

# **MULTI-RESIDENTIAL MULTILINGUAL PILOT PROJECT**

**(WDO OPT-R3-06)**

**The Regional Municipality of Peel**

*In Partnership with*



*October 2001*

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## EXECUTIVE SUMMARY

Committed to making recycling a way of life for all its residents, the Region of Peel has launched an innovative pilot project targeting the South Asian community. To build awareness and a better understanding of apartment building recycling practices, Region of Peel staff hosted information sessions in seven Malton-area apartment buildings. This project, led by the Region's Waste Management Division, was conducted in partnership with Peel Health and ecoSource Mississauga, a local community environmental group.

To assist in communicating details of the apartment building recycling program, the Region introduced a comprehensive communication strategy:

- Letters describing the project and informing residents about the upcoming presentations were available in English and three South Asian languages: Hindi, Urdu and Punjabi.
- Advertisements were placed in local South Asian newspaper.
- Printed information brochures were available in English, Hindi, Urdu and Punjabi.
- Presentations were conducted featuring a translator, display panels, as well as a video showing viewers how to sort their recyclables and properly dispose of them in the correct recycling container bins.

This pilot project was designed to determine the impact on community recycling practices if residents receive communication in their own language. The Region's Waste Management Division is monitoring the volume and type of recyclables collected from each targeted building, both before and after the presentations, noting changes.

Results of the pre-presentation audits suggest that recycling participation at these buildings could be improved. While examining the seven target buildings it was determined that the average number of recycling bins containing paper ranged from about 1.5 to 4. Similarly, the average number of bins containing containers varied between 1.3 and 5. A post-presentation audit of these seven buildings determined that the average number of recycling bins containing paper ranged from 2.0 to 6.25 and the average number of bins containing containers varied from 3.75 to 7.50.

The amount of residents stopping and picking up a blue bag brochure in each of the four available languages was also recorded. The greatest percentage of pamphlets distributed was the English version followed by the Punjabi, Hindi and Urdu translated versions.

## **1.0 INTRODUCTION**

### **1.1 Background**

The Region of Peel's Multi-Residential Recycling Program underwent an enhancement from July to September 1998 by introducing the Blue Bag Program to apartments. At that time, each resident was provided with a reusable blue bag and information package, and each superintendent was provided with extra blue bags, a specific information package and educational posters.

All residents living in 522 of the 542 buildings in Peel were provided with reusable blue bags and information packages for the purposes of improving recycling and increasing diversion rates in Peel.

### **1.2 Project Objectives**

Although diversion rates from the Blue Bag Program were promising, some buildings in Peel performed lower than average, with high contamination rates in recyclable material. A group of these buildings are concentrated in the Malton area where a large percentage of the population is South Asian. With this in mind, the Region of Peel's Waste Management Division launched a Multi-Residential Multilingual Pilot Project in February 2001 to test the theory that the diversion and contamination rates in the Pilot buildings would improve if residents received communications in their own language. The Apartment Recycling information was translated into 3 languages other than English. These languages were Punjabi, Hindi and Urdu.

The main goals of the Multilingual Pilot Project was to:

- Increase the participation of residents in the sample area in the Blue Bag Program
- Improve the quality of recycling in the pilot buildings by decreasing contamination of recycling bins
- Increase the diversion in the pilot buildings

The results of the Multilingual Pilot Project will help to determine whether a language barrier was the reason for the low success of the Apartment Blue Bag Program in Malton.

In addition to achieving the goals of this specific pilot, the compiled results will also help staff to determine the value of multi-lingual communications in Peel for possible use in other future programs. If the pilot project generates meaningful results, it can also be made available to other municipalities in Ontario to help them develop similar community language based communication programs.

### 1.3 Project Methodology

The pilot project consisted of auditing the recycling containers at each of the seven apartment buildings in Malton, as well as implementing a communication strategy that targeted the South Asian community. The communication strategy consisted of a tenant/superintendent letter, a South Asian newspaper advertisement, and a Punjabi radio talk show. The final component of the communication strategy was presentations conducted at each of the seven pilot apartments. Following the presentations, the buildings were re-audited for contamination and diversion levels.

### 1.4 Geographic Scope

Malton is situated in the north-eastern portion of Mississauga within the Region of Peel.

## 2.0 METHODOLOGY

Seven pilot apartment buildings in Malton were considered for the project due to their overall “poor performance” regarding recycling. The seven buildings include:

- 3420 Morning Star Dr.
- 3455 Morning Star Dr.
- 3425 Morning Star Dr.
- 3577 Derry Rd.
- 3555 Derry Rd.
- 3533 Derry Rd.
- 7340-7350 Goreway Drive.

**\*NOTE: 3455 Morning Star Drive was not monitored in the post presentation monitoring stage as this apartment declined an invitation to participate in the presentations.**

### 2.1 Pre-Presentation Audits

Each building was monitored once a week to attain quantities of recyclables in each container, as well as to attain qualitative observations of any cross contamination of recyclable materials. The waste audits were conducted the day before (late afternoon) regular recycling pick-up. These inspections took place from February 2001 until the middle of August of the same year.

To facilitate the new two-sort recycling program in apartments, the old stickers on the recycling containers were removed and replaced with new stickers labelled either Paper Products or Container Products. The introduction of the 2-sort system was designed to facilitate the contamination problem. Residents are expected to only separate their paper products from container products with this new 2-sort system.

## 2.2 Presentations

Informal presentations were conducted at the seven apartment buildings in Malton. Prior to conducting the presentations, posters with the appropriate date of each presentation were placed in the apartments to advertise the presentations.

Beginning August 23rd, 2001 and ending August 30th, 2001, presentations were held in the lobbies of the selected apartment buildings. Each presentation consisted of a display board, information video, information pamphlets in several languages (English, Punjabi, Hindi and Urdu), reusable blue bags, magnets and pencils.

The presentations were used as an open discussion period for the tenants where they were able to ask questions, watch the information video and pick up blue bags and information packages.

The number of residents who had attended the presentations was recorded as well as the number of pamphlets distributed in each language.

In addition, a translator was also available during the presentations to help translate information and to answer any questions and/or concerns for the Punjabi, Hindi and Urdu speaking residents.

## 2.3 Post-Presentation Audit

Upon completion of the presentations, post audits were conducted in the same manner as described in Section 3.1 (Pre-Presentation Audits).

This monitoring strategy was implemented in order to compare the variation in contamination and diversion rates before and after the translated information was provided and the presentations were completed.

## 2.4 Data Collection

The following recyclable materials were examined during the waste audits: plastics, newspaper, food and beverage cans, clear and coloured glass, and cardboard. During the audits, the amount of recyclable material in each bin was monitored. In addition, visual observations of any contamination or mixing of materials were also noted. Each apartment recycling container for the seven buildings was visually assessed and the information was noted similar to the example below.

3420 Morning Star Dr.							
Date	Cardboard	Newspaper	Clear Glass	Colour Glass	Plastics	Cans	Contamination (Y/N)
Jan 26/01	0.00	0.50	0.20	0.20	0.25	0.25	N
Feb 01/01	0.00	1.25	0.33	0.25	0.75	0.33	Y

## 2.5 The Communication Strategy

### 2.5.1 Letter to Superintendents/Tenants

The communication strategy for this pilot project commenced with the distribution of letters to the seven target buildings in Malton, written in English as well as being translated in Punjabi, Hindi and Urdu. These letters briefly described the two-sort recycling program recently introduced to apartments, as well as to inform the residents that presentations were to be conducted in the near future.

### 2.5.2 Advertisement in Punjabi Newspaper

A Blue Bag advertisement, translated in Punjabi, was placed in Malton's local Punjabi newspaper, *Hamdard Weekly*, running for two consecutive weeks in May. The advertisement was intended to inform citizens within Malton's South Asian community about proper recycling methods and the two-sort recycling system applicable to apartment buildings.

### 2.5.3 Punjabi Radio Show

Two senior Waste Management representatives accompanied Baldev Mutta (radio talk show host) on a Punjabi radio talk show that aired on two different dates. The first aired on Friday August 10<sup>th</sup>, 2001 at 6:30 p.m. and again on August 24<sup>th</sup> at 6:30 p.m. The radio show was used as a communication strategy since it allowed the listeners to call in and provide comments as well as ask questions about the project. A series of questions concerning apartment recycling as well as information about the upcoming presentations were discussed on the show. Mr. Mutta posed the questions in English and the senior Waste Management representatives answered them accordingly in English. Mr. Mutta then made any of the required translations. Some of the questions were as follows:

1. What is the Multi-lingual project all about?
2. Why was Malton chosen for the project?
3. How does the previous apartment recycling differ from the new one?

4. What information will the presentations provide to the residents?
5. What other forms of public communication will be involved in this project?

### 3.0 RESULTS

The final phase of the pilot project was the post presentation audits. The audits took place for four consecutive weeks after the presentations and will continue for another twelve weeks. A subsequent comparison and evaluation of the all of the results follows. Once the monitoring was complete, Waste Management Staff assessed the variation in diversion and contamination from each building.

**NOTE: 3455 Morning Star Drive was not monitored for amount of recycling during the Post Presentation stage as they declined a chance for a presentation at their Apartment.**

#### 3.1 Pre Presentation and Post Presentation Audits

**Table 1: Pre Presentation and Post Presentation Audits**

Building	Average Number of Paper Bins (Pre Presentation)	Average Number of Paper Bins (Post Presentations)
3420 Morning Star	1.95	2.00
3455 Morning Star	1.60	N/A
3425 Morning Star	1.81	2.00
3577 Derry	1.54	3.25
3555 Derry	2.17	3.50
3533 Derry	2.56	3.50
7340-7350 Goreway	4.11	6.25

Building	Average Number of Container Bins (Pre Presentation)	Average Number of Container Bins (Post Presentation)
3420 Morning Star	1.43	5.00
3455 Morning Star	1.92	N/A
3425 Morning Star	1.34	3.75
3577 Derry	2.16	5.50
3555 Derry	1.90	5.00
3533 Derry	1.99	5.25
7340-7350 Goreway	5.13	7.50

Building	Average Number of Total Bins (Pre Presentation)	Average Number of Total Bins (Post Presentations)
3420 Morning Star	3.37	7.00
3455 Morning Star	3.52	N/A
3425 Morning Star	3.15	5.75

3577 Derry	3.70	8.75
3555 Derry	4.07	8.50
3533 Derry	4.54	8.75
7340-7350 Goreway	9.24	13.75

The above tables reveal an increase in the number of recycling containers picked up at each apartment complex after presentations had been performed at each apartment. Overall there was an increase in the number of Paper Containers, Container Item Containers and average total amount of containers picked up at the selected apartments. 3577 Derry Road had the largest increase in the number of containers collected.

