

Region of Durham

Clear Bag Pilot Study

Final Report

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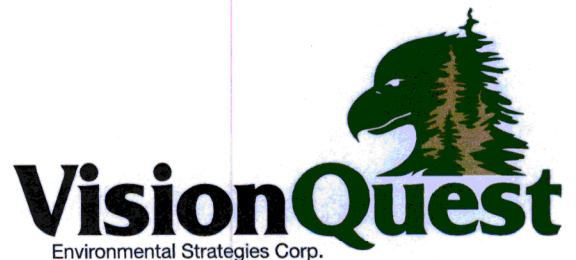


Table of Contents

Executive Summary	3
Background	4
Methodology	6
Service Level Comparison	6
Public Education and Communication	8
Observations	
Pickering Pilot Area	
Macro Level Tonnages	11
Comparison of Diversion Trends to Historic	12
Micro Level Audits	13
Set-Out Rates	15
Clarington Pilot Area	
Macro Level Tonnages	17
Micro Level Audits	18
Set-Out Rates	20
Public Attitudes Survey Results	22
Financial Cost / Diversion Estimates – Regional Extrapolation	24
Conclusions	26

Appendices

A. Clear Bag Pilot Collection Route – Clarington	28
B. Clear Bag Pilot Collection Route – Pickering	30
C. Pickering Garbage Tonnage (Macro Level)	32
D. Pickering Recycling Tonnage (Macro Level)	34
E. Pickering Organics Tonnage (Macro Level)	36
F. Clarington Garbage Tonnage (Macro Level)	38
G. Clarington Recyclable Tonnage (Macro Level)	40
H. Clarington Organic Tonnage (Macro Level)	42
I. Pickering Pilot Area Macro Tonnage Field Data (tonnes)	44
J. Clarington Pilot Area Macro Tonnage Field Data (tonnes)	46
K. Pre-Study Communications Campaign Support Material	49
L. Study Communication Campaign Support Material	57
M. Examples of Clear Bag Set-outs	64
N. Communication and Education Strategy Individual Component Cost Breakdown	69

Tables

1. Waste Collection Service Level Comparison: Pickering & Clarington	6
2. Historic Waste Diversion Achievement Comparison	12
3. 2008 Single Family Dwelling Curbside Waste Overview	24
4. Region Wide Extrapolated Diversion & Cost Estimates – Voluntary Program	25
5. Region Wide Extrapolated Diversion & Cost Estimates – Mandatory Program	25

Figures

1. Historic Waste Diversion Achievement Comparison (2007-2009)	12
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Executive Summary

On June 18, 2008, Regional Council passed a resolution authorizing Regional staff, in conjunction with area municipalities, to proceed with the implementation of a three month clear bag pilot program for garbage collection on one collection route each in the City of Pickering and the Municipality of Clarington. The pilot project had two specific objectives: to assess whether there is an increase in a) diversion, and b) participation in the recycling/composting programs.

The pilot project was divided into three specific phases or time periods to enable staff to collect and segregate data under differing enforcement level scenarios, as follows:

- **Phase One – Voluntary:** Residential participation was voluntary and no additional direct interaction of correspondence beyond initial launch package was provided to individual residents.
- **Phase Two – Voluntary with encouragement:** Residential participation remained voluntary. However, non participating residences were approached by Regional staff and provided with supplementary promotional material such as door hangers to stimulate participation.
- **Phase Three – Mandatory with enforcement:** Non-compliant bags of garbage placed curbside were tagged and left behind informing residents that all garbage must be placed in clear garbage bags.

Three levels of data were collected during the pilot; macro route tonnages, micro household audits and control household audits. The macro data was the most statistically significant and the most appropriate for extrapolation Region-wide. The micro household audits provided an insight into the specific effects on each waste-stream. The control audits were available to assist in the explanation of potential unforeseen variability. Note: due to the difference in service-levels between the Pickering and Clarington pilot areas, the Pickering data was utilized to extrapolate Region-wide results.

Based on a comparison to the 2008 waste tonnage data, a clear bag program for garbage could increase the waste diversion rate within the Region by 3%. This increased diversion represents about 4,668 tonnes of recyclable and organics and has the potential to cost an additional \$61,000 per year in processing and collection fees. Note: the micro household audits indicated that with a reduction in the overall waste generation, the relative diversion rates could increase by up to 7.7%.

The use of clear bags did not influence the level of participation in the recyclable program but did increase the participation in the organics program by an average 14 % when compared to seasonal variations. Clear bags could therefore be a useful tool to further enhance the Region's participation in the organics program.

A total of 1,381 surveys were circulated to all households within both pilot areas. Approximately 540 surveys were completed and returned representing a response rate of approximately 39%. The majority of respondents (53%) expressed support towards the use of a clear bag policy for garbage bags, including a decrease in the garbage bag limit if it helped to increase waste diversion. The majority of respondents (53%) believed that they would recycle more material as a result of their participation in the clear bag project.

Although privacy concerns were raised, the majority of respondents indicated that the ability to place a smaller opaque bag within a larger clear bag would satisfy their concerns. Illegal dumping was not considered of high concern.

Incremental costs to purchase clear bags were also raised as a concern, however, considering that clear plastic bags sold retail are comparable in price to opaque plastic bags, the simple transition from an opaque to clear bag should not result in any cost increases.

An extensive public education and promotional strategy was implemented by Regional staff to ensure that all pilot area households were well informed of the intent of the pilot project and the specific parameters on how to participate. The separation of increased diversion or participation resulting from the intensive promotion and education was not possible. Therefore, comparable results of a Region-wide clear bags program would only be possible if a significant promotion and education program was undertaken at a cost of \$35 per household.

The effects of the voluntary or mandatory phases produced mixed results. If the clear bags program is approved for Region-wide implementation, it is recommended that a voluntary program be initially started and a mandatory program investigated for potential future use.

Background

The Region of Durham is an upper tier municipal government situated east of the City of Toronto. The population is approximately 621,000 and includes eight local level municipalities including:

- The Town of Ajax;
- The Township of Brock;
- The Municipality of Clarington;
- The City of Oshawa;
- The City of Pickering;
- The Township of Scugog;
- The Town of Whitby;
- The Township of Uxbridge.

The Region has assumed responsibility for the provision of waste management services to residents for the constituent municipalities, including:

- Collection, processing and marketing of blue box recyclables;
- Disposal of residual garbage;
- Composting of source separated organic waste;

- Composting of leaf and yard waste;
- Operation of a rural landfill site (Brock Township);
- Operation of two waste transfer facilities (Oshawa and Port Perry);
- Operation of three depots for the collection of Municipal Hazardous and Special Waste;
- Operation of three depots for the collection of Waste Electronics and Electrical Equipment;
- Education and promotion of waste reduction programs; and
- Long term planning for waste management.

With the exception of the City of Oshawa and the Town of Whitby, the Region has also assumed responsibility for the collection of residual garbage; food waste, yard waste, Christmas trees and bulky goods for the lower tier municipalities.

In 1999, Regional Council approved the Long Term Waste Management Strategy Plan: 2002 to 2020, with a goal of diverting at least 50% of the residential waste from disposal by 2007, or earlier. This goal was reached in 2007. Subsequently, in January 2008, Regional Council adopted the following motion:

The Region of Durham agrees to continue to support an aggressive residual waste diversion and recycling program in order to achieve and / or exceed on or before December 2010, a 70 percent diversion recycling rate for the entire Region and that such aggressive programs shall continue beyond 2010.

In 2008, the Region achieved a waste diversion rate of 51%, and intends to investigate existing and potential options that will allow them to increase the residential waste diverted from landfill to 70% by the end of 2010. In the 2008 Solid Waste Management Servicing and Financial Study (Report 2008-J-4), staff recommended the introduction of clear plastic bags for garbage collection effective October 1, 2008. The clear bag initiative was identified as one option to further aid in achieving a 70% diversion target by encouraging residents to recycle more material under their existing curbside recycling (Blue Box) program and divert additional source separated food organics in the Green Bin. Staff was directed to further investigate this issue and report back to Council at a later date.

Across North America, over 75 Clear Bag Collection Programs have been launched in cities including Guelph - Ontario, the entire Province of Prince Edward Island, numerous (33) municipalities across Nova Scotia, Saint John - New Brunswick, Omaha - Nebraska. A recent (2008) study funded by Stewardship Ontario, entitled The Use of Clear Bags for Garbage as a Waste Diversion Strategy: Background Research on Clear Bag Programs across North America (E&E Project # 177) provides an excellent overview of such programs.

On June 18, 2008, Regional Council passed a resolution authorizing Regional staff, in conjunction with area municipalities to proceed with the design and implementation of a three month clear bag pilot program for garbage collection on one collection route each in the City of Pickering and the Municipality of Clarington.

The pilot study had two specific objectives, being:

- 1) To determine if the use of clear bags for garbage would result in the increase in diversion of recyclable and organic material from out of the garbage stream; and
- 2) To determine if clear bags resulted in increased participation in waste diversion programs.

Methodology

The clear bag program was designed to enable for the gathering of data at a macro level for the pilot area and micro level through waste audits of selected households. Waste tonnages tracked from the pilot study as a whole were analysed to identify overriding diversion trends. Further detailed analysis of data collected from a much smaller sample size of twelve households in each pilot area was undertaken to provide evidence to support the general observations from the macro level. Data was also collected prior to the launch of the study to provide for a comparative benchmark of baseline measurement to quantify diversion impacts.

Two specific pilot areas were selected to provide for a comparative analysis of differing service levels to quantify potential impacts on human behaviour and ultimately waste diversion achievements.

Within Clarington, a single collection route comprised of 774 single family dwellings (SFDs) was selected and monitoring and waste collection was undertaken over an 11 week period (January 14th – March 25th, 2009). See Appendix A for site map.

Similarly, within Pickering, a single collection route comprised of 607 single family dwellings was selected and comparative monitoring was undertaken over a 13 week period (January 15th – April 9th 2009). See Appendix B for site map.

Service Level Comparisons

The fact that service levels differed between the Pickering and Clarington Pilot Areas was considered as a factor that may contribute to differences in residential set-out rates and overall material diversion rates between the two areas. Therefore, by providing a comparative pilot, both areas would be analysed independently of each other to assess diversion achievements under either scenario.

Table 1

Waste Collection Service Level Comparison between Pickering and Clarington Pilot Areas.

Pilot Area	Collection Frequency		
	Garbage	Blue Box	Green Bin
Clarington	Weekly 3 bag limit	Bi-weekly	Weekly
Pickering	Bi-weekly 4 bag limit	Weekly	Weekly

As the pilot study concluded, the Municipality of Clarington and the Townships implemented revised service levels that were consistent with those provided in Pickering throughout the pilot study. It was determined that an analysis of the true effect of clear bags should focus on the Pickering pilot area, since the service levels in place there had already achieved significant increases in waste diversion. This increase is also expected in Clarington and the Townships as a result of the service level changes.

The pilot study was divided into three specific phases or time periods to enable staff to collect and segregate data under differing enforcement level scenarios, as follows:

1) Phase One – Voluntary: Jan 14th – 28th in Clarington / Jan 15th – Feb 5th in Pickering.

Residential participation was voluntary and no additional direct interaction or correspondence beyond initial launch package was provided to individual residents. The intent within this phase was to monitor residential willingness to use clear bags for garbage under their own accord without added encouragement by Regional officials.

2) Phase Two – Voluntary with encouragement: Feb 4th – 25th in Clarington / Feb 12th – Mar 5th in Pickering.

Residential participation remained voluntary. However, non participating homes were left door hangers to assist in educating them on how they comply with the program. The later half of the phase residences were still given the door hangers, but they were also approached by Regional staff to provide more extensive education to stimulate participation. All non-compliant households were left a door hanger informing them of collection issues and required changes. Each week, a selection of compliant residents received acknowledgement that they were doing a great job.

3) Phase Three – Mandatory with enforcement: Mar 4th – 25th in Clarington / Mar 12th – Apr 9th in Pickering.

Non-compliant bags of garbage placed curbside were tagged and left behind.

Throughout the duration of the pilot study regular curbside monitoring was undertaken on each set-out day to quantify the number of households placing their waste at the curb. Total weights of garbage, recyclables and organics were recorded. This monitoring was considered to be at a “macro” level as the data that was compiled included every household within the pilot area. The information was analysed to provide overall trends in the segregation and diversion of recyclable and organic material from the garbage, as presented within this report.

Within each pilot area, a smaller sample size of twelve households was randomly selected and individual household garbage was collected twice through the pilot study, and once prior to the study inception (baseline data). The garbage was audited to provide a snapshot of the amount of garbage placed curbside, as well as the amount of divertible material that remained within the garbage. This information was used to determine the effectiveness of requiring clear bags as a stimulus to increase the diversion – or capture rate – of waste through

existing programs. Audits undertaken during the mandatory Phase Three period offered additional insight into the effectiveness of utilizing enforcement to drive diversion.

To compensate for seasonal or monthly variations in waste generation and set-out differences, two corresponding control areas (comprised of six households each) were selected to enable staff to undertake comparable audits of garbage. These control areas were located outside the pilot area, but within close proximity. Data collected from each of these areas was to be used only if data gathered at the macro level indicated any inconsistencies with the data from the micro level audits.

Public Education and Communication

An extensive public education and promotional strategy was developed by Regional staff to ensure that all pilot area households were well informed of the intent of the pilot study and how to participate. See Appendix K and L for samples of the promotional material used.

Pre-Pilot Study (November to January)

Advertising

- Article in Durham Works newsletter
- Durham Region and local municipalities websites had links to a main Clear Bag Pilot Study page
- Public Service Announcements (PSA) for newspapers and radio (PSA's also ran prior to the enforcement phase and after the pilot was complete)
- Television appearances were done by Regional staff in March and June

Introduction Letter

The introduction letter was hand delivered by Regional staff technicians in three phases to attempt a face to face discussion with all residents and answer any questions they may have. The first attempt was done during daytime business hours, the second in the evenings, and the third was done on the weekends.

