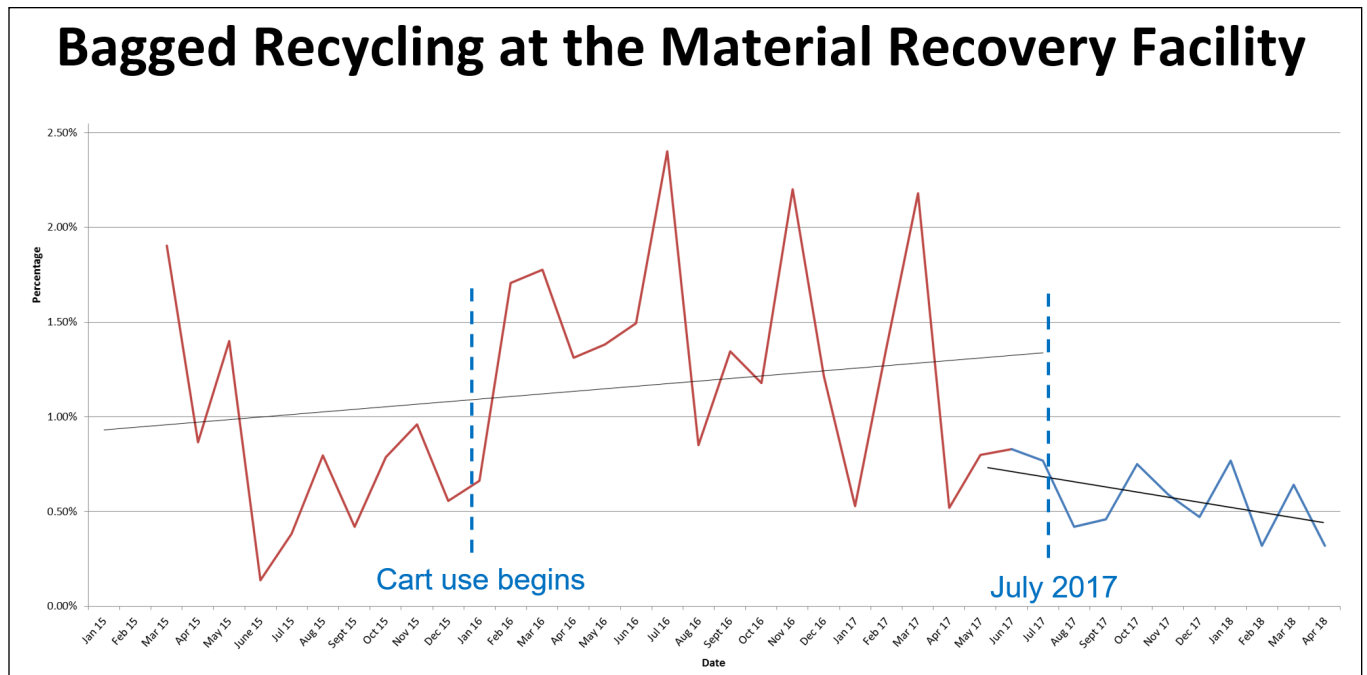
Recycling Contamination - Campaign Performance (start date July 11, 2017)															
Landing Page	Benchmark	Week 1 7/11 to 7/17	Week 2 7/18 to 7/24	Week 3 7/25 to 7/31	Week 4 8/1 to 8/7	Week 5 8/8 to 8/14	Week 6 8/15 to 8/21	Week 7 8/22 to 8/28	Week 8 8/29 to 9/4	Week 9 9/5 to 9/11	Week 10 9/12 to 9/18	Week 11 9/19 to 9/25	% Change from benchmark	% Change from previous week	Total
Landing Page Visits	-	613	718	571	8830	3729	2269	2053	2901	3001	2269	1889	-	-20%	28843
Sorter Visits	-	372	435	344	3205	1257	913	791	1141	1051	756	722	-	-5%	10987
Sorter Searches	-	431	538	407	3718	1428	971	855	1291	1184	832	865	-	4%	12520
Searches per Visit	-	1.2	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.2	-	8%	12.6
Video Played	-	308	260	183	2819	793	459	424	843	689	492	446	-	-10%	7716
75% Video Played	-	299	253	178	2741	766	438	408	812	657	469	424	-	-11%	7445
Video Retention %	88%	97%	97%	97%	97%	97%	95%	96%	96%	95%	95%	95%	8.0%	0%	96%
Sorter Tool															
Total Sorter Visits	4894	4890	5163	4864	8360	6575	5101	5077	9244	7485	5329	5036	2.9%	-6%	67124
Total Sorter Searches	13308	15251	14238	13687	22317	17093	13875	13823	23400	20910	14049	13218	-0.7%	-6%	181861
Total Searches per Visit	2.7	3.1	2.8	2.8	2.7	2.6	2.7	2.7	2.5	2.8	2.6	2.6	-3.5%	0%	30.0
Landing Page Visits	-	403	434	342	1205	709	472	443	958	603	403	436	-	8%	6408
Video Played	-	253	183	104	249	119	99	96	307	136	99	93	-	-6%	1738
75% Video Played	-	242	173	100	237	118	96	92	302	133	95	90	-	-6%	1678
Video Retention %	88%	96%	95%	96%	95%	99%	97%	96%	98%	98%	96%	97%	10.0%	1%	97%
Twitter															