### 3.2 Average Weight in Kilograms Collected

The following tables and figures show an estimated weight for each recyclable stream collected at each of the selected apartments per week.

In order to achieve an estimated weight the following volumes and densities were assumed:

Volume of Container = 95 US Gallons = 0.359614 m<sup>3</sup>  
Average Density of Recyclable Paper = 172.2 Kg/m<sup>3</sup>\*  
Density of Recyclable Container Items\*\* = 104.4 Kg/m<sup>3</sup>\*\*\*

\* Average from samples containing newspapers, magazines, mail inserts, corrugated cardboard and boxboard, taken from the Miller MRF from the report titled 'Residential Waste Material Density Study – April 2001' (WDO OPT/ORG-R2-02)

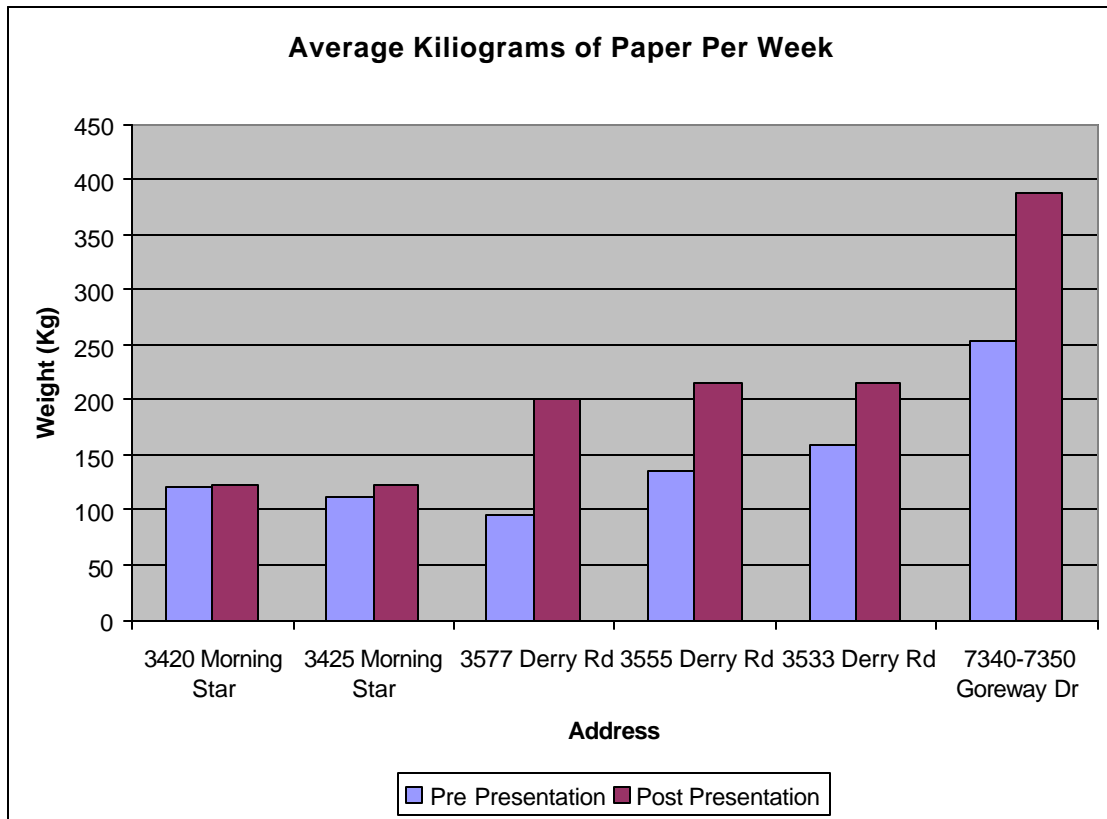
\*\* Container Items include: ferrous cans, aluminium cans, mixed PET, mixed glass and HDPE bottles

\*\*\* Sample taken from the Miller MRF as recorded in the report titled 'Residential Waste Material Density Study – April 2001' (WDO OPT/ORG-R2-02)

**Table 2: Average Weight (Kg) of Paper Collected Per Week**

Building	Average Weight (Kg) of Paper (Pre Presentation)	Average Weight (Kg) of Paper (Post Presentation)
3420 Morning Star	120.76	123.86
3425 Morning Star	112.09	123.86
3577 Derry Rd	95.37	201.27
3555 Derry Rd	134.39	216.76
3533 Derry Rd	158.54	216.76
7340-7350 Goreway Dr	254.53	387.06

**Figure 1: Average Weight (Kg) of Paper Collected Per Week**



As seen in Figure 1, it can be seen that there was an overall dramatic increase in the amount of recycled paper collected after the presentations when comparing the recyclable material as a mass. The apartment building with the largest average weight of recyclable paper collected was 7340-7350 Goreway Drive and the largest increase in the amount of recycled paper collected was found at 3577 Derry Road.

**Table 3: Average Weight (Kg) of Container Items Collected Per Week**

Building	Average Weight (Kg) of Container Items (Pre Presentation)	Average Weight (Kg) of Container Items (Post Presentation)
3420 Morning Star	53.68	187.7
3425 Morning Star	50.3	140.78
3577 Derry Rd	81.09	206.47
3555 Derry Rd	71.33	187.7
3533 Derry Rd	74.7	197.09
7340-7350 Goreway Dr	192.58	281.55

**Figure 2: Average Weight (Kg) of Container Items Collected**

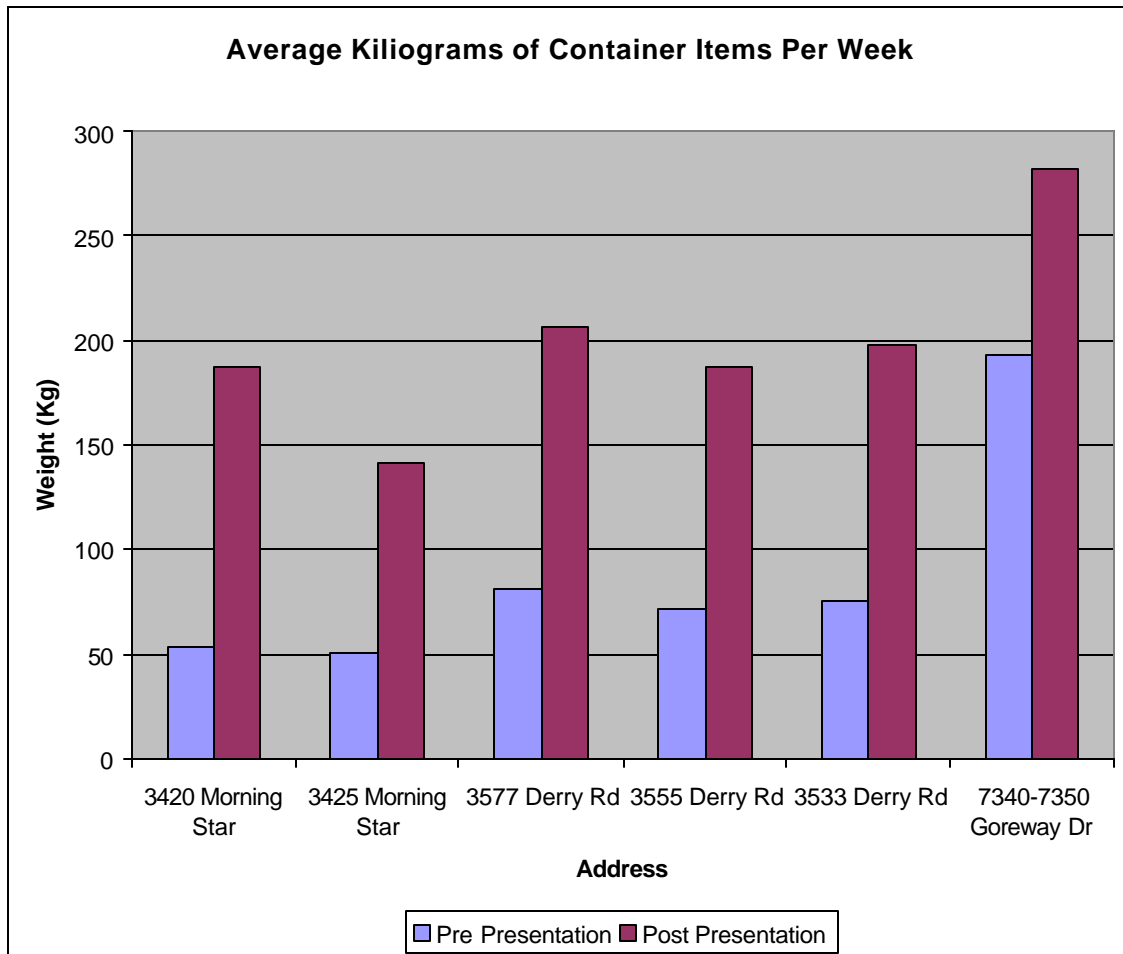
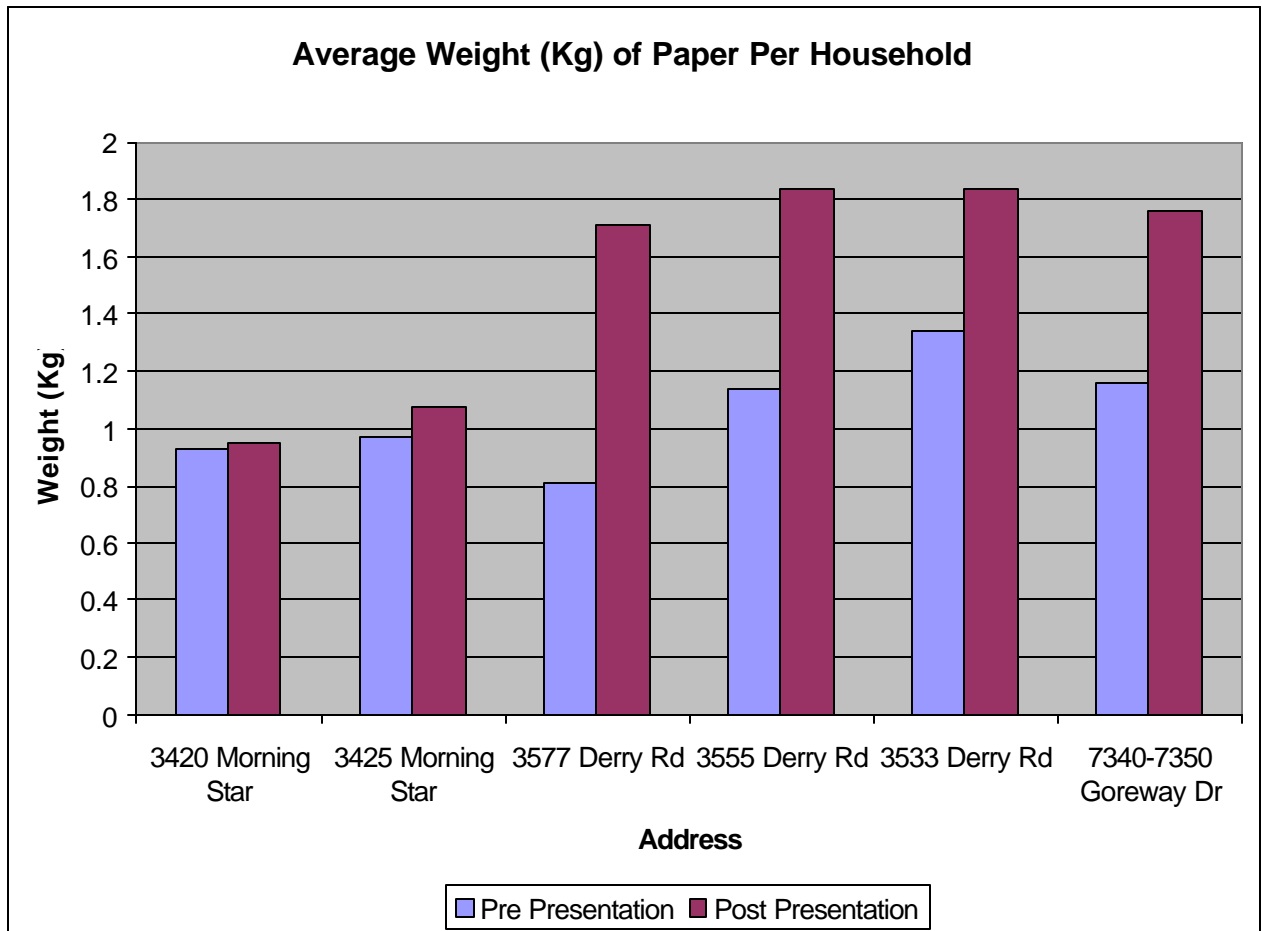