- Introduction letter
- Map of Pilot Study Area
- FAQ (Frequently asked Questions)
- Phases of Enforcement

School Presentations

Presentations on “best practices” were given to the students in the schools located in the pilot areas. Handouts on the public information sessions were given to students to take home to their parents.

Public Information Sessions

Two information sessions were held in each pilot area from 6:30 to 9:00 pm. There were two technicians and one manager at each session. The sessions were held at the schools located inside of the pilot areas. A total of 18 residents came to the Pickering sessions and 24 in Clarington.

Door Hanger Reminders

Door hangers with reminders for three weeks prior to pilot start, and one week prior to start were hand delivered by a delivery company. A two week reminder was planned but since it was during the holiday season, the delivery companies were closed.

Clear Bags Pilot Study Kit

The kit was hand delivered by Regional staff technicians to resident's doors. Staff attempted face to face discussions with residents if they were home.

- Instructions
- FAQ
- Fridge Magnet
- Supply of complementary clear bags for duration of pilot. Bags were donated by Clorox (GLAD).

Road Signs

Road signs were placed at the entrances to the pilot areas as an additional reminder for residents within the boundary.

Focus Families

A focus family was chosen in each pilot area; the families were interviewed prior to the start of the pilot and after it finished. Their participation was also tracked throughout the pilot.

Prior to the study, both families expressed that:

- They received very good information on the purpose of the study, the stages of the study, and the expectations for residents who were part of the study areas.
- This study was a good initiative to educate residents on their household wastes and how to source separate prior to collection, especially younger persons who may not have known this before.
- They were sceptical as to whether residents would comply with the process of this study and whether it would indeed decrease their residual waste after composting and recycling.

Post-study comments, both families expressed that:

- As a result of this pilot study, that they would use both the recycling and composting waste diversion programs offered by the Region; whereas, this was not the case prior to the study for one of the families.
- There was an overall community acceptance of the program based on conversations with neighbours and walks through their neighbourhoods.

- Most of their residual garbage was plastic and more consideration should be given to making producers more responsible for their packaging.
- That they were likely to carry on setting out their residual garbage in clear bags -- one family as an educational tool for their children; the other based on the fact that they had to purchase garbage bags anyway, whether clear, opaque or coloured.

Overall, both families found the study to educate, inform, structure and create community awareness of waste diversion and the impact they can have through simply setting out their household waste.

During Pilot (Jan to March)

Door Hangers

- “Collection Issue” door hangers were delivered to residents during Phase 2 of the pilot. It identified if there was a collection issue and reminded residents that during Phase 3, enforcement would begin and could result in garbage being left behind.
- The week prior to enforcement staff spoke to any residents that still had collection issues and were not using clear bags.
- “Thanks for Sorting” door hangers were left for residents who demonstrated that they did a good job in setting out the proper materials in the correct manner. A handful of homes were randomly chosen each week.

Standard Operating Procedures

A list of operating procedures was given to the contractors prior to enforcement phase.

Collection Issue Stickers

Stickers were given to the waste collectors to leave on any non-compliant garbage bags. Once the enforcement period began, staff allowed the residents and the waste collectors to make their own judgement. Staff monitored the pilot areas prior to and after collection to see what decisions were made.

Satisfaction Survey

All residents in the pilot areas were mailed a survey package that included a survey and a postage paid envelope to return the survey, or they had the option to fill out the survey online to a dedicated webpage. A draw prize was given as an incentive of participation.

- Notice of end of pilot study was included with the survey.

The extensive communications and education campaign cost \$35 per household. Total P&E expenditures incurred during the Clear Bag Pilot Study totalled \$ 36,822 excluding the supply of the complimentary GLAD Clear Bags (valued at \$12,000). A detailed breakdown of associated costs for each component of the pilot project for the 1381 households is found in Appendix N.

Observations - Pickering Garbage Tonnage (Macro Level)

Garbage:

- Under a voluntary clear bag program, garbage (as a percentage of the overall curbside waste stream) decreased by 13% compared to baseline of 62% to 49% – Chart A vs. Chart B;
- Under a mandatory clear bag program, garbage (as a percentage of the overall curbside waste stream) decreased by 23% compared to baseline from 62% to 39% - Chart A vs. Chart C;
- A mandatory clear bag program increased diversion by an additional 10% over a voluntary program.

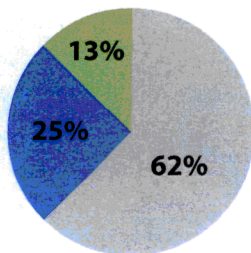
Recyclables:

- Under a voluntary clear bag program, recyclables (Blue Box), as a percentage of the overall curbside waste stream, increased by 5% from a baseline of 25% to 30% - Chart A vs. Chart B;
- Under a mandatory clear bag program, recyclables (Blue Box), as a percentage of the overall curbside waste stream, increased by 11% from a baseline of 25% to 36% - Chart A vs. Chart C;
- A mandatory clear bag program increased diversion of recyclables by an additional 6% over a voluntary program;

Organics:

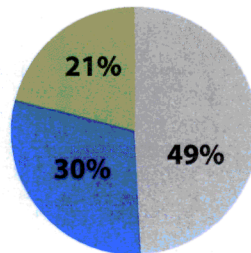
- Under a voluntary clear bag program, organics (Green Bin), as a percent of the overall curbside waste stream, increased by 8% from a baseline of 13% to 21% - Chart A vs. Chart B;
- Under a mandatory clear bag program, organics (Green Bin), as a percentage of the overall curbside waste stream, increased by 12% from a baseline of 13% to 25% - Chart A vs. Chart C;
- A mandatory clear bag program increased diversion of organics by an additional 4% over a voluntary program.

Chart A - Baseline



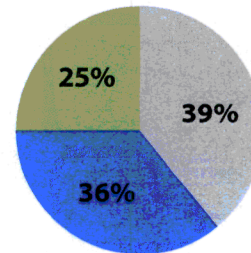
38% Diversion

Chart B - Voluntary



51% Diversion

Chart C - Mandatory



61% Diversion

Garbage

Recyclables

Organics

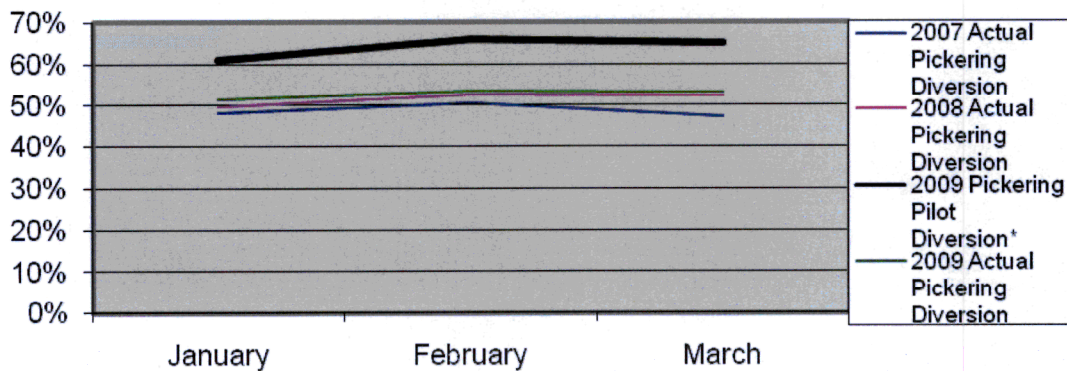
The above information was determined by recording the total tonnage of each material stream collected during each phase of the pilot project divided by the number of collection periods within the phase, and further divided by the number households. The individual amount (weight) of material collected was then converted to a percentage of all of the material from the household. Additional detailed information utilized to derive these figures is available in Appendices F - H.

Comparison of Diversion Trends to Historic (2007 & 2008) Macro Data

At a macro level, the total waste diversion levels identified above were compared to historical diversion levels achieved within Pickering during the months January through March in both 2007 and 2008. This information provides insight into how the use of clear bags in 2009 (pilot) compared to previous years while removing any potential seasonality variances is demonstrated in Figure 1.

Figure 1

Historic Waste Diversion Achievement Comparison (2007 – 2009)



A review of data from the past two years during the months January through March indicates that the diversion rate averaged 49% in 2007, 52% in 2008 and 53% in 2009 for the City of Pickering (Table 2). However, the Pickering clear bag pilot area averaged a diversion rate of 64% on a month by month comparison over the same months. In summary, the clear bag study area outperformed both the 2007 and 2008 diversion achievements through the months January to March, as well as Pickering, outside the pilot area in 2009 by approximately 10%.

Table 2

Historical Waste Diversion Comparison (%)

	January	February	March	Average
2007 Actual Pickering Diversion	48%	50%	47%	49%
2008 Actual Pickering Diversion	50%	53%	52%	52%
2009 Actual Pickering Diversion	51%	54%	53%	53%
2009 Pickering Pilot Diversion*	61%	66%	65%	64%

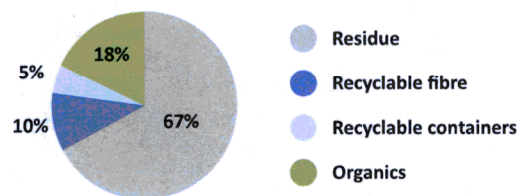
Note: As specific pilot phases do extend into different months, the identified diversion numbers will not correlate exactly to diversion achievements identified by phase.

Pickering Micro Level Audits

As previously mentioned under the study methodology, two garbage audits were performed during the pilot study to assess the composition of the garbage and quantify the amount of divertible recyclable and organic material that remained. In addition, a baseline audit of the same households was performed immediately prior to the commencement of the pilot study to provide benchmark information. The intent of these micro audits was to supplement the findings from the macro audits. Garbage samples were obtained from 12 households (the same households were selected for each separate audit period).

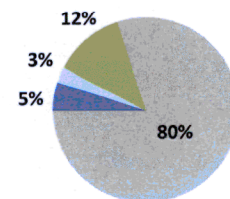
The initial baseline audit indicated that residents placed an average of 11.6 kg of garbage at the curb per set-out. Of this, 3.8 kg (33%) could have been diverted under existing curbside programs, (1.2 kg of fibre, and 0.6 kg of containers and 2.0 kg of organics).

Baseline Garbage Audit Results - December 18th, 2008



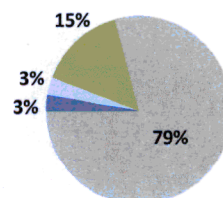
The Phase Two audit indicated that residents placed an average of 4.8 kg of garbage at the curb per set-out. Of this, 1.0 kg (20%) could have been diverted under existing programs, comprised of 0.2 kg of fibre, 0.2 kg of containers and 0.6 kg of organics. The decrease in overall waste is attributed to the seasonal variance.

Phase Two Garbage Audit Results - February 26th, 2008



The Phase Three audit illustrated that residents placed an average of 8.6 kg of garbage at the curb per set-out. Of this, 1.7 kg (21%) could have been diverted under existing programs, comprised of 0.3 kg fibre, 0.3 kg containers and 1.2 kg organics.

Phase Three Garbage Audit Results - April 9th, 2009



Summary of Pickering Micro Audits

Garbage:

- The tonnage of divertible material in the garbage decreased by 13% from 33% to 20% (3.8 kg to 1 kg per hhld) under a voluntary clear bag program;
- The tonnage of divertible material in the garbage decreased by 12% from 33% to 21% (3.8 kg to 1.7 kg per hhld) under a mandatory clear bag program;
- During the baseline period, residents set out an average of 11.9 kg / hhld of garbage. During the voluntary period, residents set out 4.8 kg/ hhld. During the mandatory period, residents set out an average of 8.6 kg per hhld.
- Seasonal variances attributed towards a substantial amount of the 58% increase in garbage set-out during the baseline period;
- No significant difference in actual tonnage of garbage was observed when compared between the voluntary and mandatory clear bag periods;

Recyclables:

- The percentage of recyclables in the garbage decreased by 7% under a voluntary clear bag program;
- The percentage of recyclables in the garbage decreased by 9% under a mandatory clear bag program;
- A mandatory clear bag policy did result in an increase in the diversion of recyclable material when compared to a voluntary program.

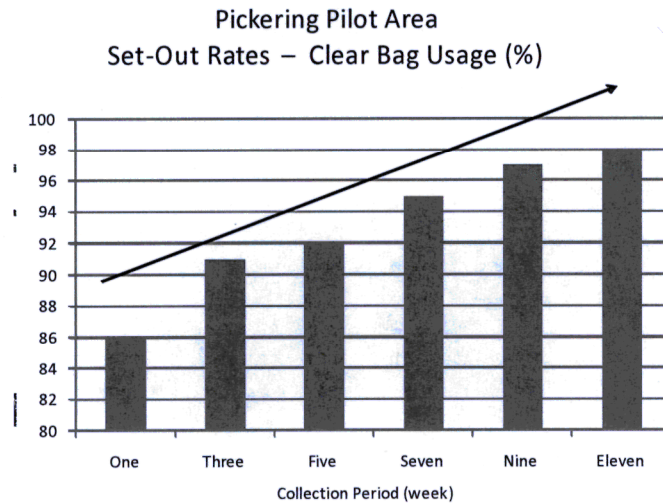
Organics:

- The percentage of organics in the garbage decreased by 6% under a voluntary clear bag program, when compared to the baseline period;
- The percentage of organics in the garbage decreased by 3% under a mandatory clear bag program when compared to baseline;
- A mandatory clear bag policy did not result in a significant increase in the diversion of recyclable material when compared to a voluntary program.