# Tweets	7	7	4	1	13	13	10	10	14	12	18	12	71.4%	-50%	114
# Clicks	-	75	59	11	59	61	34	53	77	61	60	38	-	-58%	588
# Impressions	-	10813	5080	1157	18350	23814	13861	15993	19452	15648	18068	13309	-	-36%	155545
# Engagement	-	275	129	27	257	199	205	138	177	118	298	97	-	-207%	1920
Engagement Rate	1.5%	2.5%	2.5%	2.3%	1.4%	0.8%	1.5%	0.9%	0.9%	0.8%	1.6%	0.7%	-51.4%	-126%	16.0%
Video Played	-	22	21	7	19	27	10	17	23	20	24	12	-	-100%	202
75% Video Played	-	19	19	7	18	27	10	16	22	20	23	12	-	-92%	193
Video Retention %	88%	86%	90%	100%	95%	100%	100%	94%	96%	100%	96%	100%	13.6%	4%	96%
Waste Hero Banner															
Landing Page Visits	-	120	308	228	210	259	184	204	277	277	82	0	-	-	2149
Video Played	-	37	76	83	60	56	56	70	98	89	21	0	-	-	646
75% Video Played	-	36	70	77	54	53	55	68	95	83	18	0	-	-	609
Video Retention %	88%	97%	92%	93%	90%	95%	98%	97%	97%	93%	86%	-	-2.6%	-	94%
Digital Text Ads															
Clicks	-	-	-	-	751	783	567	731	88	197	212	435	-	51%	3764
Cost per Click	-	-	-	-	0.81	0.85	0.94	0.83	0.58	0.68	0.68	0.92	-	26%	0.83
Cost per Conversion	-	-	-	-	19.64	18.49	16.59	15.93	7.28	8.4	8.94	14.84	-	40%	15.68
Video Played	-	-	-	-	36	37	35	44	8	18	17	31	-	45%	226
75% Video Played	-	-	-	-	31	36	32	38	7	16	16	27	-	41%	203
Video Retention %	88%	-	-	-	86%	97%	91%	86%	88%	89%	94%	87%	-1.0%	-8%	90%
Digital Display Ads															
Clicks	-	-	-	-	-	355	484	222	892	1027	985	474	-	-108%	4439
Cost per Click	-	-	-	-	-	0.62	0.59	0.66	0.63	0.65	0.63	0.65	-	3%	0.62
Cost per Conversion	-	-	-	-	-	2.5	3.09	3.27	2.65	3	3.29	2.89	-	-14%	2.87
Video Played	-	-	-	-	-	95	101	45	226	232	200	110	-	-82%	1009
75% Video Played	-	-	-	-	-	88	93	45	211	221	189	106	-	-78%	953
Video Retention %	88%	-	-	-	-	93%	92%	100%	93%	95%	95%	96%	9.5%	2%	94%
Email Marketing (Connect to Peel)															