Figure 2 reveals a significant increase in the amount of Container Items being recycled can be noticed throughout the six selected buildings that participated in the study. 7340-7350 Goreway Drive had the largest average weight of Container Items collected with all the apartment buildings having similar increases.

**Table 4: Average Weight (Kg) of Recyclable Paper Per Household**

Building	Average Weight (Kg) of Paper Per Household (Pre Presentation)	Average Weight (Kg) of Paper Per Household (Post Presentation)
3420 Morning Star	0.93	0.95
3425 Morning Star	0.97	1.07
3577 Derry Rd	0.81	1.71
3555 Derry Rd	1.14	1.84
3533 Derry Rd	1.34	1.84
7340-7350 Goreway Dr	1.16	1.76

**Figure 3: Average Weight (Kg) of Recyclable Paper Per Household**

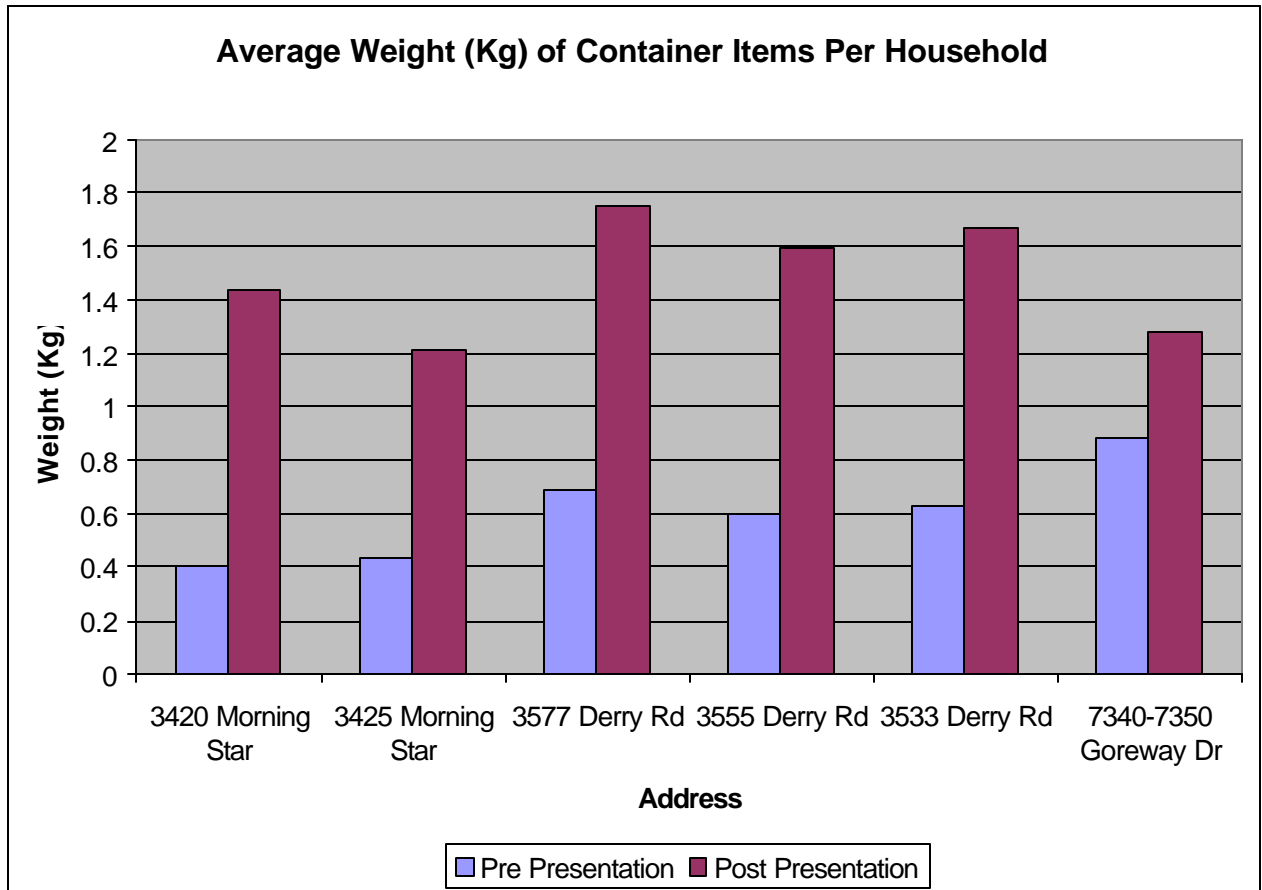


On a Kilogram per household basis, 3555 and 3533 Derry Road averaged the most recycled paper. Significant increases could be seen in all three Derry Road apartments with the largest increase being at 3577 Derry Road.

**Table 5: Average Weight (Kg) of Container Items Collected Per Household**

Building	Average Weight (Kg) of Container Items Per Household (Pre Presentation)	Average Weight (Kg) of Container Items Per Household (Post Presentation)
3420 Morning Star	0.41	1.44
3425 Morning Star	0.43	1.21
3577 Derry Rd	0.69	1.75
3555 Derry Rd	0.6	1.59
3533 Derry Rd	0.63	1.67
7340-7350 Goreway Dr	0.88	1.28