Pickering Set-out Rates

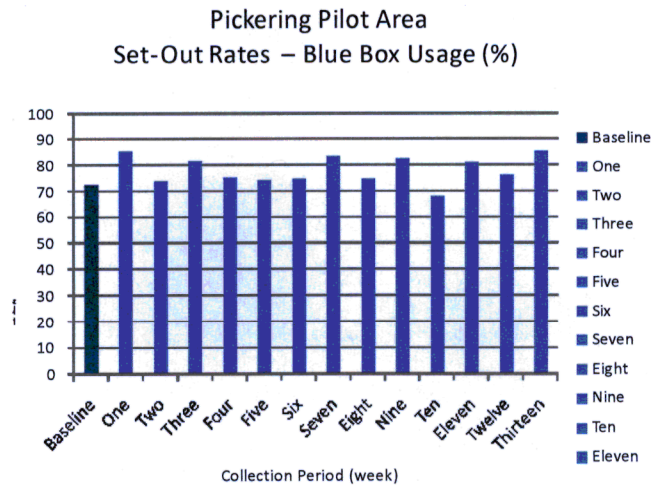
Garbage:

At the start of the Clear Bag Pilot Study, usage of clear bags was very high at 86%. A mandatory requirement to use clear bags increased participation to a high of 98%.



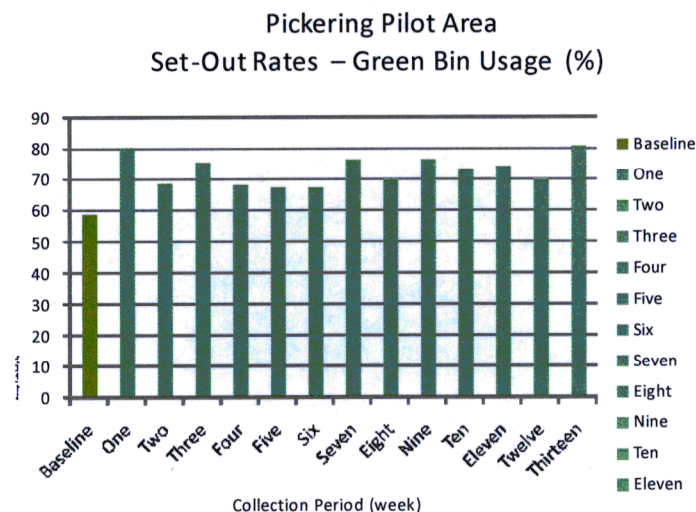
Recyclables:

Baseline monitoring of the Pickering Pilot area undertaken prior to the launch of the pilot study indicated that the blue box set-out rate was 73%. During the pilot study, there was an average increase in blue box set-outs of 6% totally up to 79% of households throughout the duration of the pilot study. However, mandatory enforcement of the clear bag policy over a voluntary program did not result in an increase in set-out rates of blue boxes.



Organics:

Baseline monitoring of the Pickering Pilot area undertaken prior to the launch of the pilot study indicated that the green bin set-out rate was 59%. Monitoring during the pilot study indicated an average increase of green bin set-out by 12% up to 71% under a voluntary program, with 4 spikes into the 75-80%. Mandatory enforcement of a clear bag program further increased set out by an additional 4% up to 75%. Overall, there was not a significant difference in set out observed between the voluntary and mandatory program.



Summary of Pickering Set-Out Rates

Garbage

- Usage of clear bags under a voluntary program was 86%;
- Usage of clear bags under a mandatory program was 98%; and
- Mandatory over voluntary requirements to use clear bags did increase usage by 12%;

Recyclables

- Blue box usage increased 6% (to 79%) under a voluntary clear bag usage policy. However, there was no increase in the incremental tonnage of recyclables collected when compared to baseline, due to seasonal variances;
- Blue box usage did not change (from 79%) under a mandatory clear bag usage policy; and
- Higher compliance in set-out does not equate to higher diversion as residents may actually be placing less material in the container at the curb.

Organics

- Green Bin usage increased 12% (to 71%) under a voluntary clear bag usage policy, compared to baseline;
- Green Bin usage increased 16% (to 75%) under a mandatory clear bag usage policy, compared to baseline;
- Mandatory over voluntary requirement to use clear bags did increase Green Bin usage by 4%;

Clarington Macro Level Tonnage Audits

Garbage:

- Under a voluntary clear bag program garbage as a percentage of the overall curbside waste stream decreased by 6% compared to baseline of 59% to 53% – Chart A vs. Chart B;
- Under a mandatory clear bag program garbage as a percentage of the overall curbside waste stream decreased by 9% compared to baseline from 59% to 50% - Chart A vs. Chart C;
- A mandatory clear bag program decreased garbage by an additional 3% over a voluntary program;

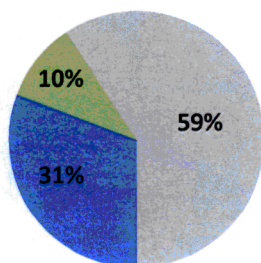
Recyclables:

- Under a voluntary clear bag program, recyclables (Blue Box) as a percentage of the overall curbside waste stream increased by 1% from a baseline of 31% to 33% - Chart A vs. Chart B;
- Under a mandatory clear bag program, recyclables (Blue Box) as a percentage of the overall curbside waste stream increased by 4% from a baseline of 31% to 35% - Chart A vs. Chart C; and
- Mandatory clear bag program illustrated a potential to increase diversion of recyclables by an additional 4% over a voluntary program.

Organics:

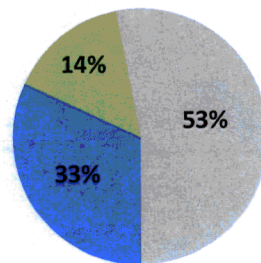
- Under a voluntary clear bag program, organics (Green Bin), as a percent of the overall curbside waste stream, increased by 5% from a baseline of 10% to 14% - Chart A vs. Chart B;
- Under a mandatory clear bag program, organics (Green Bin), as a percentage of the overall curbside waste stream, increased by 5% from a baseline of 10% to 15% - Chart A vs. Chart C; and
- A mandatory clear bag program did not increase organics diversion over a voluntary program.

Chart A - Baseline



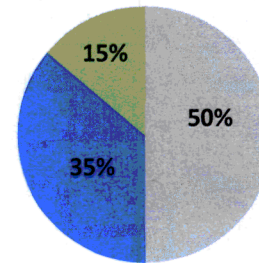
41% Diversion

Chart B - Voluntary



47% Diversion

Chart C - Mandatory



50% Diversion

Garbage

Recyclables

Organics

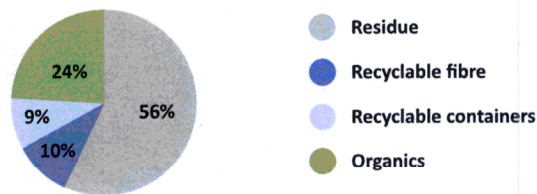
The above information was determined by recording the total tonnage of each material stream collected during each phase of the pilot study dividing it by the number of collection periods within the phase, and further divided by the number households. The individual amount (weight) of material collected was then converted to a percentage of all of the material from the household. Additional detailed information utilized to derive these figures is available in Appendices I and J.

Clarington Micro Level Audits

Two garbage audits were performed during the pilot study to assess the composition of the garbage and quantify the amount of divertible recyclable and organic material that remained. In addition, a baseline audit of the same households was performed immediately prior to the commencement of the pilot study to provide benchmark information. Garbage was obtained from twelve households.

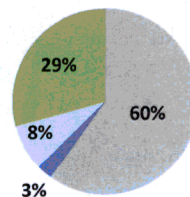
The initial baseline audit indicated that 43% of the garbage could have been diverted under existing curbside programs. On a per household basis, this amounted to 5.6 kg of material that was truly divertible, comprised of 1.1 kg of fibre, 0.9 kg of containers and 2.6 kg of organics.

Baseline Garbage Audit Results - December 17th, 2008



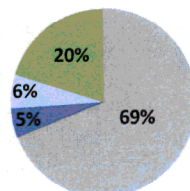
The first audit undertaken during the pilot study was performed on February 25, 2009, during Phase Two (Voluntary). Results of this audit indicated that the amount of divertible material in the garbage had decreased to comprise only 40% of the garbage. On a per household basis, this amounted to 3.4 kg of divertible material made up of 0.3 kg of fibre, 0.6 kg of containers and 2.5 kg of organics.

Phase Two Garbage Audit Results - February 26th, 2008



A final audit was performed on March 25th, during Phase Three to determine if the mandatory requirement for clear bags in that phase resulted in an increased capture of truly divertible material. Results of this audit indicated that divertible material made up 31% of the garbage. On a household basis, this amounted to 2.6 kg of divertible material comprised of 0.4 kg of fibre, 0.5 kg of containers and 1.7 kg of organics.

Phase Three Garbage Audit Results - March 25th, 2009



Summary of Clarington Micro Level Audits

Garbage

- The tonnage of divertible material in the garbage decreased by 3% from 43% to 40% (5.6 kg to 3.4 kg per hhld) under a voluntary clear bag program;
- The tonnage of divertible material in the garbage decreased by 12% from 43% to 31% (5.6 kg to 2.6 kg per hhld) under a mandatory clear bag program;
- During the baseline period, residents set out an average of 10 kg / hhld of garbage. During the voluntary period, residents set out 8.3 kg / hhld. During the mandatory period, residents set out an average of 8.5 kg / hhld;
- Seasonal variance is believed to explain much of the 15% increase in garbage set-out during the baseline period; and
- No significant difference in the actual tonnage of garbage was observed when comparing the voluntary and mandatory clear bag periods.

Recyclables

- The percentage of recyclable material in the garbage decreased by 8% under a voluntary clear bag program;
- The percentage of recyclable material in the garbage decreased by 11% under a mandatory clear bag program; and
- Mandatory clear bag policy did not result in an increase in the diversion of recyclable material when compared to a voluntary program.

Organics

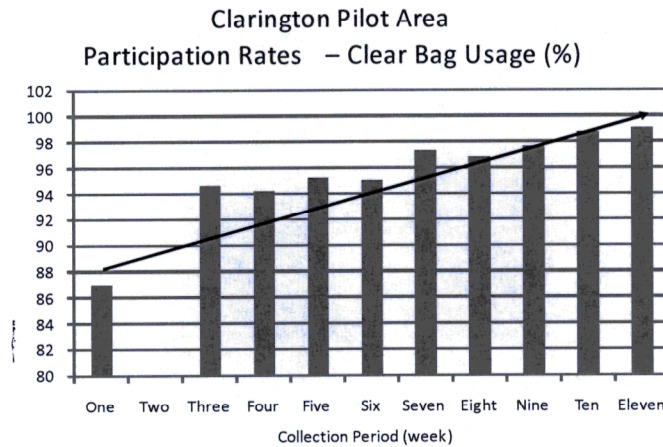
- The percentage of organic material in the garbage increased by 5% under a voluntary clear bag program when compared to baseline data;
- The percentage of organic material in the garbage decreased by 4% under a mandatory clear bag program when compared to baseline data; and
- A mandatory clear bag policy resulted in an increase in diversion of organic material from the garbage when compared to a voluntary program.

Micro level analysis supports macro level findings that a greater amount of recyclable and organic material was diverted during the pilot study;

Clarington Set-out Rates

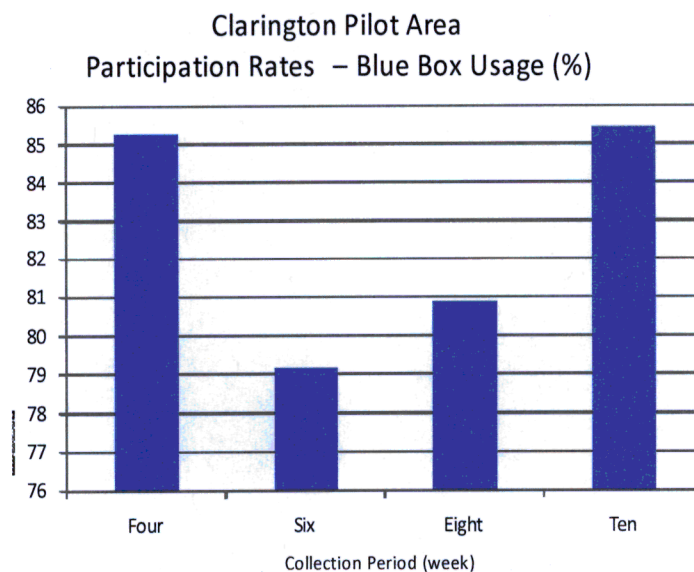
Garbage:

Clear bag usage at the start of the pilot study was 87%. A mandatory requirement to use clear bags increased participation to 99%.



Recyclables (blue box):

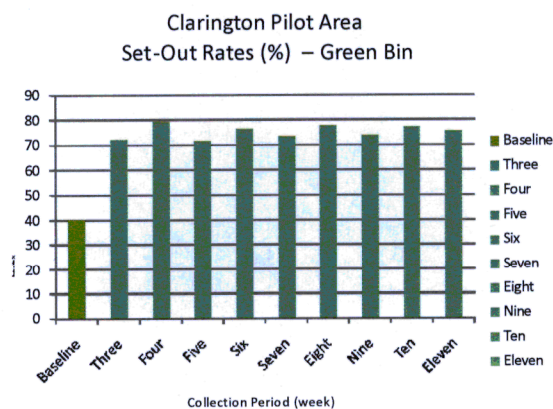
Baseline monitoring of the Clarington Pilot area was not undertaken prior to the launch of the pilot project. However, curbside monitoring was undertaken from the fourth to tenth (final) week of the pilot project, based on the bi-weekly collection schedule of recyclables in this area. During the voluntary period of the pilot, the recycling (Blue Box) set-out rate averaged 82% of households. During the mandatory period (week ten), the set out rate increased to 86%.



Organics (Green Bin):

Baseline monitoring of the Clarington Pilot area undertaken prior to the launch of the pilot project (December 11th, 2008) illustrated that the Green Bin set-out rate was 40%. Monitoring during the pilot project illustrated that during the voluntary phase of the project, Green Bin set out increased to 71%. During the mandatory phase, Green Bin set out increased by an additional 5% to 76% of households.

These results illustrate that residential participation in the Green Bin diversion program increased substantially under a clear bag policy for garbage regardless as to whether the program was mandatory or voluntary.