A newly-developed measurement plan became the foundation of this work that brought a connection between two main areas of focus for metrics: business outcomes and digital results. This brought meaningful context to the results of the campaign.

Business outcomes focused on:

- Changes with monthly in-bound audit reports, specific to bagged recyclables (see Figure 14)

Figure 14: Bagged Recycling Material at the MRF, January 2015 – April 2018



Digital results focused on:

- Video views (only counting views where people watched at least 75% of the video – the point where the main message is complete in the 46-second video).
- Visits to the landing page, which featured the video.
- Increase in online Waste Sorter visits (giving indication to how many times people took the “next action” and tried the online waste sorter because of visiting the campaign landing page).

Data-Informed Decision Making

As part of the “Test and Learn” and “Ramp Up” stages, the Region used both monthly in-bound waste audit data and digital marketing metrics to make ongoing campaign improvements to do more of what was working.

For example:

- Testing different creative with residents and using the creative that performs better.
- Adapting to audience preference – using video metrics to be sure people were watching the promoted video long enough, rather than producing new or additional videos.
- Optimizing advertising spend – spending more on ad types that resulted in lower cost per video view (getting more residents to watch the video at a lower cost).

Further experimentation

Phase 2 of the campaign was a further experiment to see if contamination, caused by food contamination in recycling, could be reduced using a similar method.

The experiment involved another video campaign focused on emptying food from containers and was launched in September 2018, using a similar digital-only marketing approach with a focus on video advertising as it had proven to be the highest performing channel.

The focus on food contamination was based on re-visiting the MRF in-bound waste audit data (as shown in Figure 15) that identified green bin material as one of the top material types mistakenly placed in recycling carts.

The team knew that messaging focused on emptying food from containers was a bigger ask of residents in terms of effort, and the message was not as clear as it was with bagged recycling. However, given the positive impact that was seen during Phase 1 of the campaign, the team decided to move forward with the experiment.

Figure 16 and Figure 17 show the concepts used to guide the wording and approach for the messaging and video content.

Figure 16: Creative concepts for Phase 2 of Campaign, Empty Your Containers

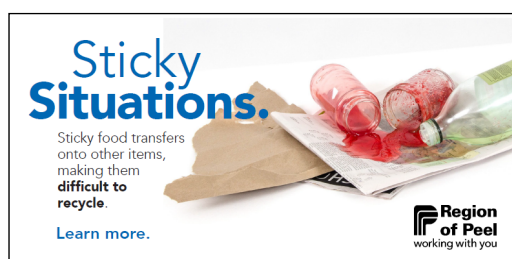
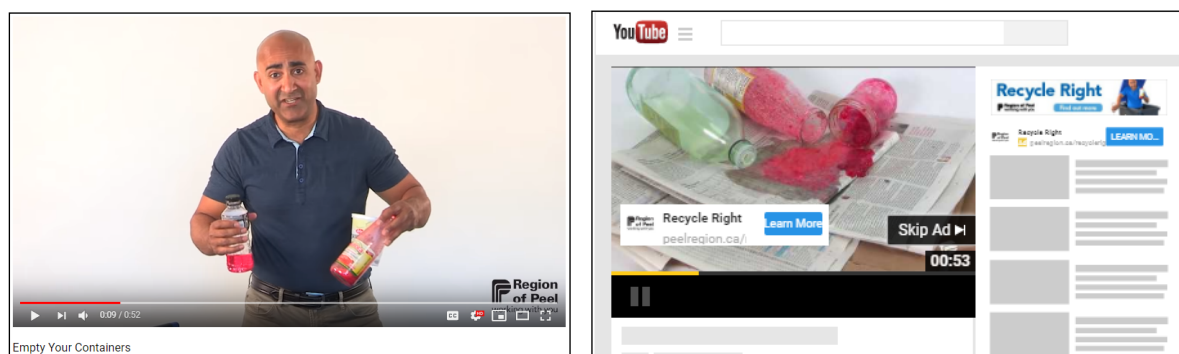


Figure 15: 2016 Year-To-Date Report Summary of Non-Recyclable Material, Curbside Collection