**Figure 4: Average Weight (Kg) of Container Items Collected Per Household**

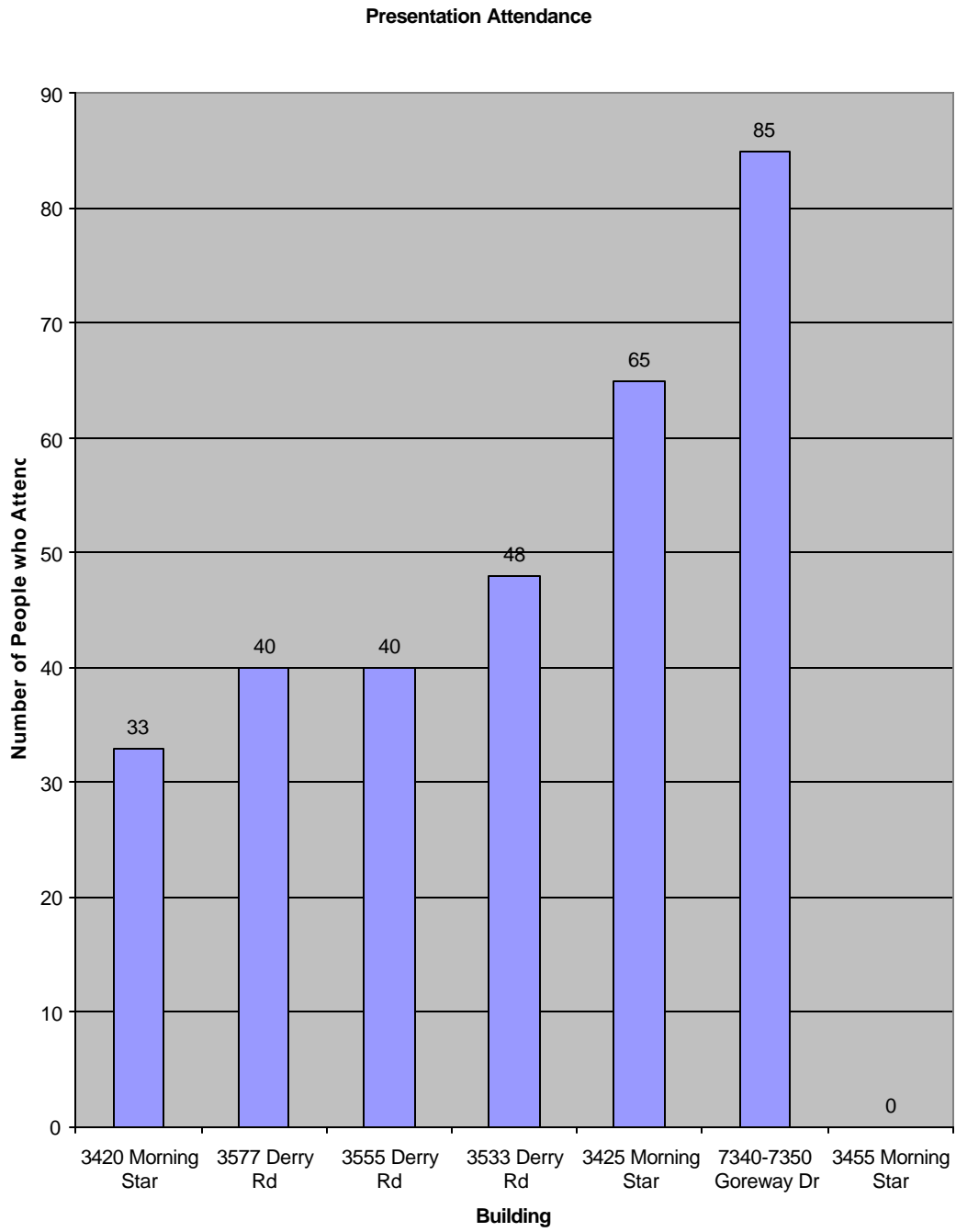


On a Kilogram per household basis, 3577 Derry Road generated the most recycled Container items in the post presentation monitoring. All six apartments had significant increases.

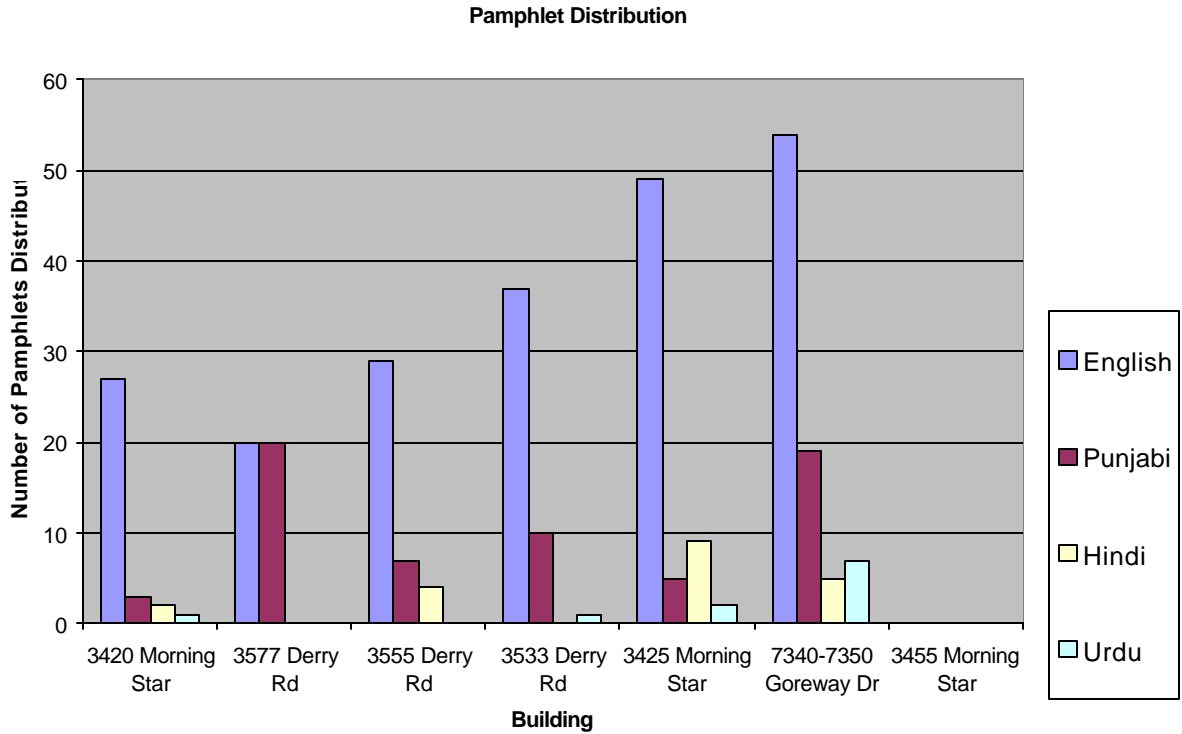
### 3.3 Presentation Attendance

As part of the project a running total of how many people attended the presentations as well as the number of different brochures that were handed out at each presentation was kept. These statistics were kept in order to figure out if the translated information would have any effect on diverting recyclable material from the waste stream.

**Figure 5: Presentation Attendance**



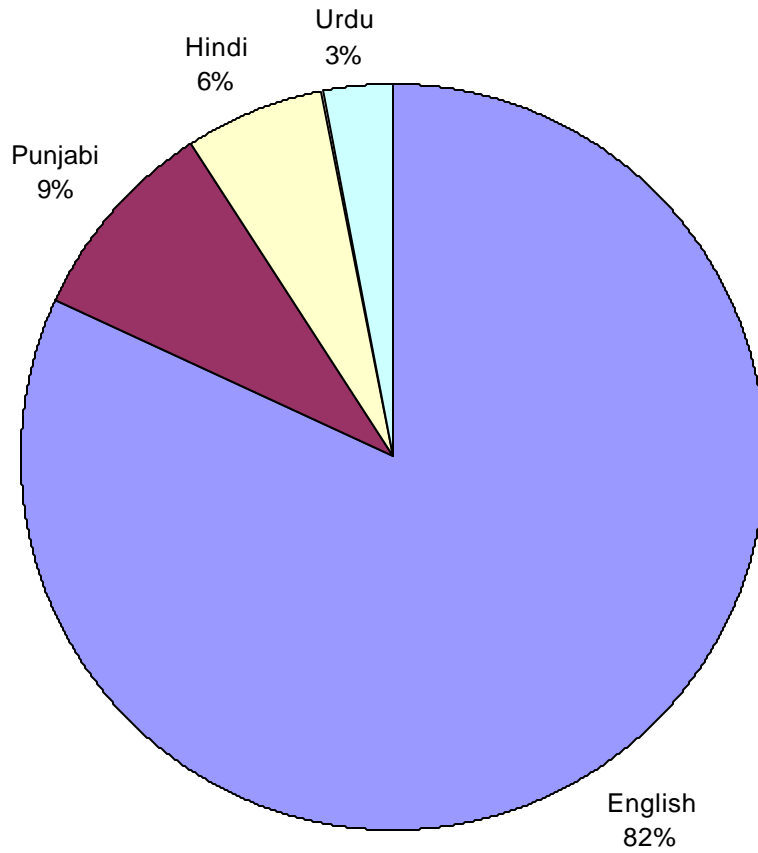
**Figure 6: Pamphlet Distribution**



Location	Date	English	Punjabi	Hindi	Urdu	Total # of Visitors
3420 Morning Star	Aug. 22	27	3	2	1	33
%		81.82	9.09	6.06	3.03	
3577 Derry Rd	Aug. 23	20	20	0	0	40
%		50	50	0	0	
3555 Derry Rd	Aug. 24	29	7	4	0	40
%		72.5	17.5	10	0	
3533 Derry Rd	Aug. 27	37	10	0	1	48
%		77.08	20.83	0.00	2.08	
3425 Morning Star	Aug. 28	49	5	9	2	65
%		75.38	7.69	13.85	3.08	
7340-7350 Goreway Dr	Aug. 29	54	19	5	7	85
%		63.53	22.35	5.88	8.24	