Summary of Observations – Clarington Set-Out Rates

Garbage:

- Usage of clear bags under a voluntary program was 87%;
- Usage of clear bags under a mandatory program was 99%; and
- Mandatory over voluntary requirements did increase usage by 12%;

Recyclables:

- Due to the fact that baseline monitoring was not performed in the pilot area, it is not possible to make a definitive comparison as to whether clear bags affected the set-out of recyclables in blue boxes;
- Blue Box usage under a voluntary clear bag policy was 82%;
- Blue Box usage under a mandatory clear bag policy was 86%; and
- Mandatory over voluntary requirements did increase usage of Blue Box by 4%.

Organics:

- Green Bin usage increased 31% (to 71%) under a voluntary clear bag usage policy, compared with baseline;
- Green Bin usage increased 36% (to 76% under a mandatory clear bag usage policy compared to baseline;
- Mandatory over voluntary requirement to use clear bags did increase Green Bin usage by 4%.

Public Attitudes – Survey Results

A total of 1,381 surveys were circulated to all households within both pilot areas. Approximately 540 surveys were completed and returned, representing a 39% response rate. The following table provides the survey results for each question:

Question Number	Question	Response	
		(%)	(#’s)
1	Method of receiving information about the Clear Bag Pilot Study.		
	<i>Information Package (delivered to home)</i>	70	377
	<i>Home visit by Durham Region staff</i>	21	113
	<i>Local newspaper</i>	20	108
	<i>Durham Works newsletter</i>	17	90
	<i>Road signs</i>	7	38
	<i>Public Information Session</i>	2	9
	<i>School Presentation</i>	1	4
	<i>Website</i>	1	3
2	Rating of the promotional and educational information.		
	<i>good</i>	84	455
	<i>insufficient</i>	9	47
	<i>too much</i>	1	6
3	Respondents who found Instructions were easy to understand.	92	495
4	Respondents who agreed the clear bags (supplied) were large enough.	84	455
5	Respondents concerned about cost to purchase clear bags.	64	346
6	Respondents who would have used clear bags in house (ie Kitchen Catchers) if available.	72	387
7	Respondents more aware of what items they placed in a clear bag.	71	383
8	Number of garbage bags placed curbside due to use of clear bags		
	<i>no change</i>	61	330
	<i>decrease</i>	34	183
	<i>increase</i>	4	20
9	Respondents who felt that using clear bags presented a privacy concern.	45	245
10	Respondents that indicated that they used a smaller “opaque” bag, within the clear outer bag.	58	312
11	Respondents who agreed that using an opaque bag within a clear outer bag adequately addressed their privacy needs.	62	336
12	Respondents who agreed that the learning period (two month grace period) was adequate to enable them to become familiar with the program.	69	375

13	Respondents aware that the third month of the pilot required mandatory use of a clear bag for garbage, followed up by non-compliance enforcement.	58	316
14	Respondents who noticed an increase in illegal dumping in their neighbourhood during the pilot study.	22	118
15	Respondents who believed that they would recycle more material as a result of their participation in the pilot study.	53	288
16	Respondents who believed that they would use their Green Bin more.	49	265
17	Respondents who will continue using "clear bags" for garbage after the pilot project ends.	38	204
18	Respondents who found the following educational and promotional information was useful.		
	<i>Introductory information package</i>	86	464
	<i>Instructions on Clear Bag Use</i>	69	372
	<i>Frequently Asked Question (FAQ)</i>	54	293
	<i>Door hangers</i>	33	178
20	Respondents who would support a requirement that all household garbage must be set out in clear bags.	53	285
21	Respondents who would support a decrease in the number of garbage bags that can be set out for collection, if the limit helped to increase waste diversion from landfill.	58	315
22	Residents who support a full "bag tag" program for garbage to increase Blue Box and Green Bin usage.	12	63

The majority of respondents (53%) expressed support towards the use of a clear bag policy for garbage bags, including a decrease in the garbage bag limit if it helped to increase waste diversion. Fifty three percent of respondents believed that they would recycle more material as a result of their participation in the clear bag study.

Although privacy concerns were raised, the majority of respondents indicated that the ability to place a smaller opaque bag within a larger clear bag would satisfy their concerns. There is strong support (72%) and demand towards the use of a smaller clear bag for in house usage (ie Kitchen Catcher). Illegal dumping was not considered of high concern. Very clearly, residents did not support the use of a full "bag tag" program to stimulate waste diversion.

Incremental costs to purchase clear bags were also raised as a concern, however, considering that clear plastic bags sold retail are comparable in price to opaque plastic bags, the simple transition from an opaque to clear bag should not result in any cost increases. Likely, the increase in diversion of recyclables and organics should result in a net decrease in the actual number of garbage bags required.

The most popular method of receiving information on the program was the Information Package delivered to each household, residents also thought the quality of this information was good. Additionally, the majority of respondents (69%) agreed that a two month phase in period was sufficient to enable them to get used to the program, prior to the mandatory requirement phase.

Financial Cost / Diversion Estimates - Regional Extrapolation

In 2008, the Region of Durham achieved an overall waste diversion rate of 51% based on an overall generation of 235,589 tonnes of waste and the diversion of 119,125 tonnes. With specific reference solely to single family dwellings (SFD) and the curbside diversion of recyclables (Blue Box) and organics (Green Bin), the diversion rate averaged 49% (weighted average) across Durham Region (Table 3). Of the 157,303 tonnes of curbside residential waste in 2008 a total of 76,567 tonnes was diverted through the above mentioned programs.

Table 3
2008 Single Family Dwelling Curbside Waste

Jurisdiction	Curbside Garbage - Single Family (tonnes)	Curbside Recycling - Single Family (tonnes)	Food Organics (Green Bin) (tonnes)	Total Waste (tonnes)	Waste Diversion (%)
Pickering	12,130	7,851	4,771	24,752	51%
Ajax	12,542	8,267	5,773	26,582	53%
Whitby	12,963	10,509	6,485	29,957	57%
Oshawa	19,194	13,018	5,569	37,781	49%
Clarington	14,001	6,697	1,836	22,534	38%
Scugog	3,968	1,699	523	6,190	36%
Uxbridge	3,626	1,687	611	5,924	39%
Brock	2,312	933	338	3,583	35%
Region Wide	80,736	50,661	25,906	157,303	49% Weighted Average

The above table includes only on SFD garbage, recycling (blue box) and food organics (Green Bin).

The above mentioned SFD waste generated represents approximately 67% of the total amount of waste managed by the Region of Durham. This diversion rate does not factor in material diverted through apartment recycling, metal goods, bulky goods (above totals include bulky of Pickering Ajax, Whitby, Oshawa but not the townships), leaf & yard waste, composting & grass-cycling credits or reuse programs, special events, hazardous or electronic waste nor the corresponding amount of garbage generated (ie apartment) for disposal.

Findings supported by both macro and micro level observations from the Pickering Pilot Area support the following scenarios:

1. Voluntary Clear Bag Program

Incremental increase in diversion of recyclables by 0.3 kg / hhld / set-out

Incremental increase in diversion of organics by 0.2 kg / hhld / set-out;

Incremental decrease in garbage @ 0.5 kg / hhld / set-out

Total Incremental Diversion Estimate 0.5 kg / hhld / set-out

Table 4

Region wide extrapolated diversion & cost estimates – Voluntary Clear Bag Program Scenario.

Material	Incremental Increase (kg / hhld / week) – estimate based on macro data)	Total Amount Per Year (based on 179,530 hhlds) (tonnes)	Gross Costs (based on 2008 actuals)	Incremental Diversion Estimate *
Recyclables	0.3	2801 tonnes	\$154,447	1.8 %
Organics	0.2	1,867 tonnes	\$473,807	1.2 %
Garbage	(0.5)	(4,668 tonnes)	(\$567,208)	
Total / year	26 kg	4,668 tonnes	\$61,045	3.0 %

* Based on total waste equalling 157,303 tonnes / year.

Note: Recycling gross costs based on 2009 Budget (subject to chance due to economic circumstances).

2. Mandatory Clear Bag Program

Incremental increase in diversion of recyclables 0.8 kg / hhld / set-out;

(20% fibre / 80% containers – consistent with micro audit ratio)

Incremental increase in diversion of organics 0.5 kg / hhld / set-out;

Total Incremental Diversion Estimate 1.3 kg / hhld / set-out

Table 5

Region wide extrapolated diversion & cost estimates – Mandatory Clear Bag Program Scenario.

Material	Incremental Increase (kg / hhld / week) – estimate based on macro data.	Total Amount Per Year (based on 179,530 hhlds) (tonnes)	Gross Costs (based on 2008 actuals)	Incremental Diversion Estimate *
Recyclables	0.8	7469 tonnes	\$411,840	4.7 %
Organics	0.5	4668 tonnes	\$1,184,645	3.0 %
Garbage	(1.3)	(11,202 tonnes)	(\$1,361,155)	
Total / year	62.4 kg	11,203 tonnes	\$235,330	7.7 %

* Based on total waste equalling 157,303 tonnes / year.

The implementation of a voluntary clear bag usage policy has the potential to divert approximately 4,668 tonnes of recyclable and organic material out of the garbage. The cost of collection and processing associated with the diversion of this material is approximately \$61,000. These costs do not include any associated costs related to promotional and education requirements or applicable enforcement costs.

Conclusions

Based on a comparison to the 2008 waste tonnage data, a clear bag program for garbage has the potential to increase the waste diversion rate within the Region of Durham by 3% from 51% to 54%. This increased diversion represents about 4,668 tonnes of recyclable and organics at an additional cost of \$61,000 in collection and processing fees.

The use of clear bags did not influence the level of participation in the blue box recycling program but did increase the participation in the green bin organics program by an average 14% when compared to seasonal variations. Clear bags could therefore be a useful tool to further enhance the participation in the Region's source separated organics program.

Of the 1,381 surveys circulated, 540 were returned completed, offering a response rate of 39%.

Details include:

- 53% support the use of a clear bag policy for garbage bags;
- 53% support a decrease in the garbage bag limit if it helped to increase waste diversion;
- 53% would recycle more material as a result of their participation in the clear bag study;
- 62% of residents agreed that using one opaque bag within a clear outer bag adequately addressed privacy concerns;
- 72% support the use of a smaller clear bag for in house usage (ie Kitchen Catcher) as well;
- 78% did not notice an increase in Illegal dumping ;
- 88% did not support the use of a full "bag tag" program to stimulate waste diversion;
- 70% responded that the information package delivered to their home was the best way to receive their information; and
- 69% of residents agreed that a two month phase in period was sufficient to enable them to get used to the program, prior to the mandatory requirement phase.

An extensive public education and promotional strategy was implemented by Regional staff (approximately \$35 per hhld) to ensure that all pilot area households were well informed of the intent of the pilot project, as well as with the specific parameters on to how to participate. The separation of increased diversion or participation resulting from the intensive promotion and education was not possible. Therefore, comparable results of a region-wide clear bags program would only be possible if a significant promotion and education program was undertaken in all municipalities.

The effects of the voluntary or mandatory phases produced mixed results. If the clear bags program is approved for region-wide implementation, it is recommended that a voluntary program be initially started and a mandatory program investigated for potential future use.

Due to the downturn in the economy, overall waste generation rates tend to decrease. Revenues received from recyclable materials are much lower than 2007 and 2008 figures. Because of this economic situation, tonnage and diversion rate results from this pilot could also be affected.

There are a number of additional considerations that must be addressed prior to the launch of a Region wide Clear Bag Program, including:

- Lead time of 1 to 2 years to notify all stakeholders prior to the program launch;
- Retail supply and availability of clear plastic bags of different sizes;
- Residents having adequate time to use stockpile of opaque plastic bags;
- Medical waste and diaper exemptions;
- Waste Call Centre requirements; and
- Provision of additional blue boxes and green bins.

Appendix A

Clear Bag Pilot Collection Route – Clarington

Appendix A: Clear Bag Pilot Collection Route – Clarington



Appendix B

Clear Bag Pilot Collection Route – Pickering

Appendix B: Clear Garbage Bag Pilot Collection Route – Pickering

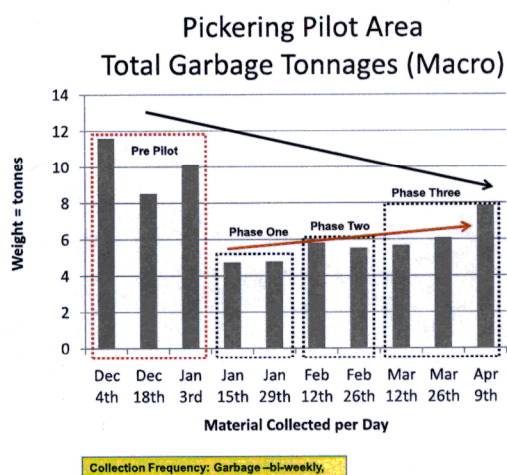


Appendix C

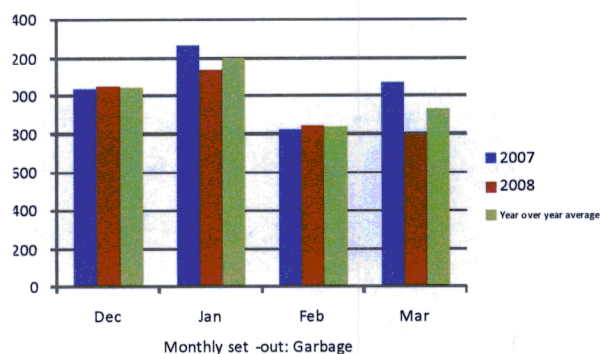
Pickering Garbage Tonnage (Macro Level)

Appendix C: Pickering Garbage Tonnage (Macro Level)

Within the Pickering Pilot Area, results of the macro level auditing undertaken indicated that the actual tonnage of garbage collected during the pilot study did decrease by approximately 34% when compared to the baseline (benchmark) data. At a household level, this represents a decline from 16.6 kg to 10.8 kg per set-out (bi-weekly). A mandatory requirement to use clear plastic garbage bags did not result in a decrease in the amount of garbage placed curbside when compared with the voluntary period.