2016 - YTD Non-Recyclable Material	
Curbside Collection	
Material	Percent
100% Non-Recyclable	
BAGGED GARBAGE	2.91%
HOME OFFICE SUPPLIES (binders, cases, etc.)	1.25%
HARD PLASTICS (toys)	1.01%
COMPOSITE PACKAGING	0.66%
INCONTINENCE and SANITARY PRODUCTS	0.41%
WRAPPERS	0.38%
OTHER PLASTICS (CAPS, BROKEN PLASTIC)	0.34%
HOT TAKE OUT CUPS	0.33%
OTHER POLYCOATS	0.12%
HHW	0.07%
Mistakenly Placed in Recycling Carts	
GREEN BIN MATERIAL	2.04%
BLUE BOX MATERIAL with CONTENTS	1.02%
TEXTILES	0.77%
CONSTRUCTION MATERIAL	0.72%
SCRAP METAL	0.66%
ELECTRONIC MATERIAL	0.23%
MOTOR OIL CONTAINERS	0.03%
Considered Proper with Corrections	
BLUE BOX MATERIAL in GROCERY BAGS	2.04%
FIBRE with PLASTIC OVERWRAP	0.50%
Recyclable (unable to recover)	
DEBRIS and GLASS FINES	8.90%
LESS THAN 4 x 6 FIBRE	0.91%
FUSED BLUE BOX MATERIAL	0.38%
LESS THAN 50ML CONTAINERS	0.06%
Total	25.72%

Figure 17: Screenshot of YouTube Video Preview for Phase 2



Video testing

During the first few weeks of the video campaign, the Region tested two versions of the video to see if the audience would prefer one video over the other. This was determined by tracking percentage of video played and view rate.

The differences in the two videos was subtle. One video used more familiar kitchen-like backgrounds for the sections about what to do. The other video used a plain white studio-type background.

Instead of guessing which video to use, or deciding on a video based on opinions, the Region tested both and used real-time data to observe if the subtle difference between the videos would impact performance.

Ultimately, the video with the more familiar kitchen backgrounds performed better, as more people watched this version longer, in comparison to the second video. The results showed 10% higher audience retention. Table 4 shows such results after a few weeks.

Table 4: Empty Your Containers A/B Video Test Metric Results

AB Test (September 1, 2018 - September 17, 2018)									
Video	Impr.	Views	View rate	Avg. CPV	Cost	Video played to 25%	Video played to 50%	Video played to 75%	Video played to 100%
Empty Containers Video Version 5a	94,013	38,786	41.3%	\$0.03	\$1,055	50.77%	42.6%	38.5%	33.10%
Empty Containers Video Version 1a	102,595	31,499	30.7%	\$0.03	\$1,054	40.08%	31.1%	26.1%	19.64%
Total: Videos	388,881	135,580	34.9%	\$0.03	\$3,811	45.32%	36.2%	32.2%	26.11%

Version 5a: Using kitchen backgrounds

Version 1a: Using plain white studio background

3. Project Results

Results for this campaign were determined after the completion of each phase (1 and 2), with a focus on two main types of results:

- Business outcomes (using MRF In-bound audit data)
- Digital results (using various digital analytics platforms, as mentioned on page 7)

Phase 1 – Bagged Recycling

At the end of Phase 1 (focused on bagged recycling) the following results were determined:

Business Outcomes (June 2017 to December 31, 2018)

- Nearly 50% reduction of grocery bags in recycling at the Material Recovery Facility
- 1,110 tonnes of recyclable material diverted from landfill
- \$200,800 in cost savings and additional revenues for Waste Management operations