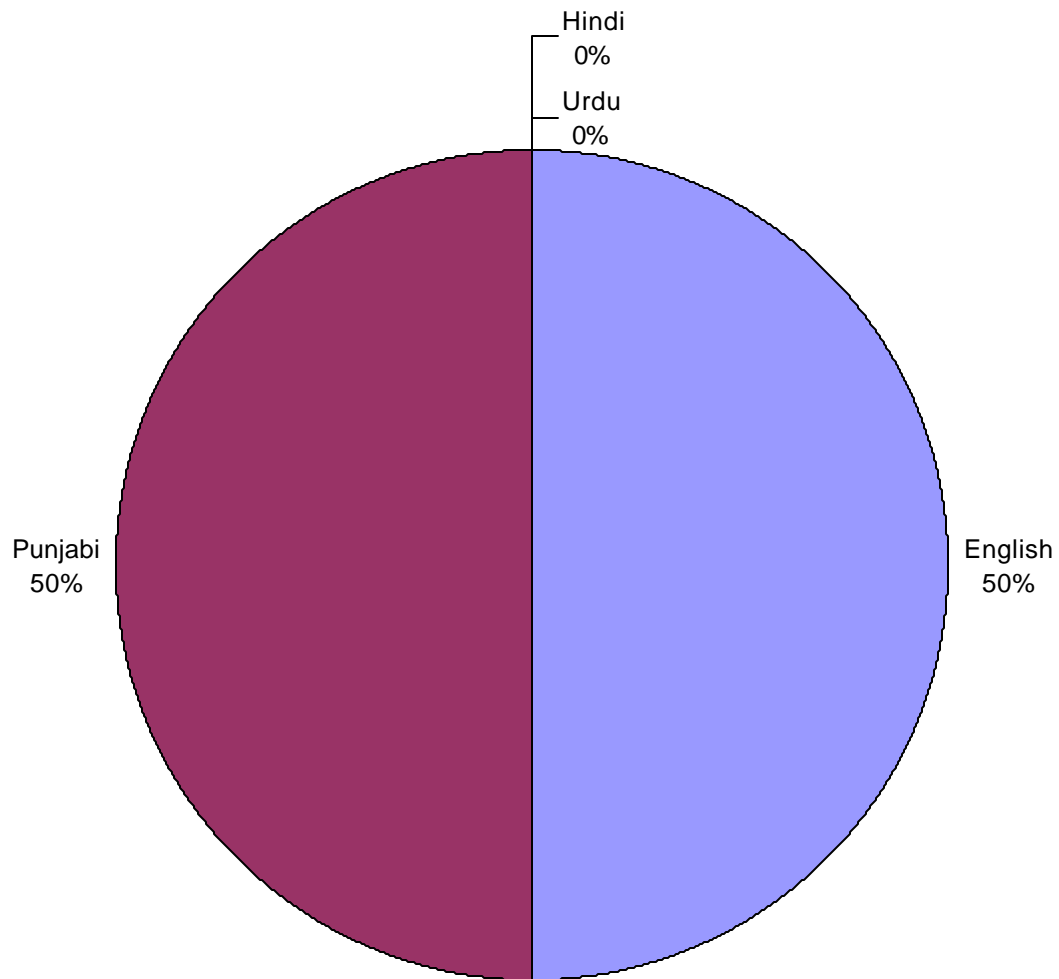
In five of the six presentations, English and Punjabi pamphlets were given out the most with the exception of 3425 Morning Star Drive where Hindi was the runner up to the English pamphlets.

**Figure 7: Percentage of Pamphlets Distributed at 3420 Morning Star Drive**



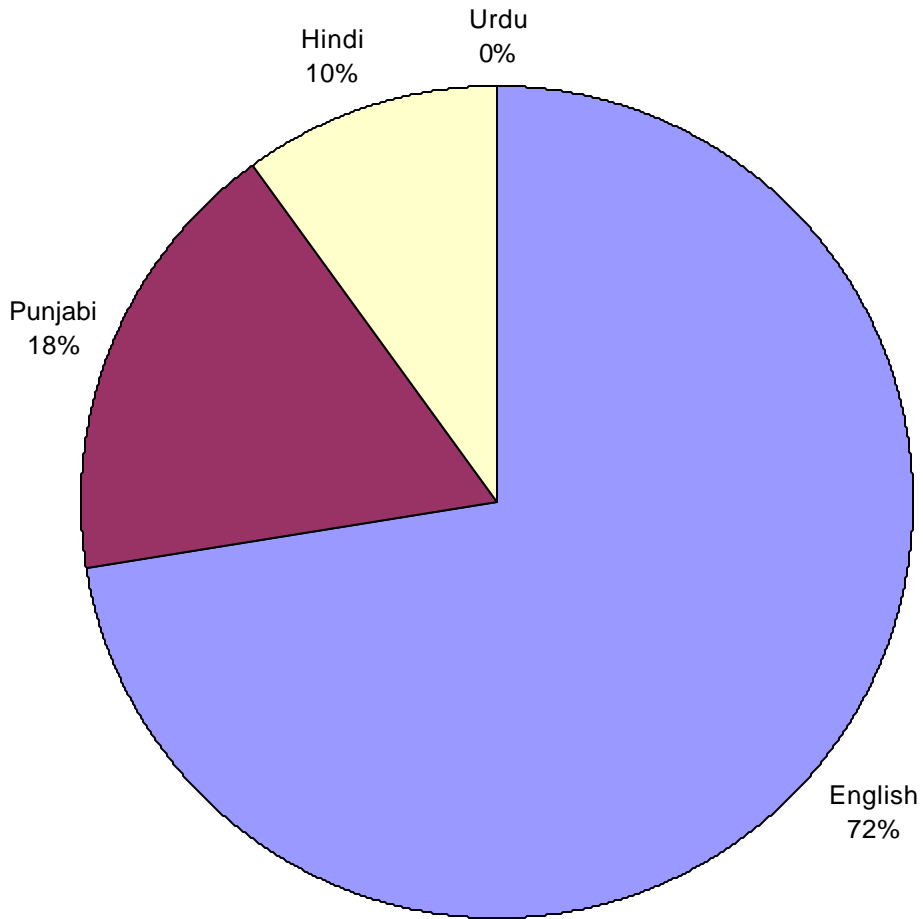
English and Punjabi pamphlets were distributed the most at 3420 Morning Star Drive.

**Figure 8: Percentage of Pamphlets Distributed at 3577 Derry Road**



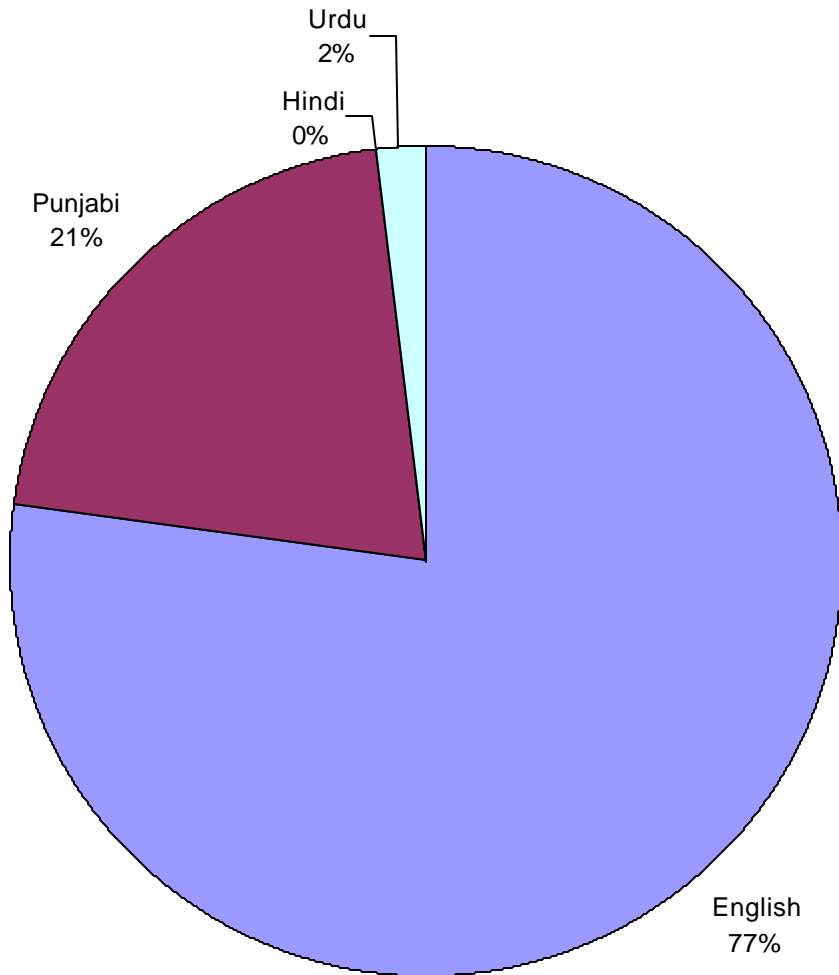
There was a 50/50 split in the distribution of English and Punjabi pamphlets distributed at 3577 Derry Road.

**Figure 9: Percentage of Pamphlets Distributed at 3555 Derry Road**



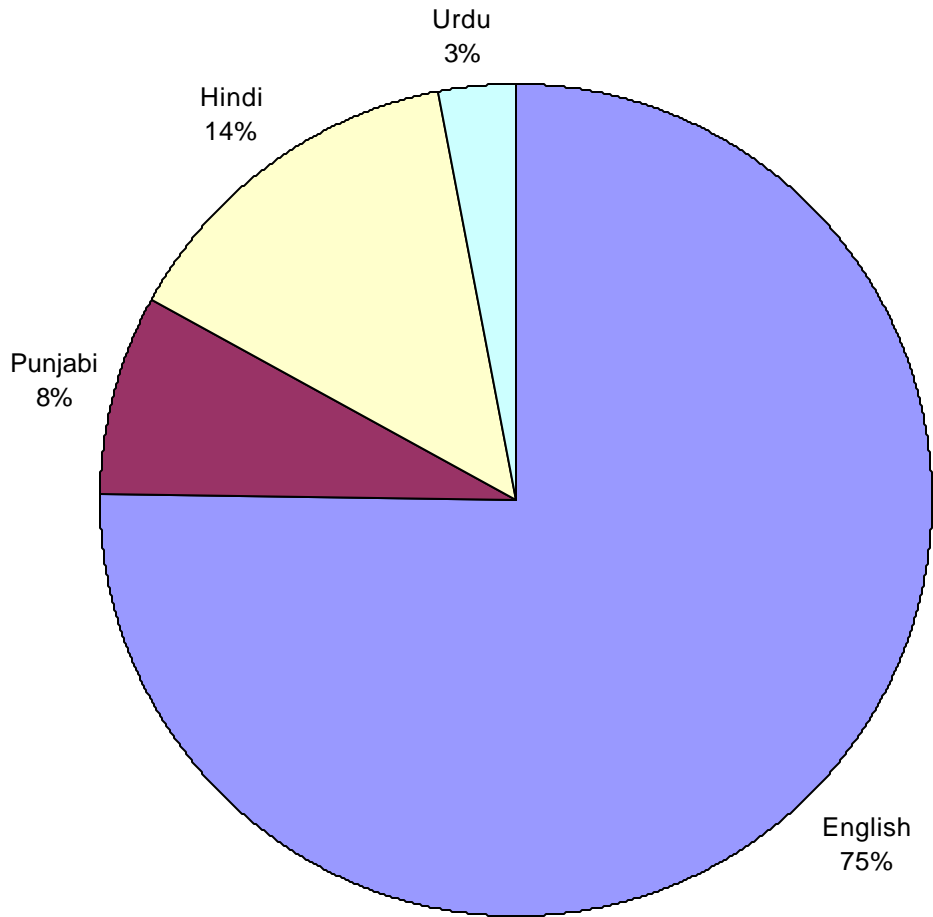
English and Punjabi were the predominant pamphlets distributed at 3555 Derry Road.