**Historic Garbage Set -Out Trends - Macro
Pickering (2007 – 2008)**



When compared to monthly tonnages collected from previous years (2007 and 2008), the observations are consistent whereby the amount of garbage placed curbside did decrease during the months of February and March by approximately 20%. One rationale for an increase in the amount of garbage generated during December and early January is due to the seasonal impact of the Holiday Season.

Broken down by timeframe during the pilot study, the tonnage of garbage placed curbside at both the macro (full pilot area) and micro (per household average) is as follows:

Period	Macro Garbage Set-Out	
	Total Tonnage (tonnes)	Avg set-out per hhld (kg)
Baseline	30.3	16.6
Phase 1	9.5	7.9
Phase 2	11.4	9.4
Phase 3	19.6	10.8

Above data was calculated by adding total tonnage from each phase, divided by number of collections and further by number of households within the pilot area.

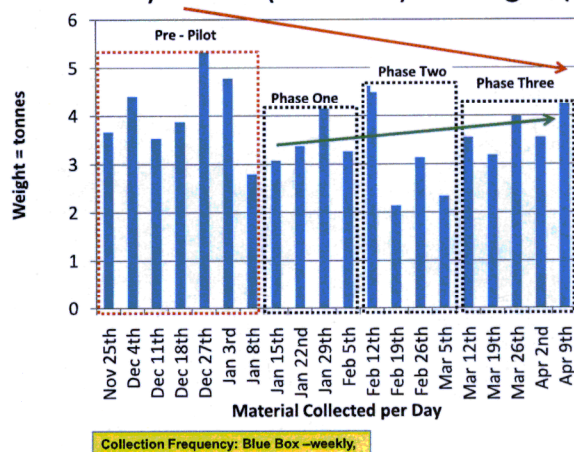
Appendix D

Pickering Recycling Tonnage (Macro Level)

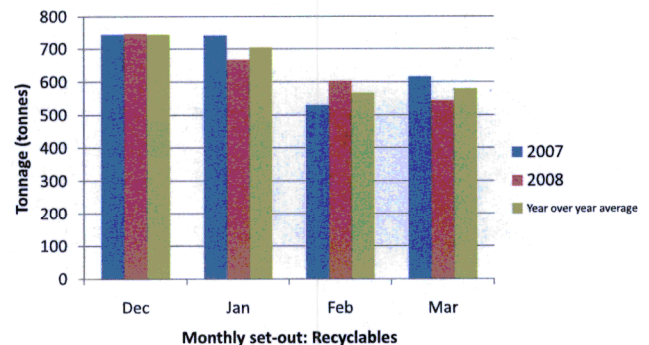
Appendix D: Pickering Recyclables Tonnage (Macro Level)

Within the Pickering Pilot Area, results of the macro level auditing undertaken indicated that the actual tonnage of recyclables collected during the pilot study did decrease by approximately 24% when compared to the baseline (benchmark) data. At a household level, this represents a decline from 6.7 kg to an average of 5.3 kg per set-out (bi-weekly) under a voluntary program. When residents were required to use clear bags for garbage, the amount of recyclables did increase by approximately 0.8 kg per household per set out (or 15%).

Pickering Pilot Area
Total Recyclables (Blue Box) Tonnages (Macro)



Historic Recyclable Set-Out Trends - Macro
Pickering (2007 – 2008)



When compared to monthly tonnages collected from previous years (2007 and 2008), the observations are consistent whereby the amount of recyclables placed curbside did decrease during the months of February and March by approximately 20%. One rationale for an increase in the amount of recyclable material generated during December is due to the seasonal impact of the Holiday Season.

Broken down by timeframe during the pilot study, the tonnage of recyclables placed curbside at both the macro (full pilot area) and micro (per household average) was as follows:

Period	Macro Recycling Set-Out	
	Total Tonnage (tonnes)	Avg set-out per hhld (kg)
Baseline	28.4	6.7
Phase 1	13.8	5.7
Phase 2	12.2	5
Phase 3	18.5	6.1

Above data was calculated by adding total tonnage from each phase, divided by number of collections and further by number of households within the pilot area.

Appendix E

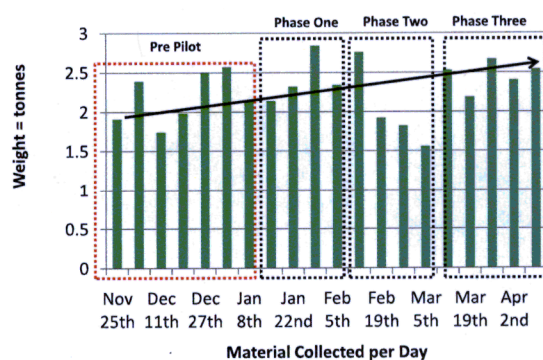
Pickering Organics Tonnage (Macro Level)

June 3, 2009

Appendix E: Pickering Organics Tonnage (Macro Level)

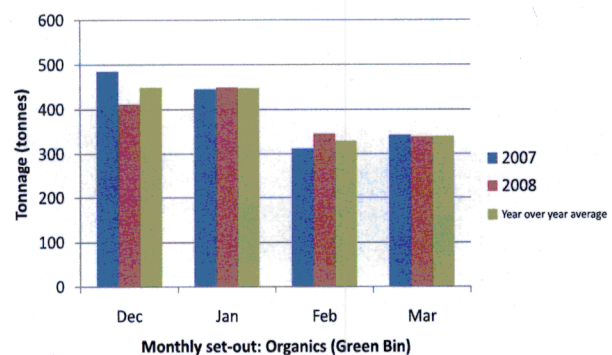
Within the Pickering Pilot Area, results of the macro level auditing undertaken indicated that the actual tonnage of organics collected during the pilot study did increase by approximately 24% when compared to the baseline (benchmark) data. However, during the voluntary clear bag phase, organic set-out was comparable to baseline date. However, during the mandatory clear bag usage phase, the amount of organics increased by approximately 0.45 kg per household above the voluntary phase. The mandatory requirement to use clear bags for garbage definitely resulted in an increase in the amount of organics to the Green Bin by an additional 0.45 kg per household per week (13%).

Pickering Pilot Area
Total compostable (Green Bin) Tonnages (Macro)



Collection Frequency: Green Bin - weekly

Historic Organics (Green Bin) Set-Out Trends - Macro
Pickering (2007 – 2008)



When compared to monthly tonnages collected from previous years (2007 and 2008), the observations do not reflect past years trends. Although in the past, the amount of organics placed curbside decrease during the months of February and March by approximately 20%, the amount increased during those months in 2009 as a result of the use of clear bags for garbage.

Broken down by timeframe during the pilot study, the tonnage of organics placed curbside at both the macro (full pilot area) and micro (per household average) is as follows:

Period	Macro Organics Set-Out	
	Total Tonnage (tonnes)	Avg set-out per hhld (kg)
Baseline	15.2	3.6
Phase 1	9.64	4
Phase 2	8.06	3.3
Phase 3	12.3	4.1

Above data was calculated by adding total tonnage from each phase, divided by number of collections and further by number of households within the pilot area.

Appendix F

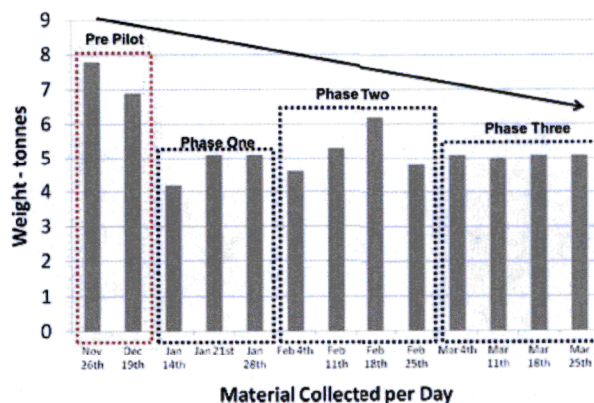
Clarington Garbage Tonnage (Macro Level)

June 3, 2009

Appendix F: Clarington Garbage Tonnage (Macro Level)

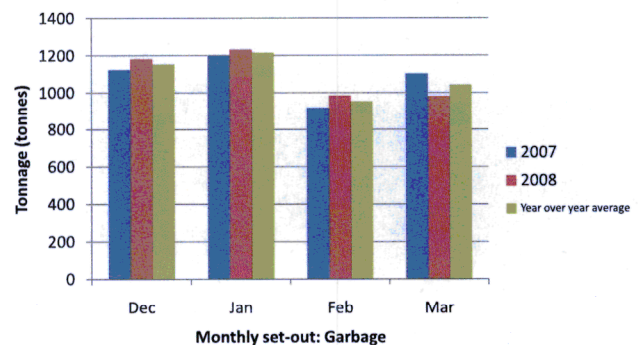
Within the Clarington Pilot Area, results of the macro level auditing undertaken indicated that the actual tonnage of garbage collected during the pilot study did decrease by approximately 32% when compared to the baseline (benchmark) data. At a household level, this represents a decline from 9.5 kg to 6.5 kg when compared to the baseline tonnages. The actual tonnage of garbage placed curbside did not vary significantly between a mandatory and a voluntary requirement to use clear bags for garbage. This observation was also consistent with historical data from 2007 & 2008 that indicated that garbage tonnages to typically decrease by approximately 22 % from December to February and March due to seasonal variations.

**Clarington Pilot Area
Total Garbage Tonnages (Macro)**



Collection Frequency: Garbage – weekly

**Historic Garbage Set-Out Trends – Macro
Clarington (2007 – 2008)**



Broken down by timeframe during the pilot study, the tonnage of garbage placed curbside at both the macro (full pilot area) and micro (per household) average is as follows:

Period	Macro Garbage Set-Out	
	Total Tonnage (tonnes)	Avg set-out per hhd (kg)
Baseline	14.7	9.5
Phase 1	19	6.1
Phase 2	21.4	6.9
Phase 3	15.2	6.6

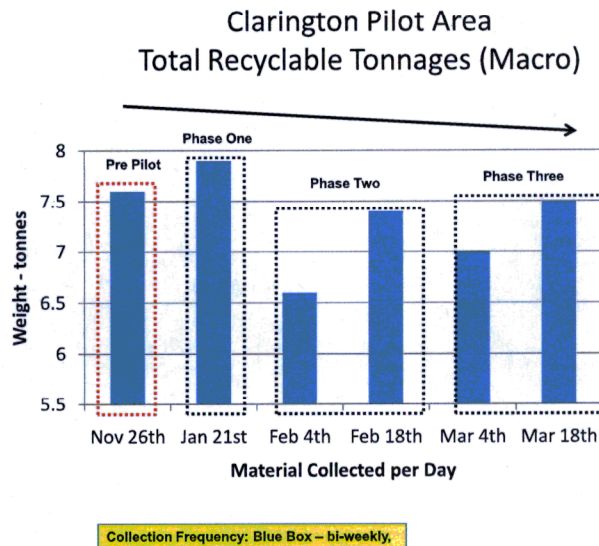
Above data was calculated by adding total tonnage from each phase, divided by number of collections and further by number of households within the pilot area.

Appendix G

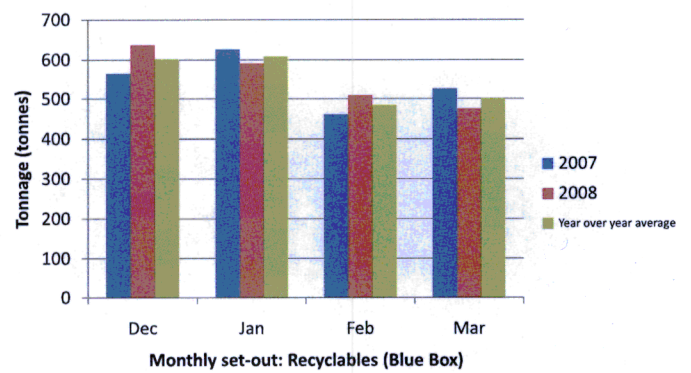
Clarington Recyclable Tonnage (Macro Level)

Appendix G: Pickering Recyclable Tonnage (Macro Level)

Within the Clarington Pilot Area, results of the macro level auditing indicated that the actual tonnage of recyclables collected during the pilot study did not change significantly over the course of the pilot study when compared to the baseline. There was no significant difference in diversion under a mandatory clear bag requirement when compared to a voluntary requirement.



Historic Recyclable Set-Out Trends – Macro Clarington (2007 – 2008)



When compared to monthly tonnages collected from previous years (2007 and 2008), the observations illustrate that historically, the amount of recyclables collected typically decreased by approximately 18%. However, this level of decrease was not observed during the pilot, indicating that residents were placing more recyclables curbside under a clear bag policy for garbage.

Broken down by timeframe during the pilot study, the tonnage of recyclables placed curbside at both a macro (full pilot area) and micro (per household average) is as follows:

Period	Macro Recycling Set-Out	
	Avg set-out per hhd (kg)	Avg set-out per hhd (kg)
Baseline	7.6	9.8
Phase 1	7.9	10.2
Phase 2	14	9
Phase 3	14.5	9.4

Above data was calculated by adding total tonnage from each phase, divided by number of collections and further by number of households within the pilot area.

Appendix H

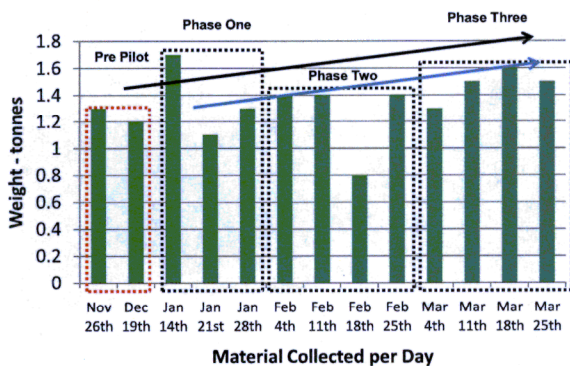
Clarington Organic Tonnage (Macro Level)

June 3, 2009

Appendix H: Clarington Organics Tonnage (Macro Level)

Within the Clarington Pilot Area, results of the macro level auditing undertaken illustrated that the actual tonnage of organics collected did increase by approximately 13% when compared to the baseline (benchmark) data. At a household level, this represents an increase from 1.6 kg to 1.8 kg / week. When compared to monthly tonnages from previous years (2007 and 2008), observations illustrate that historically the amount of organics collected typically decreased by approximately 20% during the months of February and March. During the pilot project the actual amount of organics collected increased by 13%. There was no significant tonnage difference between the amount of organic material collected under a voluntary or mandatory requirement to use clear bags for garbage.