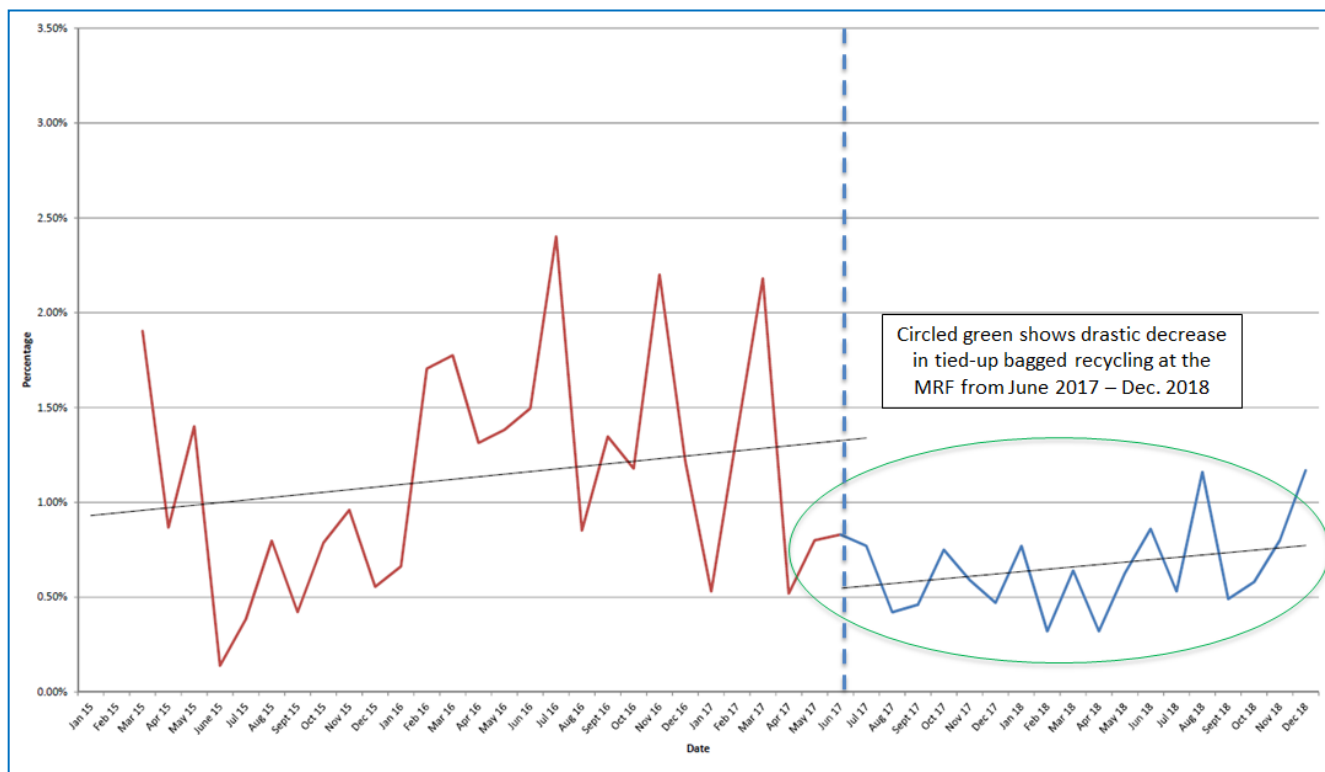
Analysing several business metrics, a 19-month comparison was used to determine overall campaign results (see Table 5).

Table 5: Phase 1 Business Outcome Results, Recycling in Grocery Bags, 19-Month Comparison

Recycling In Grocery Bags			
19-Month Comparison			
Actuals			
Time Period	Nov '15 - May '17	Jun '17 - Dec '18	
Tonnes Into MRF	171,803.10	166,938.61	
Recycling Revenue per Tonne	-\$ 126.22	-\$ 92.45	
Residue Disposal Cost	\$ 69.36	\$ 72.96	
Composition of Material in Grocery Bags (Audits)			
Recycling In Grocery Bags (%)	1.29	0.66	Nearly 50% drop
Recyclable Material (%)	-	69.95	
Garbage (%)	-	30.05	
Calculations			
Tonnes to Residue	2,216.26	1,101.79	
Recycling Revenue	\$ -	-\$ 71,251.72	
Residue Disposal Costs	\$ 153,719.79	\$ 24,156.28	
Total	\$ 153,719.79	-\$ 47,095.44	
19-month Impact			
Net Savings and Additional Revenue	\$ -	\$ 200,815.24	
Recycling Tonnage Diverted	-	1,114.47	
Projected Annual Impact			
Net Savings and Additional Revenue	\$ -	\$ 126,830.68	
Recycling Tonnage Diverted	-	703.87	

Figure 18 demonstrates the drastic decrease in bagged recyclables entering Peel's MRF since the start of the campaign.