**Figure 10: Percentage of Pamphlets Distributed at 3533 Derry Road**



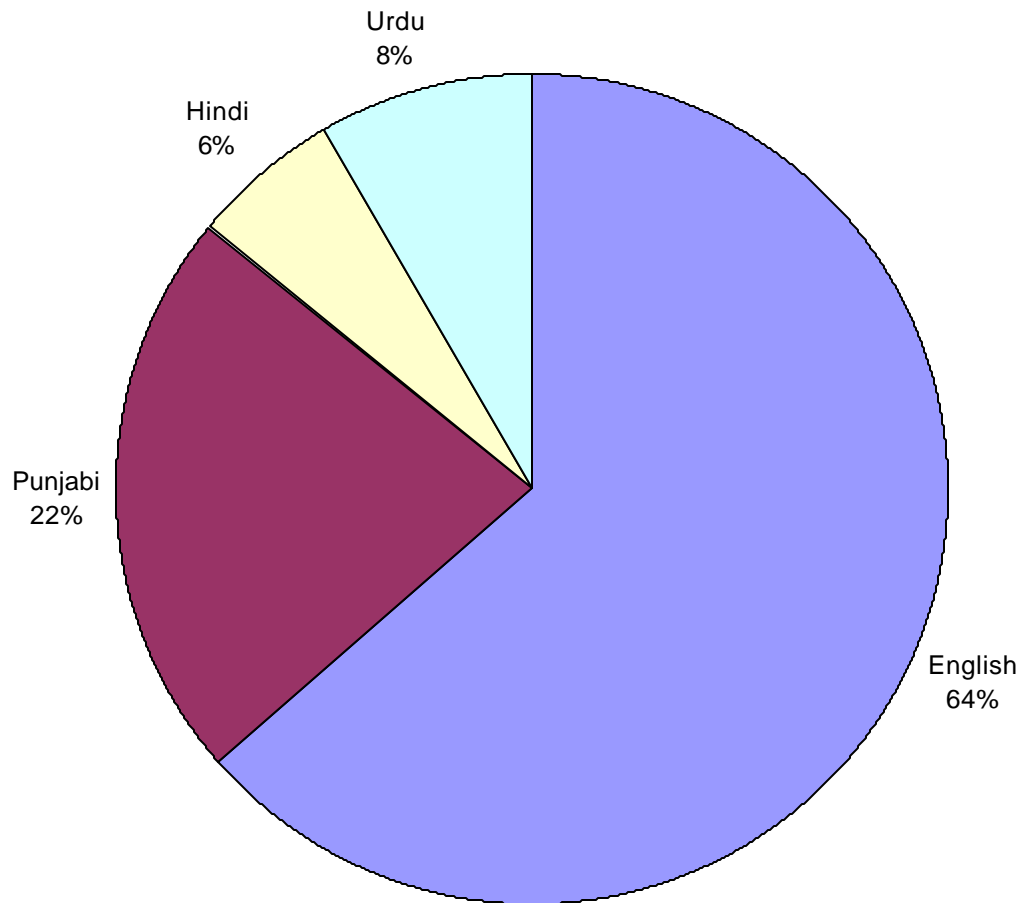
English and Punjabi pamphlets were distributed the most at 3533 Derry Road.

**Figure 11: Percentage of Pamphlets Distributed at 3425 Morning Star Drive**



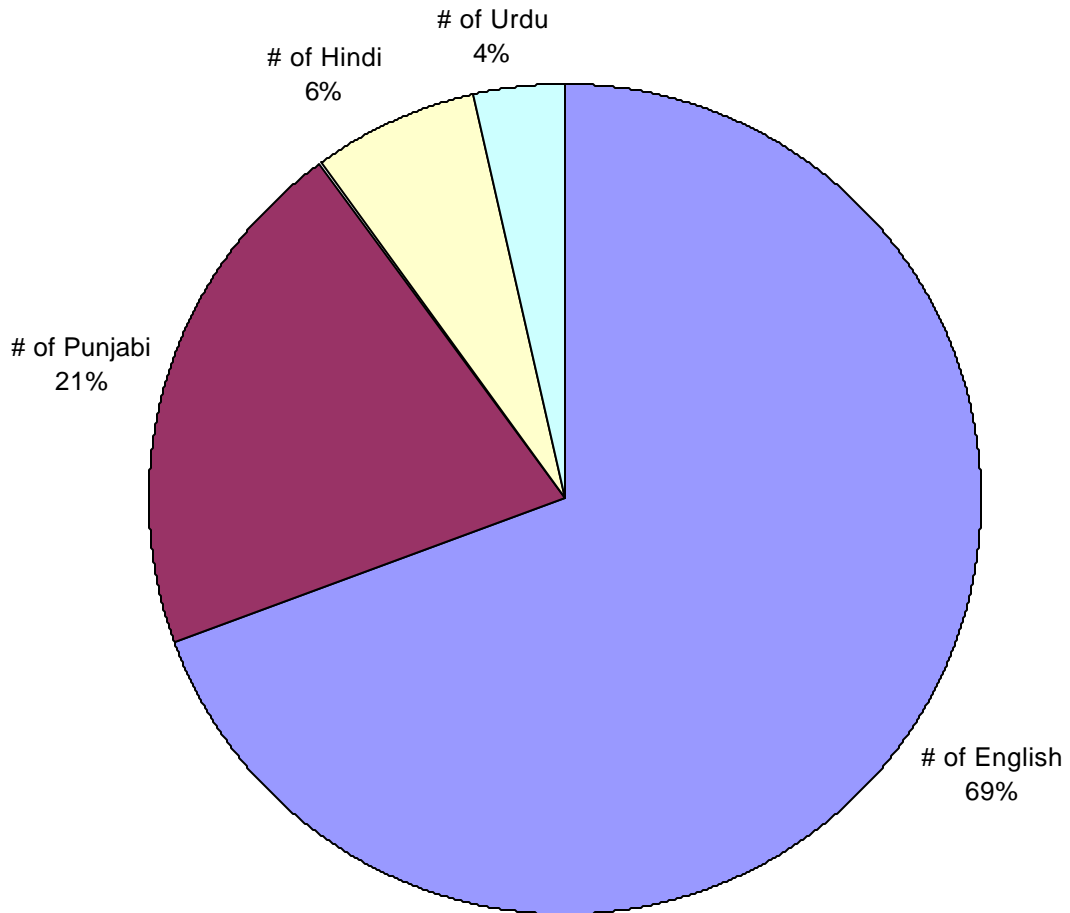
English and Hindi pamphlets were given out the most at 3425 Morning Star Drive

**Figure 12: Percentage of Pamphlets Distributed at 7340-7350 Goreway Drive**



English and Punjabi Pamphlets were given out the most at 7340-7350 Goreway Drive.

**Figure 13: Percentage of Pamphlets Distributed in Total**



Overall, English pamphlets were distributed the most followed by Punjabi, Hindi, and Urdu pamphlets.

## **4 CONCLUSIONS AND RECOMMENDATIONS**

The study demonstrated an overall increase in the amount of recycling collected at each of the selected apartments that participated in the pilot project. These apartments received recycling presentations and recycling information in languages other than English. The increase in recycling can be observed through 3 means:

- ◆ The average number of recycling containers collected at each apartment
- ◆ The average weight of recyclable material collected at each apartment
- ◆ The average weight of recyclable material collected per household at each apartment

To further enhance the accuracy of the monitoring process, English versions of the apartment recycling information package should have been distributed to each apartment closer to the time that the initial monitoring took place (original information packages were distributed in 1998). This would have helped in determining whether it was the translated information or being 'refreshed' with the recycling information that was most responsible for the increase in recyclable material collected.

Initial feedback from the presentations suggested that residents in the selected apartment buildings were pleased to see information in other languages and thought that this would help the situation at the apartments.

The Region of Peel is multi-culturally diverse. Therefore by providing apartment recycling information in more languages, other than English, Punjabi, Hindi and Urdu that are provided now, there should be an overall larger increase in the amount of recyclable material collected. For the present it is recommended that the Waste Management staff make accessible the translated apartment recycling information to all multi-residential units throughout the Region of Peel and continue to monitor the targeted apartment buildings over the next 2 months.

## **5 TRANSFERABILITY TO OTHER MUNICIPALITIES IN ONTARIO**

This project and the results compiled could be used in other Municipalities in Ontario, which have populations of people with differing ethnic backgrounds. For example, a similar project is used in Toronto Ontario where curbside garbage and recycling information is provided to residents in over 14 different languages when requested. The results of this project may also lead to the implementation of other translated literature that could be distributed by Waste Management staff and other departments in the Region of Peel.