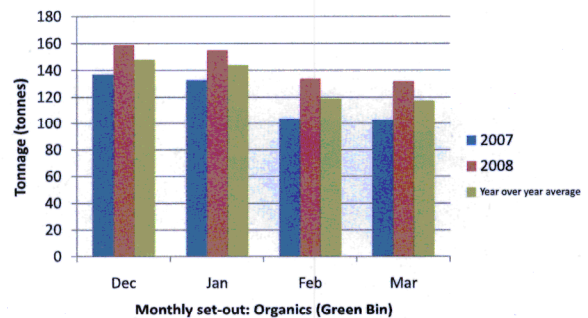
Clarington Pilot Area
Total Green Bin (organics) Tonnages (Macro)



Material Collected per Day

Collection Frequency: Green Bin - weekly

Historic Organics (Green Bin) Set-Out Trends – Macro
Clarington (2007 – 2008)



Period	Macro Organics Set-Out	
	Total Tonnage (tonnes)	Avg set-out per hhld (kg)
Baseline	2.5	1.6
Phase 1	5.5	1.8
Phase 2	4.9	1.6
Phase 3	1.8	2

Above data was calculated by adding total tonnage from each phase, divided by number of collections and further by number of households within the pilot area.

Appendix I

Pickering Pilot Area Macro Tonnage Field Data (tonnes)

June 3, 2009

Appendix I: Pickering Pilot Area Macro Tonnage Field Data (Tonnes)

Pre-Pilot data:

	25-Nov	04-Dec	11-Dec	18-Dec	27-Dec	03-Jan	08-Jan	Total
	Pre-Study 1	Pre-Study 2	Pre-Study 3	Pre-Study 4	Pre-Study 5	Pre-Study 6	Pre-Study 7	Tonnage
Green Bin	1.91	2.39	1.74	1.98	2.50	2.57	2.13	15.22
Blue Box	3.66	4.42	3.53	3.87	5.32	4.78	2.79	28.37
Garbage	N/A	11.61	N/A	8.53	0.00	10.15	0.00	30.29

Pilot data:

	15-Jan	22-Jan	29-Jan	05-Feb	12-Feb	19-Feb	26-Feb
Week	1	2	3	4	5	6	7
Green Bin	2.14	2.32	2.84	2.34	2.76	1.92	1.82
Blue Box	3.07	3.37	4.14	3.26	4.63	2.14	3.13
Garbage	4.73	N/A	4.80	N/A	5.82	N/A	5.54

	05-Mar	12-Mar	19-Mar	26-Mar	02-Apr	09-Apr	Total Tonnage
Week	8	9	10	11	12	13	
Green Bin	1.56	2.53	2.19	2.67	2.40	2.54	30.03
Blue Box	2.34	3.55	3.19	3.98	3.55	4.25	44.6
Garbage	N/A	5.68	N/A	6.08	N/A	7.85	40.5

Appendix J

Clarington Pilot Area Macro Tonnage Field Data (tonnes)

June 3, 2009

Appendix J: Clarington Pilot Area - Macro Tonnage Field Data (tonnes)

Courtice Clear Garbage Bag Pilot Tonnage Template

	26-Nov Pre-Study 1	19-Dec Pre-Study 2	14-Jan Collection 1	21-Jan Collection 2	28-Jan Collection 3	4-Feb Collection 4	11-Feb Collection 5
Green Bin	1.3	1.2	1.7	1.1	1.3	1.4	1.4
Blue Box	7.6	N/A	N/A	7.9	N/A	6.6	N/A
Garbage	7.8	6.9	4.2	5.1	5.1	4.6	5.3
Total Tonnes	16.6	n/a	n/a	14.2	n/a	12.6	n/a
Total GB/BB	8.8	-	-	9.0	-	7.9	-
% Diversion	53.0	-	-	63.8	-	63.2	-

	18-Feb Collection 6	25-Feb Collection 7	4-Mar Collection 8	11-Mar Collection 9	18-Mar Collection 10	25-Mar Collection 11	Total Tonnage
Green Bin	0.8	1.4	1.3	1.5	1.6	1.5	17.4
Blue Box	7.4	N/A	7.0	N/A	7.5	N/A	43.9
Garbage	6.2	4.8	5.1	5.0	5.1	5.1	70.2
Total Tonnes	14.4	n/a	13.4	n/a	14.2	n/a	n/a
Total GB/BB	8.2	-	8.3	-	9.1	-	n/a
% Diversion	56.9	-	62.2	-	64.0	-	n/a

Notes:

774 stops in pilot area
 Macro-audit on November-26 and Dec-19
 Garbage and Green Bin co-collected on a weekly basis (1 Load).
 Blue Box collected on a bi-weekly basis (1st collection in study will be Wednesday, January 21, 2008) (3 to 4 Loads).

Pre

Diversion	10.0
Landfill	14.7
Total	24.7
Diversion	40%

Study

Diversion	61.4
Landfill	70.2
Total	131.6
Diversion	47%

Appendix J: Clarington Pilot Area - Macro Tonnage Field Data (tonnes)

Courtice Clear Garbage Bag Pilot Tonnage Template

Blue Box Collection Tonnages

21-Jan	Load 1	2.0
	Load 2	1.7
	Load 3	2.4
	Load 4	1.9
	Total	7.9

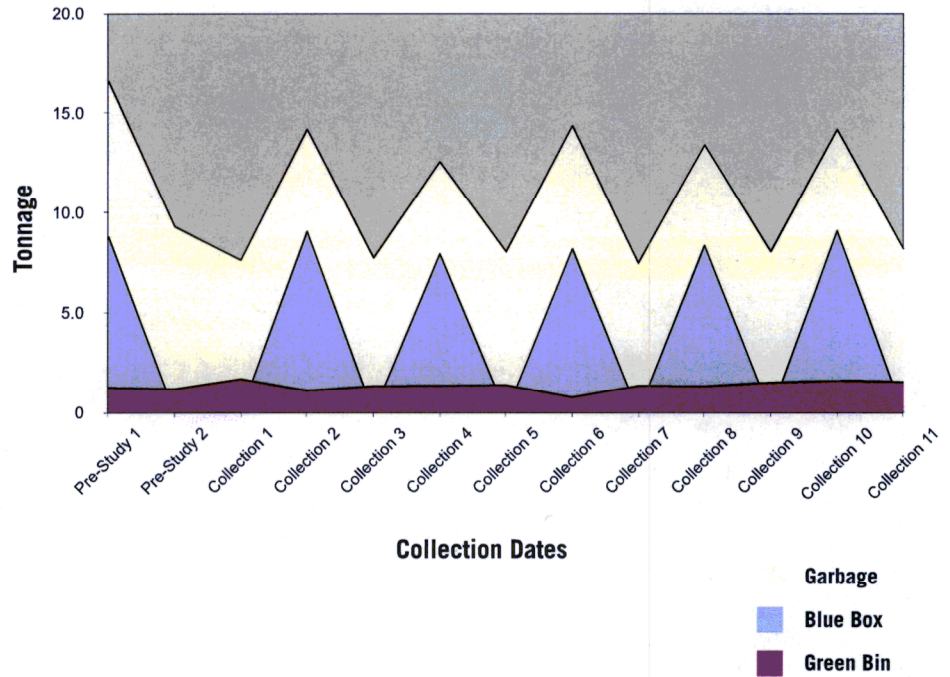
4-Feb	Load 1	1.9
	Load 2	1.5
	Load 3	1.6
	Load 4	1.6
	Total	6.6

18-Feb	Load 1	2.0
	Load 2	1.5
	Load 3	1.9
	Load 4	2.0
	Total	7.4

4-Mar	Load 1	1.8
	Load 2	1.7
	Load 3	1.9
	Load 4	1.6
	Total	7.0

18-Mar	Load 1	2.2
	Load 2	1.7
	Load 3	1.9
	Load 4	1.8
	Total	7.5

Pilot Study Waste Tonnage Trends



Appendix K

Pre-Study Communications Campaign Support Material

Pre-Study Communications: November 2008 to January 2009

1. Print communications:

Article that appeared in the "Durham Works" Nov. 2008 newsletter distributed to all households in Durham Region.

Clear garbage bag pilot program to launch in 2009 for test group

Durham Region strives to lead the way in environmental initiatives aimed at reducing residual waste (the garbage left after recycling and composting). We are always looking for new and innovative ways to improve waste diversion. To further this goal, the Region is investigating the use of clear garbage bags.

Starting in January 2009, a small group of Clarington and Pickering homeowners will be part of a Regional pilot program to test the use of clear bags for garbage collection. The Region wants to encourage residents to recycle more



A select group of homeowners in Clarington and Pickering will take part in a pilot program to test the use of transparent bags for garbage collection.

further aid the Region in striving for the diversion target of 70 per cent by the end of 2010.

The three-month pilot program will affect roughly 1,500 homes along two waste collection routes (one in each municipality), and will provide the Region and local area municipalities with the relevant information needed to decide if implementation of a Regional clear bag program is a good option for Durham. Clear bag programs have already been established quite successfully in a number of municipalities in Ontario, Nova Scotia, Prince Edward Island and the United States.

2. Websites:

- Dedicated Clear Bag Pilot Study web page in Durham Region's Waste Management website www.durhamregionwaste.ca
- Links from the City of Pickering and Municipality of Clarington web sites to Clear Bags Pilot Study web page.

Clear Bags Pilot Study

As an environmental leader, Durham Region is always looking for new and innovative ways to improve waste diversion. Starting in January 2009, a group of Clarington and Pickering homeowners will be the first to switch to clear garbage bags as the Region launches a pilot program to test the use of transparent bags for garbage collection. The Region wants to encourage residents to recycle more materials in their blue boxes and to divert kitchen food waste to their green bins, minimizing any leftover household garbage that would be sent to landfill. The clear bag initiative has been identified as one option to further aid the Region in achieving the Council approved diversion target of 70 per cent by the end of 2010.

The three-month pilot program will affect roughly 1,500 homes along two waste collection routes, one in each municipality and will provide the Region and area municipalities with the relevant information needed to decide if implementation of a Region wide clear bag-program is viable. Clear bag programs have already been established in a number of municipalities in Ontario, Nova Scotia, Prince Edward Island and in the United States.

The Region would like to thank Clorox (GLAD) for donating the clear bags for this pilot study.

Pre-Study Communications: November 2008 to January 2009

3. Public Service Announcement: November 24, 2008

Three-month clear bags pilot program to begin in January within a collection area of Clarington and Pickering

WHITBY, ON – Residents are advised that a three-month clear plastic bags pilot program will begin on Jan. 12, 2009 within two distinct collection routes—one in the Municipality of Clarington and one in the City of Pickering.

WHEN:

The Clear Bags Pilot Study will run from Jan. 12 to April 10, 2009.

WHERE:

Two distinct collection routes, one in the Municipality of Clarington and one in the City of Pickering—about 1,500 homes—will be included. Entrances to these areas will be marked with specific road signs.

WHY:

The objective of the three-month curbside clear bags pilot project is to assess how clear bags affect diversion rates (and therefore, participation in the recycling/composting programs) within two municipalities offering different service levels (biweekly collection versus weekly pick up).

NOTE:

During the week of Dec. 15, residents in the collection areas will receive a three-month supply of clear bags and an educational package about the pilot program. These individuals are also invited to attend one of the following public information sessions to learn more about the study:

Municipality of Clarington

Dec. 2 and Dec. 4 from 6:30 to 9 p.m.

Lydia Trull Public School

80 Avondale Dr. Courtice

City of Pickering

Dec. 9 and Dec. 10 from 6:30 to 9 p.m.

St. Mary Catholic Secondary School

1918 Whites Rd., Pickering

To ensure that the Region does not infringe on anyone's privacy, each clear bag can contain one opaque bag (up to a size of 20" x 22"), which may be used for bathroom waste or health-related items. There will be no changes to the collection schedule, garbage bag limit, or collection frequency as a result of this pilot program. High-rise apartments are not included in this study.

The Clear Bags Pilot Study is part of a strategy to help residents work towards a 70 per cent diversion rate by 2010. For more information, please visit www.durhamregionwaste.ca, or contact the Waste Management Call Centre at 905-579-5264 (toll-free at 1-800-667-5671).

Pre-Study Communications: November 2008 to January 2009

4. Introductory information package:

Hand-delivered to all households in the pilot study areas

- Notice of Clear Bags Pilot study
- Map of pilot study area
- Frequently asked Questions
- Phases of enforcement throughout the study

November 24, 2008

Clear Bag s Pilot Study – Jan. 12 to Apr. 10, 2009



Dear Clarington residents,

In June 2008, Regional Council passed the following resolution:

"THAT the Region implement a three -month clear bag pilot for garbage collection for approximately 1,500 homes (two collection routes), with one route in the Municipality of Clarington and the other in the City of Pickering commencing in January 2009."

The purpose of this pilot study is to determine if using clear or transparent bags for garbage can increase recycling (Blue Box) and composting (Green Bin) participation ; resulting in diversion of more waste from landfill.

Your residence is part of the route selected for the Clear Bags Pilot Study scheduled to take place from Jan. 12 to Apr. 10, 2009. The study area routes were chosen with the co-operation and input of your local municipality . Your co-operation , understanding and feedback are essential in determining the success of this pilot study. Be assured that any implementation on a Durham-wide scale will be a future decision of the Regional Works Committee and Regional Council.