Figure 18: Bagged Recycling Material at the MRF, January 2015 – December 2018



Digital Results (June 2017 to December 31, 2018)

- Video: watched 1,923,238 times (unique views, with video played to at least 75% of video). Watch time was equivalent to 18,698 hours or 779 days' worth of attention.
- Web Landing Page: over 144,000 visits to the custom web landing page
- Waste Sorter Tool: over 32,000 additional visits generated

Phase 2 – Food in Recyclable Containers

Due to the short duration of Phase 2 of the campaign (focused on food in recyclable containers), the Region was only able to base its metrics on three completed MRF in-bound audits from October – December 2018.

The Region compared these three audits to the previous 12 months before Phase 2 of the campaign (September 2017-September 2018), which involved 12 audits worth of data. As such, Phase 2 metrics could only be analyzed as a small snapshot in time, with a high level of variance and lower level of confidence in the results.

To address this data challenge, we reported Phase 2 metrics by analyzing composition percentage in the following two categories:

- Organic contents in recyclable containers
- Loose organics in the recycling stream

Since the recycling collection process, by its very nature, creates loose organics that may have been inside a recyclable container, this posed a challenge to fully validate whether organic material was originally left in a recyclable container or disposed of loosely into the blue bin. As such, the Region chose to use a “high-mean-low” format, to give a statistically-valid 95 percent confidence range.

The Region then focused on the mean (average) between the two categories to use as measurement during Phase 2 implementation.

Table 6 shows the results of these audit metrics.

Table 6: MRF In-Bound Audit Results for Organic-Related Material – Before and After Phase 2

ORGANIC CONTENTS IN RECYCLABLE CONTAINERS	High	Mean	Low
Before Campaign Phase 2 (Sep. 2017-Sep. 2018)	1.24%	0.98%	0.73%
After (October – December 2018)	1.79%	1.31%	0.84%
LOOSE ORGANIC MATERIAL IN RECYCLING STREAM	High	Mean	Low
Before Campaign Phase 2 (Sep. 2017-Sep. 2018)	2.93%	2.52%	2.11%
After (October – December 2018)	3.31%	2.61%	1.90%

At the end of Phase 2, the following results were determined:

Business Outcomes (October – December 2018):

- No significant change in the composition percentage of organic contents in recyclable containers from October to December 2018, in comparison to audit results from the 2017 year.
- Slight increase of 0.1% in the composition percentage of *loose organics in the recycling stream* from October to December 2018, in comparison to audit results from the 2017 year.

Digital Results (September 1, 2018 to December 31, 2018):

- Video: watched 1,181,455 times (unique views, with video played to at least 75% of video). Watch time was equivalent to 12,800 hours or 533 days’ worth of attention.

In conclusion, digital results during Phase 2 showed successful levels of audience engagement. However, when comparing audit data before and after Phase 2, any change in business outcomes was determined to be inconclusive, as there was still significant variance in the results.

4. Project Budget

Phase 1 (Bagged Recycling) - Cost Breakdown

DURATION: 18 months (June 2017 - December 2018)

<u>TACTIC</u>	<u>COST</u> (external only)
Digital Ad Campaign Management	\$ 9,605.00
Advertising - Facebook Ad Spend	\$ 1,382.83
Advertising - Google Ad Spend	\$ 153,914.85
Advertising - Twitter Ad Spend	\$ 2,688.00
Video (internal labour cost only)	\$ -
Custom Web Landing Page (internal labour cost only)	\$ -
Peelregion.ca Banners / Call-Outs (internal labour cost only)	\$ -
Email Marketing (internal labour cost only)	\$ -
	<hr/>
	\$ 167,590.68

Phase 2 (Food in Containers) - Cost Breakdown

DURATION: 3 months (October - December 2018)