## **Appendix A: Recycling Audits**

## Appendix A: Recycling Audits

3420 Morning Star Dr							
Pre Presentation							
Date (M/D/Y)	Cardboard	Newspaper	Clear Glass	Coloured Glass	Plastic	Cans	Contamination (Y/N)
02/01/01	0.00	1.25	0.33	0.25	0.75	0.33	Yes
02/08/01	0.00	1.50	0.25	0.25	0.50	0.50	No
02/15/01	0.00	0.75	0.20	0.25	0.25	0.25	No
02/22/01	0.00	1.00	0.13	0.13	0.50	0.17	No
03/01/01	1.00	2.00	1.00	1.00	1.00	1.00	No
03/08/01	0.00	2.00	1.00	1.00	1.00	1.00	No
03/15/01	0.50	0.50	0.20	0.17	0.75	0.50	Yes
03/22/01	0.00	2.00	1.00	1.00	2.00	1.00	No
03/29/01	0.00	2.00	0.00	1.00	2.00	1.00	No
04/05/01	0.00	2.00	1.00	1.00	2.00	1.00	No
04/12/01	0.00	0.75	0.25	0.25	1.00	0.50	Yes
04/19/01	0.00	0.50	0.33	0.25	1.00	0.50	Yes
04/26/01	0.00	1.00	0.50	0.20	0.75	0.25	No
05/03/01	0.00	1.75	0.2		0.75	0.20	Yes
05/10/01	0.00	2.00	0.20	0.20	0.50	0.20	Yes
05/17/01	0.00	1.50	0.20	0.17	0.50	0.50	No
05/24/01	0.00	2.00	0.20	0.20	0.75	0.20	No
05/31/01	0.00	1.25	0.17	0.17	0.75	0.25	No
06/07/01	0.00	1.00	0.25	0.20	0.50	0.20	No
06/14/01	0.00	1.00	0.33	0.20	0.50	0.20	No
06/21/01	0.00	1.50	0.33	0.33	0.75	0.50	Yes
06/28/01	0.00	1.75	0.20	0.17	1.00	0.25	No
07/06/01	0.00	1.00	0.20	0.17	1.00	0.50	No
07/12/01	0.00	1.50	0.17	0.33	0.50	0.50	No
07/19/01	0.00	1.50	0.17	0.33	0.50	0.25	Yes
07/26/01	0.00	1.50	0.33	0.25	0.75	0.20	No
08/02/01	0.00	1.75	0.17	0.33	0.75	0.50	No
08/09/01	0.00	1.00	0.33	0.25	0.75	0.20	No
08/16/01	0.00	1.50	0.33	0.25	0.75	0.25	No

**Post Presentation**

Date (M/D/Y)	Cardboard	Paper	Containers (Glass, Cans and Plastic)	Contamination (Y/N)
08/31/01	1.00	1.00	4.50	No
09/07/01	1.00	1.00	5.00	No
09/14/01	1.00	1.00	5.00	No
09/21/01	1.00	1.00	5.00	No

**3455 Morning Star Dr**

**Pre Presentation**

Date (M/D/Y)	Cardboard	Newspaper	Clear Glass	Coloured Glass	Plastic	Cans	Contamination (Y/N)
02/01/01	0.00	1.83	0.00	0.00	0.50	0.25	No
02/08/01	0.00	1.50	0.25	0.25	0.50	0.50	No
02/15/01	0.00	1.50	0.25	0.25	0.50	0.50	Yes
02/22/01	0.00	2.50	Locked				No
03/01/01	0.00	2.00	0.00	1.00	1.00	0.00	No
03/08/01	0.00	3.00	0.00	0.00	1.00	1.00	No
03/15/01	0.00	3.00	0.20	0.50	0.75	0.40	Yes
03/22/01	0.00	2.00	1.00	0.00	1.00	1.00	Yes
03/29/01	0.00	2.00	0.00	0.00	1.00	1.00	No
04/05/01	0.00	2.00	0.00	1.00	1.00	1.00	No
04/12/01	0.00	1.50	0.20	0.20	1.00	0.50	No
04/19/01	0.00	2.00	0.20	0.20	0.75	0.20	No
04/26/01	1.50	1.50	0.20	0.20	1.00	0.20	No
05/03/01	0.00	1.50	0.20	0.20	0.75	0.20	Yes
05/10/01	0.00	1.50	0.20	0.20	1.00	0.20	No
05/17/01	0.00	2.50	0.25	0.00	1.00	0.25	No
05/24/01	0.00	1.50	0.25	0.00	0.50	0.50	Yes
05/31/01	0.00	1.50	0.25	0.25	0.50	0.50	No
06/07/01	0.00	2.00	0.20	0.20	0.50	0.25	No
06/14/01	0.00	2.00	0.25	0.25	0.50	0.25	No
06/21/01	0.00	1.75	0.25	0.25	0.75	0.50	No
06/28/01	0.00	1.50	0.20	0.00	0.75	0.50	Yes
07/06/01	0.00	1.75	0.33	0.00	1.00	0.50	No
07/12/01	0.00	2.00	0.33	0.20	0.75	0.25	No
07/19/01	0.00	2.00	0.20	0.25	0.50	0.25	No
07/26/01	0.00	1.50	0.20	0.25	0.50	0.25	No

08/02/01	0.00	1.50	0.20	0.20	1.00	0.10	No
08/09/01	0.00	2.00	0.25	0.25	1.00	0.25	No
08/16/01	0.00	1.75	0.20	0.25	0.75	0.25	Yes
<b>Post Presentation</b>							
Date (M/D/Y)	Cardboard	Paper	Containers (Glass, Cans and Plastic)			Contamination (Y/N)	
<b>NO MONITORING WAS DONE AS THERE WAS NO PARTICIPATION IN THE PRESENTATIONS</b>							

<b>3425 Morning Star Dr</b>							
<b>Pre Presentation</b>							
Date (M/D/Y)	Cardboard	Newspaper	Clear Glass	Coloured Glass	Plastic	Cans	Contamination (Y/N)
02/01/01	0.00	1.50	0.25		0.75	0.33	Yes
02/08/01	0.00	1.00	0.25	0.25	0.50	0.50	Yes
02/15/01	0.00	0.50	0.25	0.25	0.50	0.50	No
02/22/01	0.00	1.75	0.50		0.75	0.17	No
03/01/01	0.00	1.00	1.00	0.00	1.00	1.00	No
03/08/01	0.00	2.00	1.00	1.00	1.00	1.00	No
03/15/01	0.20	1.00	0.17		0.33	0.25	No
03/22/01	0.00	1.00	1.00	1.00	1.00	1.00	Yes
03/29/01	0.00	1.00	1.00	1.00	1.00	1.00	No
04/05/01	0.00	1.00	1.00	1.00	1.00	1.00	No
04/12/01	0.00	0.75	0.25	0.25	0.75	0.25	No
04/19/01	0.00	1.00	0.20	0.20	0.50	0.25	No
04/26/01	0.00	1.00	0.20	0.25	1.00	0.20	Yes
05/03/01	0.00	1.00	0.20	0.20	0.75	0.50	Yes
05/10/01	0.00	1.00	0.20	0.20	0.75	0.20	No
05/17/01	0.00	1.50	0.20	0.20	1.00	0.25	No
05/24/01	0.00	1.50	0.20	0.20	0.75	0.25	Yes
05/31/01	0.00	1.75	0.20	0.25	0.75	0.20	No
06/07/01	0.20	2.00	0.25	0.20	0.50	0.20	No
06/14/01	0.00	1.00	0.25	0.20	0.50	0.20	No
06/21/01	0.00	1.50	0.25	0.20	0.75	0.25	Yes
06/28/01	0.00	1.50	0.20	0.17	1.00	0.25	No

07/06/01	0.00	1.75	0.33	0.20	1.00	0.17	Yes
07/12/01	0.00	2.00	0.33	0.17	0.75	0.17	No
07/19/01	0.00	1.00	0.20	0.17	0.75	0.20	No
07/26/01	0.00	1.00	0.20	0.25	1.00	0.25	No
08/02/01	0.00	1.50	0.25	0.17	0.75	0.20	No
08/09/01	0.00	1.50	0.20	0.25	1.00	0.23	Yes
08/16/01	0.00	2.00	0.20	0.20	1.00	0.25	No
<b>Post Presentation</b>							
<b>Date (M/D/Y)</b>	<b>Cardboard</b>	<b>Paper</b>	<b>Containers (Glass, Cans and Plastic)</b>			<b>Contamination (Y/N)</b>	
08/31/01	1.00	1.00	4.00			No	
09/07/01	1.00	1.00	3.00			No	
09/14/01	1.00	1.00	4.00			No	
09/21/01	1.00	1.00	4.00			No	

<b>3577 Derry Rd.</b>							
<b>Pre Presentation</b>							
<b>Date (M/D/Y)</b>	<b>Cardboard</b>	<b>Newspaper</b>	<b>Clear Glass</b>	<b>Coloured Glass</b>	<b>Plastics</b>	<b>Cans</b>	<b>Contamination (Y/N)</b>
02/01/01	0.00	2.00	0.20	0.20	0.33	0.95	Yes
02/08/01	0.00	2.50	0.25	0.25	1.00	0.50	No
02/15/01	0.00	2.00	0.25	0.25	1.00	0.50	No
02/22/01	0.00	2.00	0.17	0.00	1.00	0.17	No
03/01/01	0.00	2.50	0.25	0.20	0.75	0.50	No
03/08/01	0.00	2.75	0.20	0.00	0.75	0.50	No
03/15/01	0.00	2.50	0.20	0.20	0.83	0.33	Yes
03/22/01	0.00	2.75	0.20	0.25	0.75	0.33	No
03/29/01	0.00	2.50	0.20	0.20	0.75	0.33	No
04/05/01	0.00	2.00	0.20	0.25	0.50	0.20	Yes
04/12/01	0.00	2.00	0.20	0.20	0.75	0.50	No
04/19/01	0.00	2.00	0.25	0.25	1.50	0.33	No
04/26/01	0.00	2.20	0.25	0.25	0.75	0.20	Yes
05/03/01	0.00	1.75	0.20	0.00	0.75	0.00	No
05/10/01	0.00	1.50	0.25	0.20	0.75	0.20	No
05/17/01	0.00	2.00	0.20	0.20	0.75	0.33	No
05/24/01	0.00	2.00	0.20	0.20	1.00	0.33	Yes
05/31/01	0.00	2.75	0.20	0.20	1.50	0.20	No