You will receive notices at your home followed by the delivery of information package s by Regional staff the week of Dec. 15. The information package include s participation instructions and a sufficient supply of clear garbage bags for use over the study period . Regional staff will also monitor the pilot throughout the winter .

To assist you in understanding the purpose and process of the Clear Bags Pilot Study, public information sessions will be held from 6 :30 to 9 p.m. at **Lydia Trull P ublic School, 80 Avondale Drive, Courtice** on **Dec. 2 and Dec. 4** . An additional session may be scheduled for January 2009 if necessary.

If you have any questions about the Clear Bag s Pilot Study, please contact:

- The Region's call centre staff at 1 -800-667-5671 from Monday to Friday between 8 a.m. and 5 p.m.
- Your local municipal call centre at 905-623-2291 between 8 a.m. and 3 p.m.

Information will also be available on both the Regional website s and the municipal websites at:

- Region: www.durhamregionwaste.ca or www.region.durham.on.ca
- Clarington: www.clarington.net

Residents in Durham Region have successfully increased their diversion rate from 28 to 53 per cent in the last eight years. We are continually working to develop programs that will help us to reach, or exceed the targeted diversion rate of 70 per cent by 2010 .

Cliff Curtis
Works Commissioner
The Regional Municipality of Durham

Charlie Trim
Works Committee Chair
Ward 3 and 4 Regional Councillor
Municipality of Clarington

Jim Abernethy
Mayor
Municipality of Clarington

Mary Novak
Ward 1 and 2 Regional Councillor
Municipality of Clarington

Adrian Foster
Ward 1 Councillor
Municipality of Clarington



FREQUENTLY ASKED QUESTIONS

Q: Why clear bags for garbage?

A: We are looking at clear bags for garbage to increase the amount of recyclables and food waste, and to decrease waste going to landfill. We know that there are still people who are not participating in recycling and composting programs. The use of clear bags makes it simple to inspect the bags for materials that should not be going to landfill.

Q: How long will the clear bag pilot program last?

A: The clear bag pilot program will run from Jan. 12 to April 10, 2009.

Q: Will my collection schedule change with the clear bag pilot program?

A: Your waste, recycling and green bin will be collected on your regular collection day. Check your calendar. Remember, all waste must be set out at the curb before 7 a.m. on your collection day.

Q: Will the clear bag pilot program affect the three-bag limit for weekly garbage collection?

A: No. There will be no change to the garbage bag limit or collection frequency in your area.

Q: Where can I purchase clear bags?

A: The Region will be providing a free, three-month stock of clear bags to all households in the pilot program area.

Q: I am concerned that everyone will be able to see what I throw out if I use the clear garbage bags? How can I ensure that my waste remains private?

A: It is not the intent of the pilot program to infringe on anyone's privacy. Each clear bag can contain one opaque bag, up to a size of 20" x 22" that may be used for bathroom waste and health-related items. Alternatively, you could put your clear bag at the curb in your regular garbage can.

Q: What about kitty litter, dog feces and diapers?

A: These items can be placed right into your clear bags, or you can choose to place it in your one permitted opaque bag. Residents who use diaper disposal systems, such as a Diaper Genie, should place the plastic film liner containing the diapers directly into the clear bag.

Q: I currently receive special consideration on the bag limit due to a medical condition. How will this program affect me?

A: Exceptions are often made for residents with medical waste provided they demonstrate that they are participating in the Region's recycling and composting programs. Households that have submitted an acceptable application, and are approved by the Region, will be permitted to use regular black bags for medical wastes and/or incontinence products only.

Q: What if I don't want to participate in the clear bag pilot program?

A: Participation in the pilot program is mandatory. There will be a short grace period at the start of the pilot, after which targeted education and enforcement will take place.

For more information, call the Region of Durham Works Department at 905-579-5264 or 1-800-667-5671



How will the program be enforced?

There will be a monthly phased-in approach to the program as you learn how to set out your wastes for collection.

- **Phase 1:**
This will be a "learning" phase to allow you to get familiar with the Clear Bag Program. Region staff will be monitoring the setouts for participation and diversion rates. They will also be speaking with residents that need any additional information to assist them with the pilot study set out procedure. All waste will be collected.
- **Phase 2:**
This will be a continuation of the learning process for you. Your wastes will be picked up; however, Regional staff will be leaving non-compliance notices at your home highlighting the type of materials that should have been recycled or composted. All bags will be collected.
- **Phase 3:**
The final phase will enforce the collection of only clear garbage bags that comply with the program; however, bags with minimal amounts of recyclable or compostable materials will be collected. Bags with significant amounts of these materials will be left at the curb. You should separate out the recyclables and compostables and include these in your next weekly Blue Box and Green Bin collection.



Pre-Study Communications: November 2008 to January 2009

5. Public information sessions: Dec 2008




CLEAR BAGS PILOT STUDY

Public Information Session



Region of Durham Works Department
605 Rossland Road East, Whitby ON
www.region.durham.on.ca
www.durhamregionwaste.ca
905-668-7711




CLEAR BAGS PILOT STUDY PUBLIC INFORMATION SESSIONS

Dec. 9 and 10 from 6:30 to 9 p.m.


A pilot or test study on the use of clear bags for garbage is being conducted from **Jan. 12 to Apr. 10, 2009** in your neighbourhood. The purpose of the study is to determine if the use of clear garbage bags for garbage will increase the amount of recycling and food waste diverted from landfill.

Public Information Sessions are being held at
St. Mary Catholic Secondary School
1918 Whites Rd., Pickering

Come out and find out more about the pilot study, and get answers to any questions you may have on any of the Region of Durham's residential waste programs.



To see if your home is part of the study area, or for more information, visit www.durhamregion.on.ca.




CLEAR BAGS PILOT STUDY PUBLIC INFORMATION SESSIONS

Dec. 2 and 4, 2008 - 6:30 to 9 p.m.

A pilot study on the use of clear bags for garbage is being conducted from **January 12 to April 10, 2009** in your neighbourhood. The purpose of the study is to see if the use of clear garbage bags will increase the amount of recycling and food waste diverted from landfill.

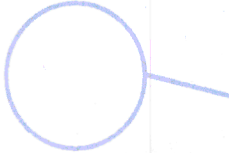
Public Information Sessions are being held at
Lydia Trull Public School
80 Avondale Dr., Courtice

Come out and find out more about the pilot study and get answers to any questions you may have on any of the Region of Durham's residential waste programs.



To see if your home is part of the study area, or for more information, visit www.durhamregion.on.ca.



6. Doorhanger delivered in Dec 2008

CLEAR BAGS for Garbage

The countdown begins

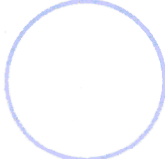
Effective
Jan. 12, 2009

Pilot area residents will be required to use clear bags (not coloured) for regular garbage.

**Durham Region Works
Department**
905-579-5264 or 1-800-667-5671

What goes where?



GREEN BIN		
Animal bedding (bird & hamster)	Coffee grounds	Flowers
Baking ingredients	Cookies	Fruits, fruit pits
Bread	Dairy products	Hair
Cakes	Dryer lint	Household plants
Coffee filters	Egg cartons (paper)	Meat, fish & poultry
	Egg shells	Muffin paper
	Fast food drink trays	Paper napkins

BLUE BOX		
Aerosol cans	Cereal boxes	Glass bottles & jars
All plastic bottles with a twist-off top	Detegent bottles	Juice cartons
Aluminum cans	Drink boxes	Metal lids
Bristol board	Envelopes	Milk cartons
Brown paper bags	Full trays	Paint cans
Calendars	Gift paper	Paperback books


GARBAGE		
Baby wipes & diapers	Chip bags	Cutlery
Broken dishes	Cigarette butts	Dishes & pots/pans
Bubble packaging	Clam shell containers	Dryer sheets
Candles	Clothing	Egg cartons
Carbon paper	Coffee cups	(clear & styrofoam)
Ceramics	Coffee cup lids	Foam trays
Cereal box liners	Cookie bags	Kitty litter

Pre-Study Communications: November 2008 to January 2009

7. Clear Bags Pilot Study Kit delivered December 2008

Hand delivered by Durham Region Staff.

- Instructions
- Frequently Asked Questions
- Fridge Magnet
- Clear Garbage Bags



IMPORTANT NOTICE!

CLEAR BAGS PILOT STUDY

To participate in the pilot, all you have to do is use the clear bags provided for your garbage.
No more green, black or coloured bags!

You have just received a kit containing clear garbage bags; a magnet of what goes in the blue box, green bin and garbage; and a list of frequently asked questions.


If you have privacy concerns about using the clear bags for garbage, you can use grocery bags or other opaque liner bags inside your clear garbage bag. You may include one opaque bag up to a size of 20" x 22" that may be used for bathroom waste and health-related items in each of your clear garbage bags. Alternatively, you could put your clear bags at the curb in your regular garbage can.

This pilot study will not result in a change to your collection schedule. There is still a bag limit of garbage per household, per collection. The Clear Bags Pilot Study begins on Jan. 12, 2009 and will last until Apr. 10, 2009.

Region staff will monitor the pilot program throughout the winter. In addition, you will be asked to complete a questionnaire regarding your experience with the clear bags at the end of the pilot study. A postage-paid envelope will be provided to return your completed survey to the Region.

Thank you for helping the Region of Durham explore new opportunities to improve our services. Please feel free to contact our Waste Management Call Centre at 905-579-5264 or 1-800-667-5671 if you have any questions about the pilot study as well as any other waste management issues.

Sincerely,
Region of Durham Waste Management Division



FREQUENTLY ASKED QUESTIONS

Q: Why clear bags for garbage?
A: We are looking at clear bags for garbage to increase the amount of recyclables and food waste, and to decrease waste going to landfill. We know that there are still people who are not participating in recycling and composting programs. The use of clear bags makes it simple to inspect the bags for materials that should not be going to landfill.

Q: How long will the clear bag pilot program last?
A: The clear bag pilot program will run from Jan. 12 to April 10, 2009.

Q: Will my collection schedule change with the clear bag pilot program?
A: Your waste, recycling and green bin will be collected on your regular collection day. Check your calendar. Remember, all waste must be set out at the curb before 7 a.m. on your collection day.

Q: Will the clear bag pilot program affect the three-bag limit for weekly garbage collection?
A: No. There will be no change to the garbage bag limit or collection frequency in your area.

Q: Where can I purchase clear bags?
A: The Region will be providing a free, three-month stock of clear bags to all households in the pilot program area.

Q: I am concerned that everyone will be able to see what I throw out if I use the clear garbage bags? How can I ensure that my waste remains private?
A: It is not the intent of the pilot program to infringe on anyone's privacy. Each clear bag can contain one opaque bag, up to a size of 20" x 22" that may be used for bathroom waste and health-related items. Alternatively, you could put your clear bag at the curb in your regular garbage can.

Q: What about kitty litter, dog feces and diapers?
A: These items can be placed right into your clear bags, or you can choose to place it in your one permitted opaque bag. Residents who use diaper disposal systems, such as a Diaper Genie, should place the plastic film liner containing the diapers directly into the clear bag.

Q: I currently receive special consideration on the bag limit due to a medical condition. How will this program affect me?
A: Exceptions are often made for residents with medical waste provided they demonstrate that they are participating in the Region's recycling and composting programs. Households that have submitted an acceptable application, and are approved by the Region, will be permitted to use regular black bags for medical wastes and/or incontinence products only.

Q: What if I don't want to participate in the clear bag pilot program?
A: Participation in the pilot program is mandatory. There will be a short grace period at the start of the pilot, after which targeted education and enforcement will take place.

For more information, call the Region of Durham Works Department

GREEN	BLUE	BLACK
What Goes Where... Common Everyday Items		
GREEN BIN Animal bedding (bird & hamster) Baking ingredients Bread Cakes Cereal Coffee filters Coffee grounds Coffee makers Dairy products Dryer lint	Egg cartons (paper) Egg shells Fast food drink trays Flowers Fruits, fruit pits Hair Household plants Meat, fish & poultry Muffin paper Paper napkins Paper towels Pasta Pet food	Pet fur Plants Pumpkins Sawdust Shellfish Sugar bags Tea bags Tissues Vegetables
BLUE BOX Aerosol cans All plastic bottles with a twist off top Aluminum cans Bristol board Brown paper bags Calendars Cereal boxes Detergent bottles Drink boxes Envelopes	Foil trays Frozen food boxes Gift paper Glass bottles & jars Juice cartons Metal lids Milk cartons Paint cans (metal - empty/lids removed) Paperback books Paper take out food containers Paper towel rolls	Phone books Plastic margarine & ice cream containers Shampoo bottles Shoe boxes Shredded paper Telephone books Toilet paper rolls
GARBAGE Baby wipes & diapers Broken dishes Bubble packaging Candles Carbon paper Ceramics Cereal box liners Chip bags Cigarette butts Clean shell containers Clothing Coffee cups	Coffee cup lids Cookie bags Cutlery Dishes & pots/pans Dryer sheets Egg cartons (clear & styrofoam) Fire place/BDQ ashes Foam trays Kitty litter Light bulbs Meat trays Metal & plastic hangers Milk bags	Plastic plant pots Plastic plant trays Plastic take out food containers Shrink wrap Styrofoam Toothpaste tube Wallpaper



Region of Durham Works Department
www.durhamregionwaste.ca



EASY-TIE[®] RECYCLING CLEAR BAGS

10 BAGS

66 cm x 82.5 cm 26 in. x 32.5 in.

67 L bag capacity



REGULAR

1-800-561-5039

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THE INFORMATION ON THIS COMPANY'S WEBSITE IS FOR INFORMATIONAL PURPOSES ONLY. CONTACT US AT 1-800-561-5039 FOR MORE INFORMATION.



Depend On It[™]

WARNING: Plastic bags can be dangerous. To avoid danger of suffocation, keep all plastic bags away from babies and children. DO NOT PUT YOUR FINGER THROUGH.