<u>TACTIC</u>	<u>COST</u> (external only)
Digital Ad Campaign Management	\$ 1,200.00
Advertising - Google Ad Spend	\$ 27,418.73
Video - Internal Cost Only	\$ -
Custom Web Landing Page (internal labour cost only)	\$ -
Peelregion.ca Banners / Call-Outs (internal labour cost only)	\$ -
Email Marketing (internal labour cost only)	\$ -
	<hr/>
	\$ 28,618.73
	<hr/>
TOTAL CAMPAIGN COST =	\$ 196,209.41

5. Overall Analysis and Lessons Learned

Overall Results Analysis

Phase 1 results gave strong indication that the messaging to residents about bagged recycling made an impact with residents, which only required a small shift in resident behaviour (of keeping recycling loose). Business outcomes showed drastic and positive impact, and in-bound MRF audit data showed a significant decrease in the volume of bagged recyclables showing up at the MRF.

When analyzing Phase 2 results, there was no significant change in the metrics. Therefore, the Region safely assumes that Phase 2 messaging to “empty your containers” may not have been as clear and straightforward for residents to receive. The instructions provided also required more time and effort for residents to do and might be a completely new task for some to start doing. The Region can also safely assume that – based on the Region’s previous behaviour insights research – the “yuck” factor may have also been a barrier for residents to take action. To increase the level of confidence in this analysis, further research could be conducted with residents to test and gather feedback on the effectiveness of the messaging and visual material used in Phase 2 of the campaign.

Lessons Learned

Several key learnings and insights were gained from planning and implementation of this campaign.

Discovery Sessions

Plan adequate time in advance for discovery sessions to develop a deeper understanding of the problem, current state, and the opportunities. Book more sessions than required and pace the sessions so there’s time for reflection. Be open to including a variety of subject matter experts and disciplines. These multidisciplinary sessions, early in the process, helped build trust for effective collaboration and brought multiple perspectives to the situation.

Guiding Principles

Establish guiding principles for the campaign especially when trying new approaches. The Region found it helped the core team make decisions, work through disagreements, and prevent falling back to old tendencies that may not serve the objectives.

Measurement

Establish and get agreement on a measurement framework that connects business outcomes and campaign metrics. Define the key performance indicator for the campaign and ensure that it supports the key business outcome for the business or program. With key performance metrics, you can make more effective decisions around ad spend, channels and performance to optimize for the right outcomes.

Lifetime value

Consider the potential lifetime value or longer-term value of a campaign. In many cases, the impact may extend beyond the campaign’s duration, especially if the campaign may have shifted resident behaviour. If possible, continue to measure the business/program results and financial impact after the campaign finished. Consider any additional labour or measurement costs needed to sustain key performance measures and financial impact over the long-term. These additional ongoing measures and financial impacts can help build a strong business case for future campaigns.

Audience testing to make evidence-based decision making

Whenever possible, test with the audience and make decisions based on data. For example, the core team had varying ideas and opinions on which approach would be best for the “Empty your Containers” video. The differences were subtle around using plain studio backgrounds or more familiar backgrounds, such as a kitchen for resident instructions. Instead of trying to come to consensus, test both, evaluate, and use the one that performed better.

Keep the message simple

To maintain a clear message, avoid the temptation of “information stuffing” to cover minor exceptions or technical variables. In the Region of Peel’s case, past communications have included messaging that was technically correct, resulting in main messages competing with extra details and exceptions.

Consider a guiding principle around simplicity to help remind the team that a clear message is more effective than a more detailed one. For a marketing campaign, try to avoid the temptation to include extra details to address an exception or technical variable, especially if it is not central to the main message.

For example, the message for this campaign was very simple: do not put recyclables in tied plastic grocery bags. However, as is often the case in recycling, there’s an exception because not all recyclables should be loose. Plastic bags and plastic films should be bundled together and tied in one plastic grocery bag. There was a temptation to address this in the messaging; however, the team concluded that it would be best to avoid even mentioning it as part of the video and campaign. It was a good decision and it helped keep the campaign message clear for residents. A few residents did ask about whether it was still ok to tie up plastic bags in bundles for recycling, and those questions were addressed through customer service, and making instructions available through the waste sorter on the Region’s website.