06/07/01	0.00	2.75	0.25	0.00	0.50	0.20	No
06/14/01	0.00	2.50	0.25	0.00	0.75	0.20	No
06/21/01	0.00	2.00	0.25	0.20	0.75	0.50	Yes
06/28/01	0.00	2.00	0.20	0.20	1.00	0.20	No
07/06/01	0.00	2.50	0.20	0.00	0.50	0.20	No
07/12/01	0.00	2.50	0.20	0.00	0.75	0.20	No
07/19/01	0.00	2.00	0.25	0.20	0.75	0.33	No
07/26/01	0.00	1.75	0.20	0.20	1.00	0.33	Yes
08/02/01	0.00	1.50	0.20	0.20	1.00	0.25	No
08/09/01	0.00	2.00	0.20	0.25	1.00	0.25	Yes
08/16/01	0.00	2.00	0.25	0.25	0.75	0.20	No
<b>Post Presentation</b>							
<b>Date (M/D/Y)</b>	<b>Cardboard</b>	<b>Paper</b>	<b>Containers (Glass, Cans and Plastic)</b>			<b>Contamination (Y/N)</b>	
08/31/01	1.00	2.00	5.00			No	
09/07/01	1.00	2.00	5.00			No	
09/14/01	1.00	3.00	6.00			No	
09/21/01	1.00	2.00	6.00			No	

<b>3555 Derry Rd.</b>							
<b>Pre Presentation</b>							
<b>Date (M/D/Y)</b>	<b>Cardboard</b>	<b>Newspaper</b>	<b>Clear Glass</b>	<b>Coloured Glass</b>	<b>Plastics</b>	<b>Cans</b>	<b>Contamination (Y/N)</b>
02/01/01	0.00	2.00	0.33	0.20	0.50	1.00	Yes
02/08/01	0.00	2.00	0.50	0.25	1.00	0.50	No
02/15/01	0.00	2.00	0.25	0.25	1.00	0.50	No
02/22/01	0.00	2.00	0.17	0.17	0.75	0.33	No
03/01/01	0.00	2.50	0.25	0.50	1.75	1.00	No
03/08/01	0.00	3.00	0.50	0.25	2.00	1.00	No
03/15/01	0.00	2.00	0.17	0.17	1.00	0.33	Yes
03/22/01	0.00	2.00	0.50	0.50	1.75	1.00	No
03/29/01	0.00	2.75	0.25	0.50	1.50	1.00	No
04/05/01	0.00	2.00	0.25	0.25	1.50	1.00	No
04/12/01	0.00	2.00	0.33	0.25	0.75	0.25	No
04/19/01	0.00	2.00	0.25	0.25	0.75	0.25	Yes
04/26/01	0.00	2.00	0.20	0.33	0.50	0.25	Yes

05/03/01	0.00	1.50	0.25	0.33	1.50	0.00	No
05/10/01	0.00	1.75	0.33	0.25	0.75	0.25	Yes
05/17/01	0.00	2.00	0.33	0.33	1.50	0.33	Yes
05/24/01	0.00	2.00	0.33	0.20	1.50	0.25	No
05/31/01	0.00	1.50	0.20	0.33	1.75	0.33	No
06/07/01	0.00	1.50	0.20	0.25	1.25	0.33	Yes
06/14/01	0.00	1.75	0.25	0.25	1.50	0.33	Yes
06/21/01	0.00	2.00	0.20	0.33	1.25	0.25	No
06/28/01	0.00	1.25	0.25	0.33	1.75	0.20	No
07/06/01	0.00	2.00	0.25	0.33	1.75	0.20	No
07/12/01	0.00	1.50	0.25	0.20	1.50	0.33	No
07/19/01	0.00	1.75	0.20	0.33	1.00	0.33	Yes
07/26/01	0.00	2.00	0.33	0.25	1.25	0.20	No
08/02/01	0.00	1.50	0.33	0.25	1.00	0.25	No
08/09/01	0.00	1.50	0.20	0.33	0.75	0.20	Yes
08/16/01	0.00	2.00	0.33	0.2	0.75	0.20	No
<b>Post Presentation</b>							
Date (M/D/Y)	Cardboard	Paper	Containers (Glass, Cans and Plastic)			Contamination (Y/N)	
08/31/01	1.00	2.00	5.00			No	
09/07/01	1.00	2.00	6.00			No	
09/14/01	2.00	2.00	5.00			No	
09/21/01	2.00	2.00	5.00			No	

<b>3533 Derry Rd.</b>							
<b>Pre Presentation</b>							
Date (M/D/Y)	Cardboard	Newspaper	Clear Glass	Coloured Glass	Plastics	Cans	Contamination (Y/N)
02/01/01	0.00	2.00	0.50	0.50	1.25	0.50	Yes
02/08/01	0.00	2.50	0.25	0.25	1.50	0.50	No
02/15/01	0.00	2.50	0.25	0.25	1.00	0.25	No
02/22/01	0.00	2.75	0.17	0.33	1.75	0.75	No
03/01/01	0.00	2.50	0.20	0.25	2.00	1.00	No
03/08/01	0.00	2.25	0.33	0.25	2.00	0.25	No

03/15/01	0.00	2.25	0.50	0.33	1.75	0.50	Yes
03/22/01	0.00	2.75	0.20	0.33	2.00	1.00	No
03/29/01	0.00	2.50	0.20	0.20	1.50	0.75	No
04/05/01	0.00	2.50	0.33	0.20	1.75	0.50	No
04/12/01	0.00	2.00	0.25	0.25	1.50	0.33	No
04/19/01	0.00	1.75	0.33	0.33	1.50	0.25	No
04/26/01	0.00	1.75	0.25	0.33	1.75	0.25	No
05/03/01	0.00	2.00	0.25	0.25	0.75	0.00	No
05/10/01	0.00	1.00	0.20	0.25	1.50	0.25	No
05/17/01	0.00	1.75	0.20	0.20	1.00	0.50	No
05/24/01	0.00	1.25	0.20	0.20	1.50	0.25	No
05/31/01	0.00	1.25	0.20	0.20	1.25	0.25	No
06/07/01	0.00	1.75	0.20	0.33	1.25	0.75	No
06/14/01	0.00	1.75	0.33	0.20	1.75	0.50	No
06/21/01	0.00	2.00	0.33	0.20	1.75	0.25	No
06/28/01	0.00	1.50	0.20	0.33	2.00	0.25	No
07/06/01	0.00	2.00	0.33	0.20	1.50	1.00	No
07/12/01	0.00	1.50	0.33	0.20	1.50	0.50	No
07/19/01	0.00	2.00	0.20	0.33	1.75	0.50	No
07/26/01	0.00	2.50	0.20	0.20	2.00	0.75	No
08/02/01	0.00	2.00	0.20	0.25	2.00	0.75	No
08/09/01	0.00	1.50	0.25	0.25	0.75	0.20	No
08/16/01	0.00	2.00	0.20	0.2	1.75	0.25	No
<b>Post Presentation</b>							
<b>Date (M/D/Y)</b>	<b>Cardboard</b>	<b>Paper</b>	<b>Containers (Glass, Cans and Plastic)</b>				<b>Contamination (Y/N)</b>
08/31/01	1.00	2.00	5.00				No
09/07/01	1.00	2.00	6.00				No
09/14/01	1.00	3.00	5.00				No
09/21/01	2.00	2.00	5.00				No

<b>7340-7350 Goreway Dr.</b>							
<b>Date (M/D/Y)</b>	<b>Cardboard</b>	<b>Newspaper</b>	<b>Clear Glass</b>	<b>Coloured Glass</b>	<b>Plastics</b>	<b>Cans</b>	<b>Contamination (Y/N)</b>
02/01/01	1.00	4.17	0.00	0.00	2.50	0.75	Yes
02/08/01	1.00	4.00	0.50	0.50	3.00	1.00	No
02/15/01	1.00	4.00	0.50	0.25	2.00	0.75	No

02/22/01	Not out						
03/01/01	2.00	4.50	0.50	0.50	2.50	0.50	No
03/08/01	1.00	4.50	0.50	0.25	3.00	0.50	No
03/15/01	1.50	3.50	0.35	0.00	2.75	0.60	Yes
03/22/01	1.00	3.50	0.50	0.50	3.00	0.50	No
03/29/01	1.00	3.75	0.25	0.50	2.75	0.50	No
04/05/01	1.00	4.00	0.25	0.50	3.00	0.75	Yes
04/12/01	1.00	3.50	0.25	0.25	2.50	0.75	No
04/19/01	1.00	3.50	0.50	1.50	2.75	0.50	No
04/26/01	1.00	3.00	0.50	0.20	2.50	0.75	Yes
05/03/01	2.00	3.00	0.25	0.25	2.50	0.75	No
05/10/01	1.50	4.25	0.25	0.25	2.50	0.75	No
05/17/01	1.00	5.00	0.25	0.25	3.00	0.50	No
05/24/01	1.00	5.00	0.50	0.25	2.50	0.50	Yes
05/31/01	1.50	3.50	0.25	0.25	2.75	0.75	No
06/07/01	1.75	3.75	0.50	0.25	2.00	1.00	No
06/14/01	2.00	3.00	0.50	0.25	2.50	0.75	No
06/21/01	1.50	3.50	0.25	0.50	2.50	0.50	Yes
06/28/01	1.00	4.00	0.25	0.25	3.00	0.75	No
07/06/01	1.50	3.00	0.50	0.50	2.75	0.50	No
07/12/01	1.75	3.50	0.50	0.25	3.00	0.50	No
07/19/01	2.00	3.75	1.00	0.25	2.50	0.75	No
07/26/01	2.00	3.00	1.00	0.25	2.50	1.00	Yes
08/02/01	1.50	3.50	0.25	0.5	2.00	1.00	No
08/09/01	2.00	3.00	1.00	0.25	2.75	0.75	Yes
08/16/01	2.00	4.00	0.25	0.25	3.00	0.50	No
<b>Post Presentation</b>							
Date (M/D/Y)	Cardboard	Paper	Containers (Glass, Cans and Plastic)				Contamination (Y/N)
08/31/01	1.00	2.00	5.00				No
09/07/01	1.00	2.00	6.00				No
09/14/01	1.00	3.00	5.00				No
09/21/01	2.00	2.00	5.00				No

## **Appendix B: Communications**