Pre-Study Communications: November 2008 to January 2009

8. Doorhanger delivered in January 2009



9. Study area notice sign installed January 2009



10. Public Service Announcement: January 5, 2009

Residents reminded the Clear Bags Pilot Study to begin shortly

WHITBY, ON – The Regional Municipality of Durham would like to remind residents in the Municipality of Clarington and the City of Pickering that the three-month Clear Bags Pilot Study will begin, within two distinct collection routes, the week of Jan. 12, 2009.

WHEN:

The three-month Clear Bags Pilot Study will run from Jan. 12 to April 10, 2009.

WHERE:

Two distinct collection routes, one in the Municipality of Clarington and one in the City of Pickering—about 1,500 homes—have been established. Entrances to these areas will be marked with specific road signs.

WHY:

The objective of the three-month Clear Bags Pilot Study is to assess how clear bags affect diversion rates (and therefore, participation in the recycling/composting programs) within two municipalities offering different service levels (biweekly collection versus weekly pick up).

NOTE:

Each clear bag can contain one opaque bag (up to a size of 20" x 22"), which may be used for bathroom waste or health-related items. This opaque bag may also be used for pet waste or kitty litter—items that should never be flushed into the sanitary sewer system.

The Clear Bags Pilot Study is part of a strategy to help residents work towards a 70 per cent diversion rate by 2010. To help reach this goal, residents are reminded to review the list of items that are acceptable in the Region's Blue Box and Green Bin programs by visiting www.durhamregionwaste.ca, reviewing the waste collection calendar, or by contacting the Waste Management Call Centre at 905-579-5264 (toll-free at 1-800-667-5671).

There will be no changes to the collection schedule, garbage bag limit, or collection frequency as a result of this pilot program. High-rise apartments are not included in this study.

Appendix L

Study Communication Campaign Support Material

Study Communications: Mid-January to March 2009

1. Doorhangers distributed by Regional Staff monitoring study areas during Phase 1 & 2.

 **Clear Bags Pilot Study**



THANKS FOR SORTING!

Your waste sorting efforts have not


Keep up the good work!
This card could win you a prize!

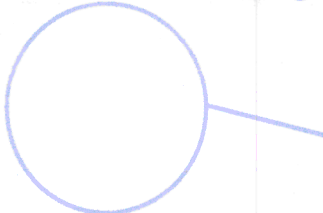
Simply fill out the bottom of the card,

Mail to: Durham Region Works Department
Waste Management Division



Name: _____
Address: _____


 **Clear Bags Pilot Study**



Collection issue

Dear resident:

As part of our curbside education program we have been collecting your garbage. However, this neighbourhood has been selected as part of a pilot area to test the use of



Your garbage will not be collected in future if

Durham Region Works Department
905-579-5264 or 1-800-667-5671

2. Collection Issue Stickers
Placed on garbage bags out of compliance



COLLECTION ISSUE

- Garbage must be set out in **CLEAR BAGS ONLY**. Please place garbage in a clear bag and set out on your next collection day.
- **ONLY ONE OPAQUE BAG** (such as a shopping bag, size 20"x 22") allowed in each clear garbage bag.

Region of Durham
Works Department
1-800-667-5671
905-579-5264

Study Communications: Mid-January to March 2009

3. Public Service Announcement: March 3, 2009

Region of Durham reminds Courtice and Pickering residents within the Clear Bags Pilot Study areas that enforcement will commence as part of the final phase of the study

WHITBY, ON – The Regional Municipality of Durham would like to remind Courtice and Pickering residents in the designated Clear Bags Pilot Study areas that enforcement of compliance in the use of clear bags only for garbage will use begin this month.

WHEN: Enforcement of compliance starts, and will continue for the following scheduled garbage collection days:

Courtice
March 4, 11, 18 and 25
Pickering
March 12, 26 and April 9

WHERE: Only within the designated Clear Bags Pilot Study areas of Courtice and Pickering.

WHY: The final phase of the pilot study will enforce the use of compliant clear garbage bags only. If garbage bags are coloured (black, green) or contain significant amounts of Blue Box or Green Bin materials they will not be collected.

For privacy issues, one opaque/coloured plastic grocery bag is acceptable in each of the clear garbage bags. Clear garbage bags may also be set out in garbage containers. Any additional clear garbage bags over the acceptable limit may be set out, but must be tagged as usual.

Please have all waste material set out by 7 a.m. to ensure collection.

Study Communications: Mid-January to March 2009

4. Standard operating procedures issued to waste collectors



Clear Garbage Bag Pilot Standard Operating Procedures (SOP)

ENFORCEMENT - March 4, 11, 18, 25

Do **not** collect Garbage if:

- Garbage bags set-out are coloured (such as the following - black/orange/green/white or any other semi-transparent bag other than a clear bag).
- Contain significant amounts of recyclables and/or organics.
- Visual inspection observes more than one opaque bag 20" x 22" inside each clear bag.
- Over the bag limit and extra bags don't have "bag tags".
- If over the weight restriction of 44 lbs. (20 kg).

NON-COMPLIANCE STICKER

Please place a yellow non-compliance sticker on **each** unacceptable bags and/or containers.

To note - as an indicator of compliance, if Blue Box and Green bin is set-out, bags should be relatively light and in compliance. Collectors should use best judgment for collection during the enforcement phase.

Study Communications: Mid-January to March 2009

5. Survey - Mailed directly to residents' homes - mid March 2009

CLEAR BAGS PILOT STUDY RESIDENT SURVEY

Complete this survey and you could win a one-year supply of compostable liner bags for your kitchen Green Bin.

Please take the time to complete this important survey on the Clear Bags Pilot Study. Your feedback on your experiences using clear bags for your garbage are greatly appreciated. You have two options to complete: (1) mail this survey to the Region of Durham in the pre-paid envelope or (2) visit www.durham.ca/clearbagstudy to complete the survey online.

Please check the box that most applies to you.	Yes	No
1. How did you find out about the Clear Bags Pilot Study in your area? <input type="checkbox"/> Local newspaper article <input type="checkbox"/> Website <input type="checkbox"/> Durham Works newsletter <input type="checkbox"/> Public information session <input type="checkbox"/> Information package delivery to home <input type="checkbox"/> School presentation <input type="checkbox"/> Home visit by Durham Region staff <input type="checkbox"/> Road signs		
2. Do you feel that the promotional and educational information on the Clear Bags Pilot Study was: <input type="checkbox"/> insufficient <input type="checkbox"/> good <input type="checkbox"/> too much?		
3. Were the instructions you received on the use of clear bags for garbage easily understood?		
4. Were the clear garbage bags provided by the Region large enough for your needs?		
5. If you had to purchase clear bags on a regular basis, would you be concerned about the cost?		
6. Would you have used clear kitchen-catcher bags for garbage inside the home, if available?		
7. Were you more aware of items placed into the garbage when using a clear bag?		
8. Did the number of garbage bags you set out: <input type="checkbox"/> increase <input type="checkbox"/> decrease <input type="checkbox"/> no change		
9. Was privacy an issue when using clear bags for your garbage?		
10. Did you use an opaque bag inside the clear garbage bag during the study?		
11. Was one opaque bag per clear bag adequate in addressing your privacy concerns?		
<i>The Region allowed a two-month grace or "learning" period prior to enforcement of the clear bag setout procedure. After this time, the one-month "enforcement" period was initiated for the remainder of the study. Garbage set out in anything but clear bags was not collected.</i>		
12. Was the "learning" period adequate for you to become familiar with the Clear Bags Pilot Study?		
13. Were you aware that the final month of the study would be an "enforcement" month?		
14. Did you notice an increase in illegal dumping in your neighbourhood during the study?		

Complete this survey online at www.durham.ca/clearbagstudy

CLEAR BAGS PILOT STUDY RESIDENT SURVEY cont.

Please check the box that most applies to you.	Yes	No
15. Do you think you will recycle more as a result of your participation in this study?		
16. Do you think you will use your green bin more as a result of your participation in this study?		
17. Will you continue to use clear bags for garbage after the study ends?		
18. This is a list of the educational and promotional information materials that you received, check off the items which you felt were useful to you. Introductory package <input type="checkbox"/> Instructions on clear bag use <input type="checkbox"/> Frequently asked questions sheet <input type="checkbox"/> Doorhangers <input type="checkbox"/>		
19. Do you have any further comments on the use of clear bags for garbage? _____ _____ _____		
20. Would you support a requirement that all household garbage must be set out in clear bags?		
21. Would you support a decrease in the limit on the number of garbage bags that can be set out for collection, if the limit helped to increase waste diversion from landfill?		
22. In order to encourage residents to use the Blue Box and Green Bin waste collection programs provided by Durham Region, do you think that all garbage bags should have to be tagged, at a cost to the resident?		
23. Would you like to receive important information on waste programs by email? If yes, please provide your email address: _____		

***You must complete this section to be entered into the prize draw. Entries must be received by April 20, 2009 for draw entry.**

Name: _____ Tel. No. _____
 Address: _____
 How many people reside in your household? Adults: _____ Children: _____

Thank you very much for completing this important survey.

The results of this survey, and the name of the prize winner, will be posted on the Region's Waste Management website at www.durhamregionwaste.ca in June 2009.

Region of Durham Works Department
 905-579-5264 or 1-800-667-5671
www.durhamregionwaste.ca

Study Communications: Mid-January to March 2009

6. Notice of final collection - sent with Resident Survey

Attention Courtice residents

The final collection in your area for the Clear Bags Pilot Study will be on March 25.

NOTE: New levels of service start March 31.

Your next scheduled garbage collection date after March 25 is April 1. You may use regular, standard-sized garbage bags with a four-bag limit within the 20 kgs (44 lbs) weight restriction.

Thank you for your participation in this important waste diversion study by the Durham Region Works Department.



Attention Pickering residents

The final collection in your area for the Clear Bags Pilot Study will be on April 9.

Your next scheduled garbage collection date after April 9 is April 23. You may use regular, standard-sized garbage bags up to the four-bag limit within the 20 kgs (44 lbs) weight restriction.

Thank you for your participation in this important waste diversion study by the Durham Region Works Department.



Study Communications: Mid-January to March 2009

7. Public Service Announcement: March 23, 2009

Final collection of clear bags to take place shortly as part of the Region's Clear Bags Pilot Study

WHITBY, ON – The Regional Municipality of Durham Works Department would like to remind residents in the Municipality of Clarington and the City of Pickering that the three-month Clear Bags Pilot Study will conclude shortly.

WHEN:

The final collection of clear bags, as part of the Region's Clear Bags Pilot Study, will take place on March 25 in the Municipality of Clarington and April 9 in the City of Pickering.

Regular collection (of black and green bags) will resume on April 1 in the Municipality of Clarington and April 23 in the City of Pickering.

WHERE:

The two distinct collection routes, one in the Municipality of Clarington and one in the City of Pickering—about 1,500 homes—that have been taking part in the Clear Bags Pilot Study.

WHY:

The objective of the three-month Clear Bags Pilot Study is to assess how clear bags affect diversion rates (and therefore, participation in the recycling/composting programs) within two municipalities offering different service levels (biweekly collection versus weekly pick up).

NOTE:

After the final clear bag collection date, residents may again use regular, standard-size garbage bags (either black or green). The four-bag limit, and the 20 kilogram (44 pound) weight restriction per bag/container, still applies.

The approximately 1,500 homes that participated in the Clear Bags Pilot Study will also be receiving a survey, via regular mail, that will seek feedback about residents' experiences.

The Region would like to thank all individuals for their participation in this pilot program and encourage continued participation in the Region's recycling and composting programs.

Appendix M

Examples of Clear Bag Set-outs

Examples of Clear Bag Set-outs



The large amount of plastic materials in the bags made it difficult to identify the one opaque privacy bag.





These residents are using the clear bags but it is full of solid shopping bags. Collectors should have left a collection issue sticker on the bags.



Some residents used clear bags for excess recycling. It caused confusion between the garbage & recycling collectors and it sometimes resulted in not be collected at all.



No Clear Bag Used
Excess Green bin waste placed on top of garbage



Clear bags were difficult to see up against the snow.



Enforcement Phase



Collection Issue tags were placed on non-compliant bags by the waste collectors.



This bag should have been collected since it would be considered the opaque privacy bag if it was placed inside of a clear bag. This can be confusing for the drivers.



Appendix N

Communication and Education Strategy Individual Component Cost Breakdown

June 3, 2009

Appendix N: Communication and Education Strategy – Individual Component Cost

Clear Bag Pilot Program Introductory Package (quantity of 1,381 units)		
Item	Action	Cost (\$)
Into Letters	Printing	595
FAQ / Area Map	Printing	800
Enforcement (Phases)	Printing	400
sub-total		1,795
Public Information Sessions		
PIS Invitations	email	0
FAQ's only	Printing	800
Facility Rentals	School Boards	55
Display Boards	12 @ \$37.83	454
Truck Rental	5 days	353
Advertising	Pickering / Clarington	2,414
Catering	PIS meeting	228
Staffing	Region staff OT	1.7
Preparation of Materials	Communications staff	2,856
sub-total		7,162
Door hanger delivery		
Weekly door hanger notices (3)	Printing	1,075
Contractor to deliver door hangers	5 Star	165
sub-total		1,240
Bag distribution Package		
Package Notice / FAQ	Printing	400
Truck Rental	4 days	282
GLAD Clear Plastic Bags	Additional supply	2,867
Bags for package delivery	Peninsula	104
sub-total		3,653
Collection Items		
"Collection Issue" Door hanger	Printing	426
"Thanks for sorting" Door hanger	Printing	426
Non-compliance stickers	Printing	350
sub-total		1,202
Surveys		
Satisfaction Survey	Printing	180
Return envelope	Printing	73
Postage/Set-up - return envelope	Postage	945
Survey kit envelopes	Materials	248
sub-total		1,446
Misc		
Waste Audit Equipment		266
Road Signs		1,108
sub-total		1,374
Staffing – for deliveries of packages, preparing p&e materials, interviews, presentations	Regional staff - Reg & OT evenings and weekends	18,950
Total		\$36,822